

Tourism Specialisation and Economic Growth

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Abstract

This thesis focuses on the relationship between tourism policy and economic growth. Primarily it evaluates the effects of specialising in tourism on the growth performance of small economies and in particular the effects of tourism specialisation based on natural resources. A secondary but related question is how do changes in the quality of natural resources affect the relationship between specialisation and growth?

These questions are considered in the framework defined by recent literature on endogenous growth theory [EG].

Consider a two-sector economy, where growth is driven by the accumulation of sector-specific human capital. The two sectors differ in their associated rates of potential learning. If the low- (no-) learning sector is defined as Tourism and the other as Manufacturing, the condition for balanced growth, under complete specialisation (i.e., equal per capita growth rate in both countries), is the presence of homothetic preferences are those spelled out in Lucas (1988).

This approach provides a rather promising outlook for economies characterised by a comparative advantage in the tourist sector -- as long as the elasticity of substitution between tourism and other goods, produced under decreasing marginal costs, is low. However, this result is based on a characterisation of the demand side that ignores an important feature of the market for tourist services: the income elasticity of the tourist may be other than one. To take account of a non-unitary income elasticity, the EG conditions for balanced growth should be redefined under a non-(quasi) homothetic utility function.

After presenting the model, two empirical analyses, using different techniques, are provided.

If consumers allocate a constant share of their (increasing) income toward financing their holidays and two different types of tourist goods exist - one based on natural resources and the other on activities unrelated to natural resources and supplied at decreasing marginal costs - then a reduction in the quality of a country's natural resources may weaken the capacity of the country's tourist sector to retain a non-decreasing share of the market.

This idea is based on the hypothesis that the two tourist goods are vertically differentiated. Quality, however, depends on the rate of exploitation. Lowering the quality lessens the value of the luxury good attached to the resource-based good.

This framework should allow for a description of the relationship between the rate of exploitation of natural resources and the conditions which allow economies specialising in tourism to reach a balanced growth path, in a market where more than one tourist good is offered.

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Chapter 3 contains material from joint work with Francesco Pigliaru (University of Cagliari, Italy). The extension of the Lucas model (paragraph 2) has been already published in Lanza, A. and F. Pigliaru, (1994). It is possible to attribute 50% of this chapter to the author of the present dissertation.

Chapter 5 contains material from joint work with Giovanni Urga (London Business School, U.K., and University of Bergamo). A preliminary version of the chapter 5 (paragraph 3) has been already published in Lanza A. and Urga G., (1995). It is possible to attribute 80% of this chapter to the author of the present dissertation.

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Introduction

The research problem and the aims of the dissertation

The economic importance of tourism is universally acknowledged by the general public, given its importance in the mass-media. It is difficult to find any political representative or ruling body (from the highest national level to the lowest local level) that does not feel the need to promote the “growth” of the “tourist industry”. In fact, “going on holiday” now involves most people who are transformed into “tourists” once or twice a year.

According to the World Tourism Organisation (WTO), tourism is the single biggest industry in the world or, according to other sources, it is destined to become so by the turn of the century. Tourism belongs to the even bigger industry of “entertainment and leisure” that is expected to progressively develop as average working hours decrease.

The main ideas of the dissertation can be summed up in the following points. The single ideas are developed in depth in the Chapters indicated in brackets.

1) For many countries tourism represents a primary source of receipts and economic growth. (Chapter 1)

2) Economic analysis of the tourism sector has highlighted many issues. Generally speaking, the macroeconomic impact of tourism is well known. For example, input-output analysis, and more recently SAM and CGE modelling (Chapter 2) are extensively used. Life Cycle analysis is also used. This model consists in the elaboration of some temporal evolution models of the geographical areas and the tourist market. Butler’s (1980) “*tourist-area cycle of evolution*” is probably the best known example (Chapter 3).

3) Microeconomic analysis of tourism is less developed and has only received more attention in recent years. In the microeconomic framework, endogenous growth models can help to identify conditions in which specialisation in the tourism sector would not be detrimental to economic growth.

This dissertation uses EG models to study both the potential of tourism as an instrument of economic growth and the relationship between the tourism sector and environmental quality.

The main question addressed here is: what are the consequences on the growth performance of a small economy of specialising in tourism? Doubts that tourism specialisation can assure good economic performance have often been voiced in the literature.

The analytical framework used in this dissertation is derived from Lucas' (1988) contribution to endogenous growth theory. The Lucas model marked an important breakthrough in understanding the nature of economic development, at least when compared with orthodox neo-classical growth theory, because, *inter alia*, Lucas considered growth effects induced by international trade. In particular, Lucas allowed for a specification of the conditions under which specialisation in tourism (at least for a small country facing international given prices) would not be detrimental to economic growth. Starting from Lucas, and developing one of the contributions of this dissertation, it can be shown that these conditions depend upon the behaviour of consumers in industrial countries. The discussion of the model is in Chapter 4.

4) An empirical analysis of the consequences of tourism specialisation is provided in Chapters 5 and 6 using different methodologies. The approach adopted here is different from many existing econometric analyses which are based on the choice of a representative consumer between competing geographical destinations. The aim of this work is to examine the characteristics of the demand for international tourism. Given the interest in

the implications of specialisation patterns, the dissertation focuses on the relationship between manufacturing consumption and tourism consumption in a world where the potential for productivity growth in the tourism industry systematically differs from that of manufacturing.

The present investigation seeks to identify some demand side conditions in OECD countries that allow for tourism specialisation in less developed countries or in the lesser developed regions of high-income countries.

This point should be qualified: the theoretical model shows the conditions under which tourism specialisation is harmful to economic growth. The results depend on conditions related to the elasticity of substitution between two bundles of goods (i.e. the Manufacturing and Tourism sectors). In order to verify this hypothesis, the dissertation looks for these particular conditions in the demand side of OECD countries. If these conditions are fulfilled, the demand side - in other words the behaviour of consumers - allows for specialisation in tourism. This study would most likely be of interest to a less developed country wishing to know whether the economic conditions of its potential demand (OECD countries) are compatible with tourism specialisation. In other words, the dissertation focuses on industrialised countries to derive some indications about the possibility of tourism-driven growth in non-industrialised countries.

5) After the empirical results are presented, a related question is analysed in Chapter 7, namely when tourism specialisation is based upon natural resources how may the changes in the quality of the natural resources affect the relationship between specialisation and growth? The discussion of this issue presents a second original contribution. Chapter 7 also presents some areas for future research.

Chapter One

Definitions and Market Dimension

1.1 Some preliminary definitions

The lack of a clear definition of “a tourist activity” particularly in economic terms, added to the impossibility of arriving at an effective evaluation of its macroeconomic dimensions and the difficulty of making reliable international comparisons, has very often led to an underestimation of its importance.

In this chapter some concepts are used whose meaning, despite their common use, is rather complex when examined more closely. For this reason, an adequate preliminary definition of some key concepts is necessary before tackling the main themes of this dissertation.

In order to carry out a study of tourism, it is important first of all to define the main protagonist of the phenomenon, in other words the “tourist”.

In common parlance the term indicates a person who makes “tours”, who travels for relaxation and pleasure. From the economic point of view, according to a definition proposed by F. W. Ogilvie in 1933 (as quoted in Mathieson A., Wall G., 1982) persons can be considered tourists on the conditions that:

a) their absence from their usual place of residence lasts a relatively short period of time; and b) the money spent during their absence derives from the place they come from and not from the places visited.

Therefore, from the economic point of view, a tourist is a consumer and not a producer, and according to the above definition travels connected with work are excluded.

It is equally evident that a minimum and maximum stay, for trips consistent with the idea of "tourism" (together with other elements such as the purpose of the trip and the minimum distance to be covered), must be fixed according to a set of conventions.

The first definition came from the United Nations Conference on Tourism, held in Rome in 1963, that recommended the adoption of the following criteria of "visitor" to include "any person who visits a country that is different from the one in which he or she lives for any purpose other than one which involves pay from the country being visited". Persons staying for less than 24 hours would be classified as excursionists while those staying longer would be tourists. Motivations for a visit may also differ. The reason for the visit can be classified under one of the following groups: a) leisure (relaxation, holidays, health, study, religion and sport); b) business, family reasons, work trips and meetings"¹

Data collected using the Rome definition may be unreliable (for example, in order to simplify the collection of statistical data, business trips may also be included in the leisure category). Nevertheless, the definition quickly became popular, thus facilitating the comparison of information. Definitions were originally concerned only with international tourists, but were soon extended to cover "domestic" or "internal" tourism (that is tourism dealing with travel inside the same country). In 1981 the WTO, in a definition very similar to the one regarding international tourism, established that "domestic tourists" were to be considered as visitors who visit a place, in the same country as they are resident, for at least 24 hours but for less than one year, for reasons of relaxation, holidays, sport, business, meetings, conventions, family reasons, health, and religion while "domestic excursionists" refers to visitors who for the same reasons stay in the place of their visit, inside their own countries, for less than 24 hours. However, these later definitions were much less successfully adopted inside the various countries.

1.2 Definition of the terms “tourism” and “tourist industry”

Having outlined the concept of tourist, “tourism” can now be defined as a phenomenon connected to the movement and behaviour of tourists. A single definition of tourism does not exist, and in fact many different definitions of the term have been given, according to the interests, the prospects and the aims of the analyst. In social science parlance the word “tourism” changes from being synonymous with the actions and the impact of tourists to indicating a loosely defined course of study or area of research.

For the purpose of this dissertation, however, it is important to establish a definition that is both acceptable and operative in an economic analysis.

In broad terms, tourism is the study of people away from their usual habitat, of the industry that responds to their needs and of the impact that both the tourist and the industry have on the socio-cultural, economic and physical environment of the host. However, it is crucial to find a formulation that clearly circumscribes the area of study to the “economic aspects” of tourism, or rather to the so-called “tourist sector” or “tourist industry”, with a view to introducing a correct comparative analysis with other sectors of the economy.

As S. Smith pointed out (1989), the most suitable definition may be presented by the supply side. An example of this type can be found in the following definition, proposed during a United Nations conference: “The tourist sector or the tourism industry ... can be broadly conceived as representing the sum of those industrial and commercial activities producing goods and services wholly or mainly consumed by foreign visitors or domestic tourists”.²

A definition of this type is useful for partially clarifying the terminology, but it does not provide an accurate definition of tourism as an economic sector. For example, among

¹ International Union of Travel Organisations [IUOTO] (1963), now World Tourism Organisation.

² United Nations Conference on Trade and Development, A note on the “Tourist Sector” as quoted in S. Smith [1989], p. 31.

the “activities that produce goods and services principally consumed by tourists” (passenger commercial transport, travel agents, tour operators, accommodation and entertainment services, souvenir producers, governmental organisations employed in the regulation of the tourist industry, etc.), *restaurants* must also be included as they provide a considerable part of their services to residents. The same reasoning applies to various other industrial and commercial activities linked to satisfying the needs of tourists.

This inability to separate the tourist sector from other sectors of the economy can have important consequences when determining its effective contribution to principal macroeconomic variables. In fact this is one of the main obstacles to an accurate study of the economic effects of tourism. Clarity may be provided by the following definition by the (Canadian) National Task Force on Tourism Data (as quoted in S. Smith (1989) which stated that “the tourist industry is the aggregate of those retail goods and services that serve the needs of people travelling outside their home community”. Tourist activities are divided into two groups: the first is represented by those activities or businesses that would cease to exist in the absence of travel (“pure tourism”); the second by those that would continue to exist but at a substantially reduced level (“partial tourism”).³

In presenting this definition, the adoption of which was recommended by the WTO in a conference in 1991, Smith (1989) focuses on the advantages. However, in this thesis the emphasis is placed on the fact that Smith’s definition includes the following:

“[tourism is] consistent with the definitions of other industries...[that] are classified in terms of the goods they produce” (Smith S., 1989, p.33).

In an economic analysis it is important to consider tourism as an industry and to be able to discuss it in terms of “tourist (economic) activity”. Although tourism is a *sui generis*

³ Smith gives examples of this sub-division, with hotels, airlines, national parks and travel agents in the first group and restaurants, taxi services, and cultural events in the second. Empirical evidence

industry, since it is made up of a number of firms that together produce a quantity of goods which are very different from each other, it can nevertheless be considered in aggregate terms and thus can be qualified as an economic sector. This is the definition used in this thesis.

The question of whether it is correct to define tourism as an industry, or to be satisfied with more sociological definitions, such as “the behaviour of tourists, the ideas that shape it and the personal (or collective) activities that are a result of it” (Leiper, 1990, p.603) has been evaluated extensively in the specialist journal *Annals of Tourism Research*.⁴

Without doubt the phenomenon has a relevant economic impact on the areas involved in tourist travel. Since other chapters in this thesis will be devoted to the discussion of these consequences, and it remains to be seen if the economic impact can be considered important enough to merit economic specialisation in the tourist sector, the definition of tourism used here is that of tourism as an “industry”.

1.3 Definition of Development

The rapid growth of international tourism has attracted the attention of many developing countries which view the expansion of their tourist facilities as a possibility for economic growth and development. This dissertation will be primarily focused on the concept of economic development as an evolutionary process of the economy, a concept that as such interests poor countries just as much as the lesser developed regions of high-income countries.

The only accepted meaning of “economic development” concerns the increase in the value of the principal macroeconomic variables and in particular in income, the value of which is defined in terms of “rate of variation”.

suggests that for businesses in the second group tourism has a share of between one quarter and one third (1989, p.32).

⁴ The debate, sparked off by an article by S. Smith [1988] also involved N. Leiper, whose position has already been looked at in some detail, and continued with a series of articles in the same journal: Leiper (1990; 1993) and Smith (1991; 1993).

The scope of the definition of economic development (adopted here with the aim of clarifying the methodology), has been vigorously discussed in the literature and has been progressively expanded to include various other concepts. It is now well accepted that development is a broad concept involving more than just an economic scope.

This is an important extension of the concept of development, in that a more general definition is more attentive to both the “development” of certain areas of high-income countries that are only able to benefit in a residual way from the more general rates of economic growth, and to a study (on a scale of analysis that is even more disaggregated) of the benefits and *costs* that such growth leads to on a local scale. This last point is essential when talking about tourism, where it is important to take into account the negative externality that it can involve on a local level, and the controversial aspects of the relationship between the exploitation of natural resources and the consequences on the resident population.⁵

However, this analysis will not, or at least only occasionally, descend to that level of disaggregation. Consequently, the following chapters will focus on the effects of tourism on the balance of payments, employment and income. In the case of tourist specialisation, particular attention will be given to the dynamics of income, aiming at identifying those theories or those hypotheses that try to explain the link between economic growth and the development of the tourist industry.

⁵ An economic analysis that focuses its attention not on income but on welfare should concentrate, for example, on a typology of hardship such as that caused to residents by periodic overcrowding of the area. It should then confront a second order of questions - less surprising than the first but undoubtedly present - connected to the local population being forced to accept sharing natural resources that are susceptible to tourist exploitation and that once were exclusively theirs, and at the same time having to suffer the imposition of forms of rationing on their access through explicit normative mechanisms or implicit price mechanisms. An example of this can be seen in the reluctance with which the local population often accepts the institution of a natural park. In such a case it is not just (or at least, only) a matter of the myopic behaviour of people who are not able to evaluate their own interests, but rather the reaction of people who see their own “utility” being diminished without having the certainty of being compensated by those who effectively benefit from their “loss”.

In such a general perspective the Hicks-Kaldor criterion may work. In the specific case of an “overall increase in affluence” the disadvantaged can be recompensed by the benefits of new economic situation.

On the other hand, the “local-regional” dimension of economic development can at least be partially regained, given the focus of this thesis which is to study the effects that tourism of a strictly international nature, has on the economic growth of a small economy. Such an idea begins with an investigation of *how and if* an economic sector like tourism can produce wealth, and moves on to an investigation of *how and if* this sector can contribute to the territorial redistribution of the production centres of that wealth.

1.3.1 The concept of human development

Today, societies are judged primarily according to their ability to increase their members' welfare, or more broadly to increase their satisfaction and happiness. A standardised assessment and comparison of different levels of development, however, is difficult given the various indices used to measure "development". For a quantitative comparison, the gross national product per inhabitant has been preferred until recently. Without a doubt, this is a meaningful index, because it indicates the material wealth of the society, which is connected to the opportunities of members of the society to realise their potential, and to strive for happiness, welfare and satisfaction in a way suitable to them. Yet the results of economic development are not automatically transferred to the social sphere. There are countries where economic profits are concentrated in a narrow group or are expended on increasing military strength, for example. In such a case, the welfare of the majority of society's members increases only slowly. Opportunities for the development of one's potential are limited, and the development of the economy may be correspondingly hampered. In other countries, the organisation of society allows for each member to occupy a sufficient share of national wealth.

Investment in human capital improves welfare and creates favourable conditions for more rapid and long-term economic progress. Thus, gross national product does not characterise the total level of social development adequately because the humanitarian aspects of a society are not revealed. A new index - the index of human development - has been invented to overcome the limitations of economic measurements. Since 1990 UNDP has been publishing the World Human Development Reports, in which a common index is used to compare different countries' development. The index was constructed based on the following ideas:

Human development itself cannot be measured, since it is highly complicated and uniquely realised in different societies and in the case of different individuals. The premises for development, which are identifiable and guaranteed by a free society are also impossible to measure in a sufficiently straightforward way. For this reason, the primary factors limiting freedom of choice have been taken into account in the formulation of the human development index.

There are three such factors: health, knowledge (education) and standard of living (wealth, income). Since all three factors can be quantitatively characterised in a number of ways, the methods used in the calculation of the human development index have changed over the past decade. The following indicators are currently used to measure the three factors described above: Health - average life expectancy at the moment of birth; Knowledge - adult literacy and average number of school years; Standard of living - purchasing power of gross domestic product as calculated per individual. The integrated index based on these data is derived by first calculating the interim indices of life expectancy, knowledge and the standard of living. Figuratively speaking, the world states are participating in three races (life expectancy, knowledge and standard of living), where success is measured by distance covered. The starting and finishing points (or rather interim finishing points) were selected so as to place most of the world's

countries between the two points for some time to come. The interim index between 0 and 1 shows how much "distance" one or another country has covered. The human development index is the arithmetical average of the three interim indices.

1.4 The dimensions of international tourism

In concluding this introductory chapter, statistics for international tourism, which is the basis for the empirical analysis in Chapters 5 and 6, is evaluated. Aggregate information on international tourism must be treated with caution, in the absence of a sufficient degree of homogeneity between the various national information-collecting systems. Considering a broad definition of "Travel and Tourism" (T&T, hereafter) the impact of tourism is very large. In terms of employment T&T generates more than 10% of global employment and is one of the largest job generators. Total employment was around 262 million people in 1997 and is expected to grow to 383 million by 2007: this is an increase of 121 million implying 1 new job every 2.4 seconds.⁶

A more conservative approach is that of the World Tourism Organisation. The WTO circulates annual statistics, disaggregated on national levels, concerning both the economic impact of tourism and more conventional statistics (such as international arrivals and departures, international receipts and expenditures).

Data are often obtained from arrivals registered at the border, but may also be secured from registrations in the various accommodation structures. The figures usually do not distinguish between tourists and visitors. However, important progress has been made following the circulation of directives concerning the harmonisation of the methods used for compiling international statistics.

An indication of demand is usually provided by the number of tourists. While deficient in some ways, these data emphasise that strong growth has occurred. The most reliable

⁶ World Travel and Tourism Council (1998). WTTC is a global coalition of around 90 CEOs from all

statistics are those for international tourists, which were 25 million in 1950, to 70 million in 1960, 172 million in 1970, 284 million in 1980 and 600 million in 1997. Growth has not been constant throughout the post war period and can be disaggregated into three distinctive elements. The long-term growth of international tourist arrivals is illustrated in Figure 1.

FIGURE 1

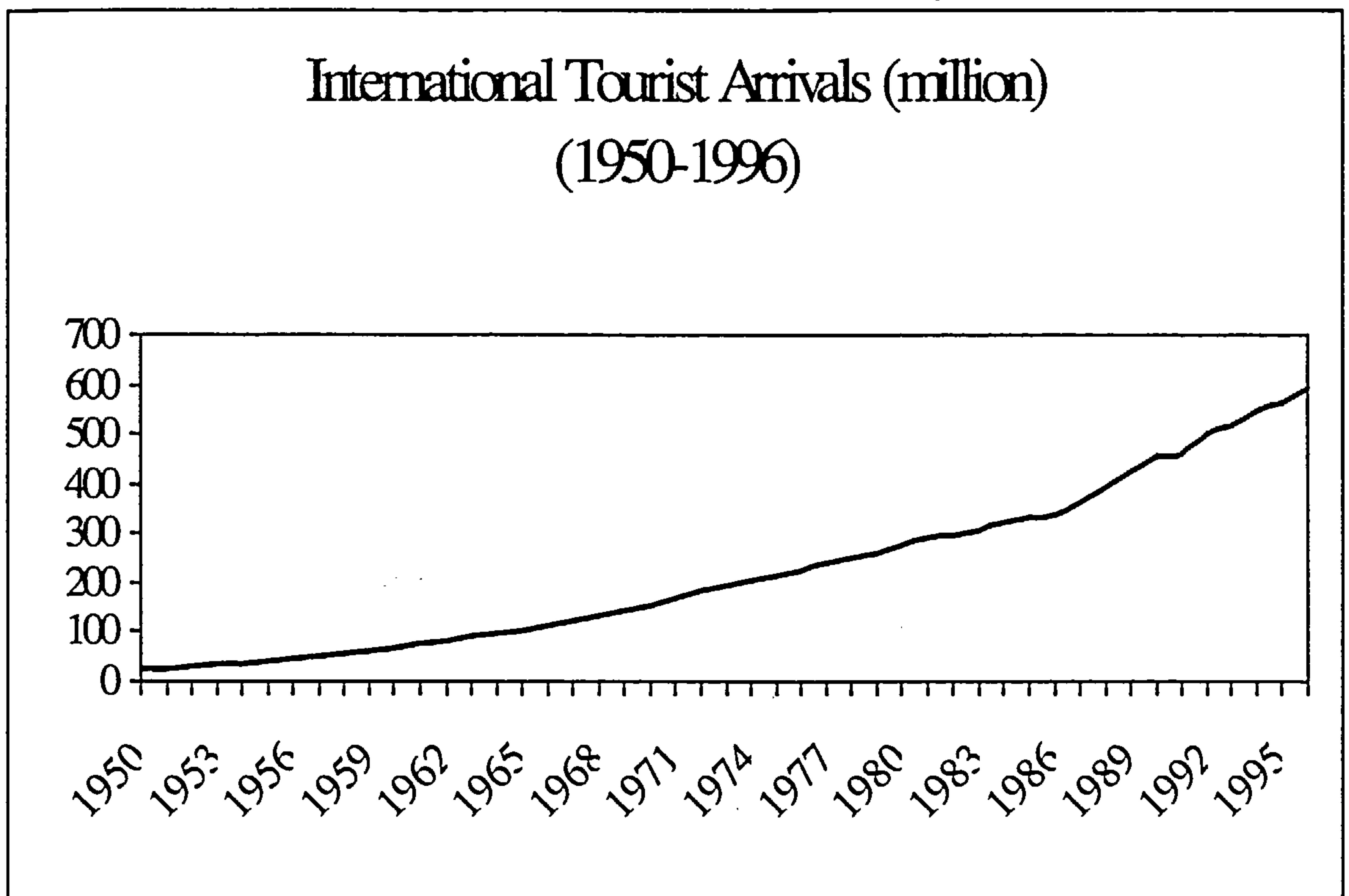


Figure 1 shows that a major expansion of international mass tourism occurred soon after World War II - about 11% per annum from 1950 to 1964, with a subsequent slowdown - about 4.7% per annum from 1965 to 1983, after which there was another expansion.

Cyclical movements average about 6 or 7 years while, as would be expected, events such as oil crises, wars, terrorist activities have a stochastic effects on the series.

sectors of the Travel & Tourism industry.

Not all the world's regions have shared the same growth rates. The relative position of the Americas has declined since 1950, although absolute numbers have risen, while the shares of Australia and, particularly of Asia, have increased sharply, especially following the emergence of the Japanese as an important group of tourists.

TABLE 1

<i>International tourism: arrivals by regions</i>						
<i>Region</i>	<i>1950</i>	<i>1960</i>	<i>1975</i>	<i>1988</i>	<i>1996</i>	
Europe	66	75	69	64	59	
Americas	30	19	22	19	19	
Africa	2	1	2	3	3	
Asia/Pacific	1	3	5	11	17	
Middle East	1	2	2	3	2	
Total	100	100	100	100	100	

However, international movements are dominated by Europe, which is not surprising given the large number of well-off persons and the close proximity of European countries. The share of Europe equalled 75% in 1971, largely a result of the growth of mass tourism in the Mediterranean region, but has subsequently fallen, reflecting the emergence of more "exotic" destinations outside the region.

The next section considers some of the recent features of world tourism in greater detail.

1.4.1 Recent trends of the tourism sector

In 1996 international tourism expanded significantly against an encouraging economic and social background. A climate of rising consumer confidence significantly maintained the level of travel expenditure abroad. Inflation has been brought down and kept low in

most countries, and the broad movements in the exchange rates of the major currencies have ensured sustainable non-inflationary growth, but not without an impact on the respective competitive position of the various tourist destinations around the world.

Globally, in 1996 international tourism arrivals and receipts reached new records with close to 592 million arrivals, an increase of 4.5 per cent over the preceding year, with receipts of 423 US\$ billion, a 7.6 per cent growth over 1995. These figures are paralleled by the 8 per cent rise in the number of air passengers as indicated by the International Civil Aviation Organisation (ICAO).

Little or no slowdown is anticipated in the rate of expansion of international tourism (either on arrivals or real expenditure) over the period to 2010. Two factors will combine to create a steady growth of around 4 per cent per year.

First, the acceleration of multiple, relatively short duration trips on the part of travellers from industrialised countries (i.e., serving to boost total arrivals and receipts because average daily expenditure on shorter trips tends to be higher than on longer visits); and second, the strong increase in foreign travel (particularly holiday taking) by the populations of developing countries.

Long haul and intra-regional travel will also experience sustained strong growth rates. The fastest rates of growth will be achieved by the residents of countries in East Asia and the Pacific, followed by those of the Middle East, South Asia and Africa. Expansion will only be below the global average (and even then only slightly so) for outbound travel from the Americas and Europe.

FIGURE 2

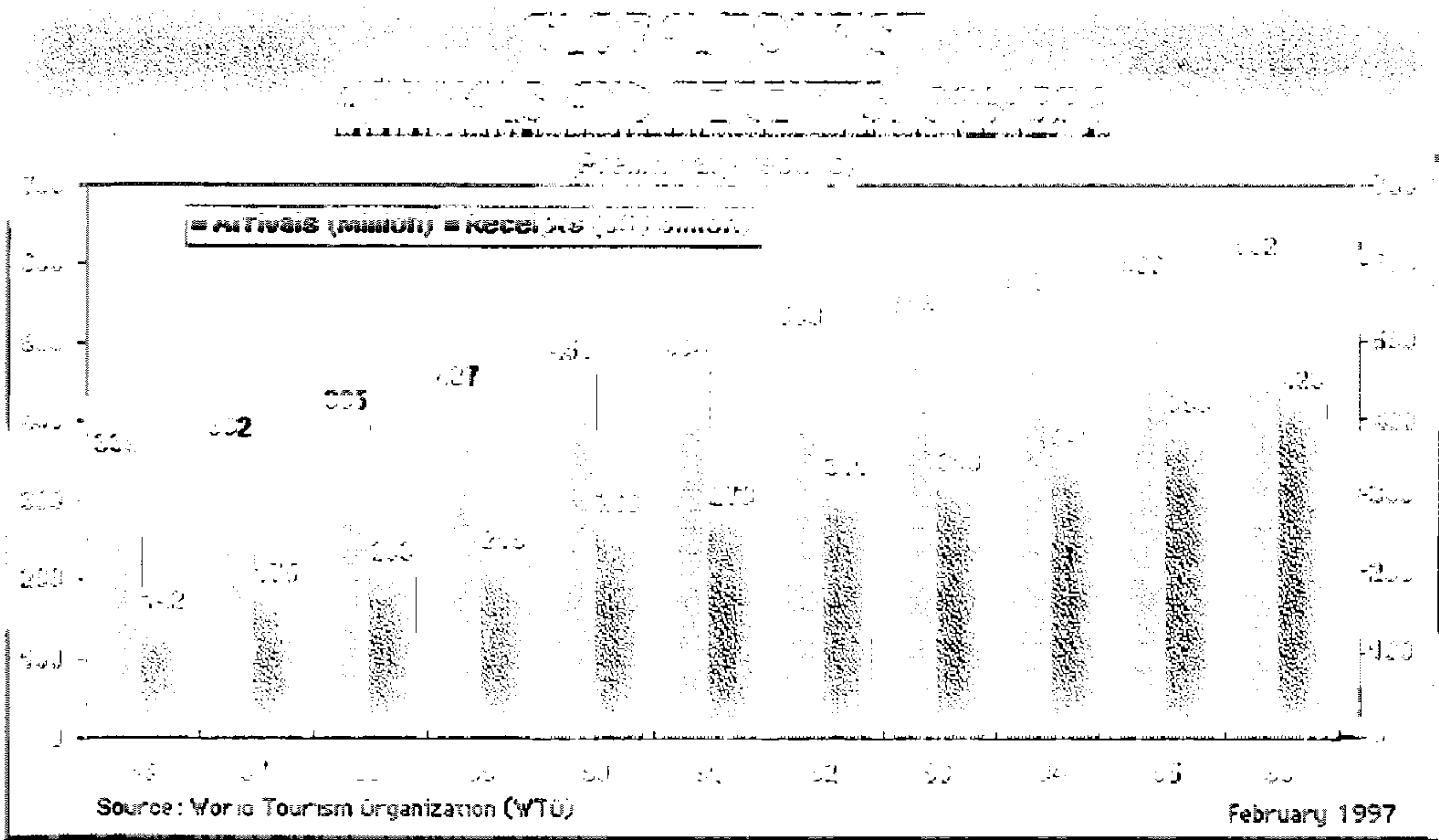
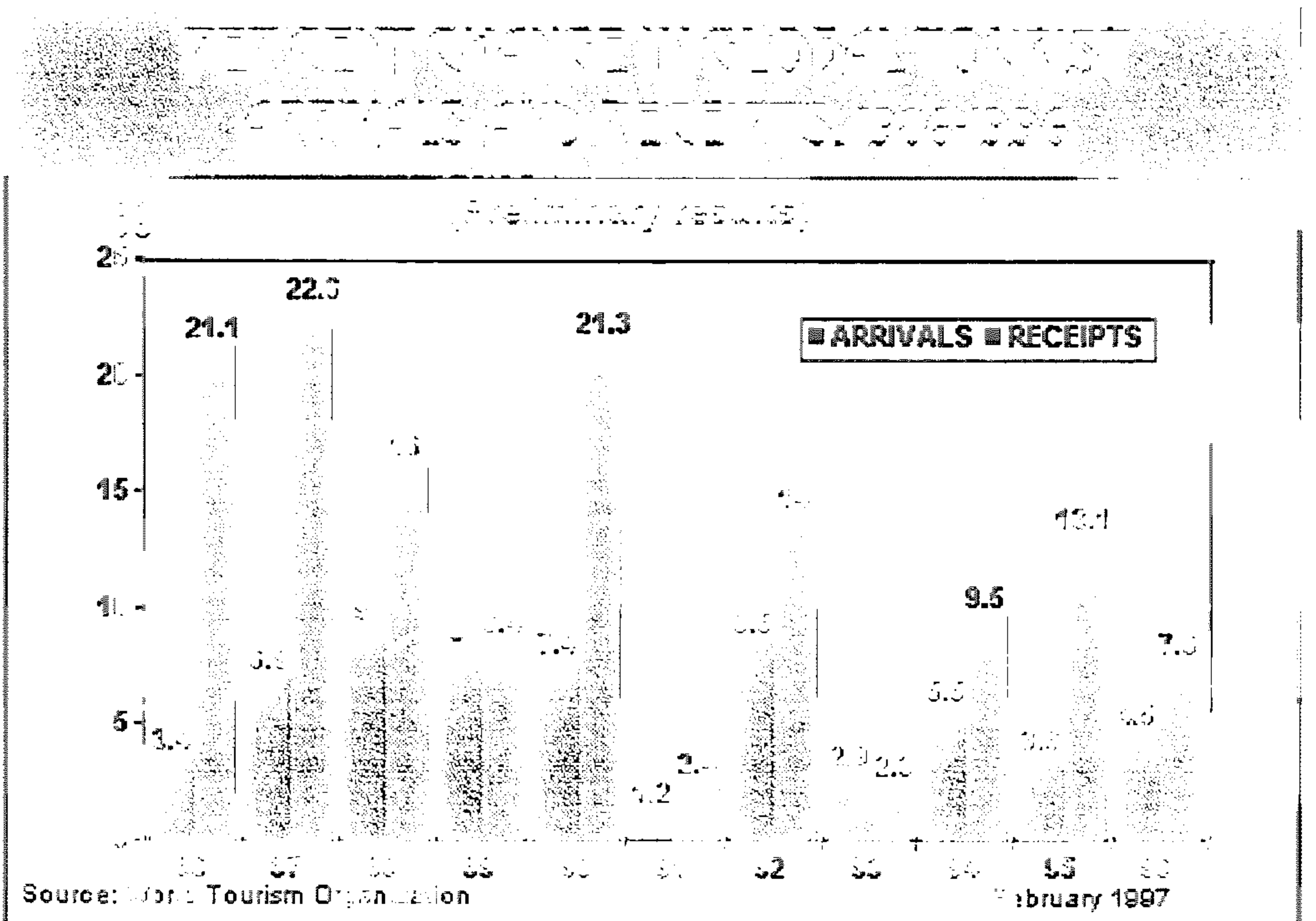


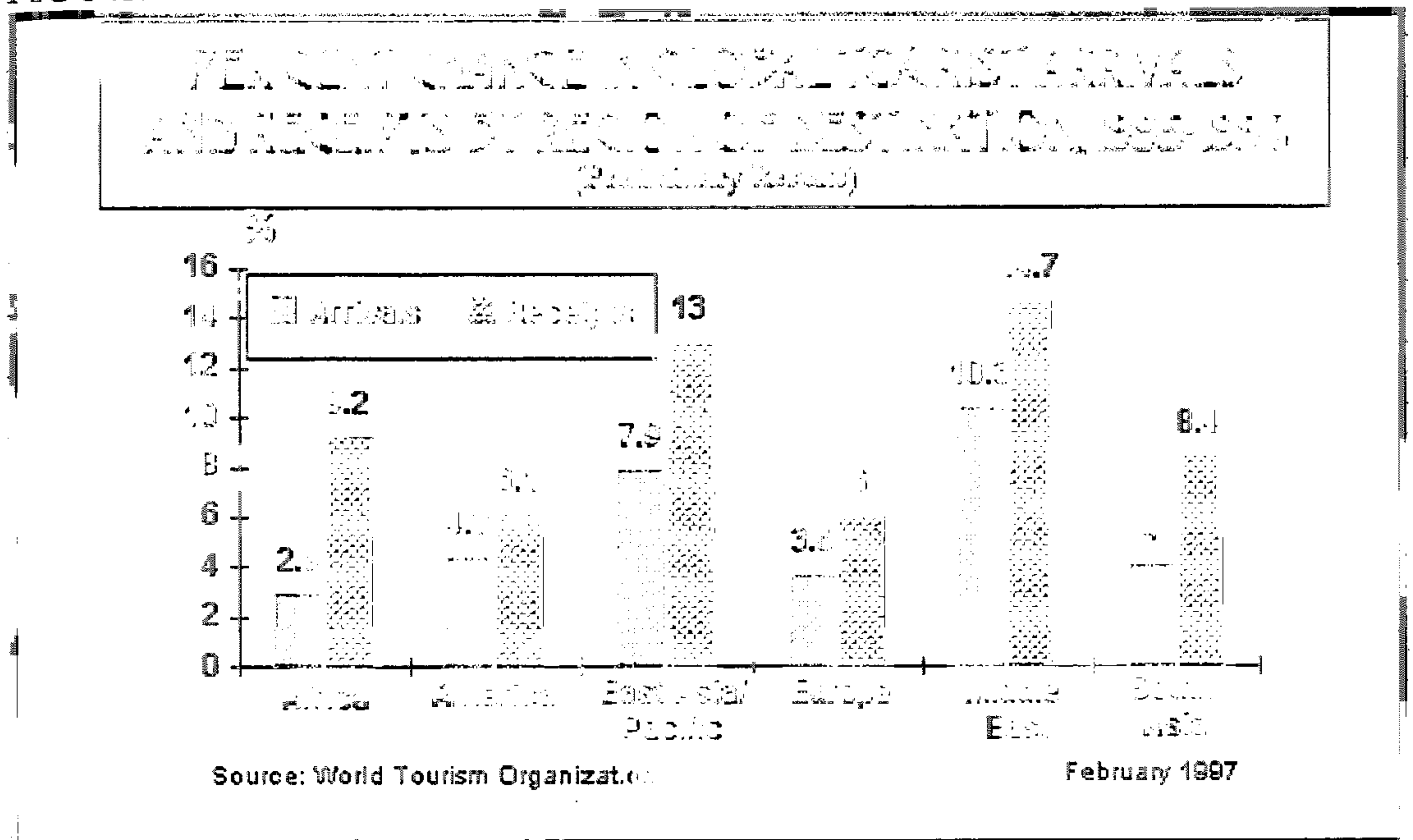
FIGURE 3



Given that 1996 is the latest available year, the regional trends are identified in

Figure 4.

FIGURE 4



The pattern of international tourist flows reveals first and foremost a heavy geographical concentration of tourist arrivals. The ten leading destinations, in fact, account for 53 per cent of the world volume of tourism flows. Moreover, the past five years have witnessed a gradual diversification of tourist markets with the emergence of new destinations, especially in the East Asia and the Pacific region, such as Hong Kong. China joined the top five destinations and Hong Kong moved up five places. The same phenomenon is observed in Central and Eastern Europe where such destinations as Poland and the Czech Republic have all moved up considerably in the world ranking.⁷ The Russian Federation became one of the top twenty destinations. France remained the top destination followed by the United States and Spain.

⁷ However it should be recognised that, particularly for Eastern European countries, destinations can be influenced by odd statistics, such as cross border arrivals when borders are somewhat arbitrary.

TABLE 2
WORLD'S TOP 20 TOURISM DESTINATIONS
Preliminary results

Rank				Country	International Tourist Arrivals (thousands)			% Change 96/95	Market Share % of World Total	
1990	1994	1995	1996		1990	1995	1996		1990	1996
1	1	1	1	FRANCE	52,497	60,110	61,500	2.31	11.46	10.39
2	2	2	2	UNITED STATES	39,363	43,385	44,791	3.24	8.59	7.57
3	3	3	3	SPAIN	34,085	39,324	41,295	5.01	7.44	6.98
4	4	4	4	ITALY	26,679	31,052	35,500	14.32	5.82	6.00
12	6	6	5	CHINA	10,484	23,368	26,055	11.50	2.29	4.40
7	7	5	6	UNITED KINGDOM	18,013	24,008	25,800	7.46	3.93	4.36
8	10	8	7	MEXICO	17,176	20,162	21,732	7.79	3.75	3.67
5	5	7	8	HUNGARY	20,510	20,690	20,670	-0.10	4.48	3.49
28	8	9	9	POLAND	3,400	19,200	19,420	1.15	0.74	3.28
10	12	11	10	CANADA	15,209	16,896	17,345	2.66	3.32	2.93
16	11	12	11	CZECH REPUBLIC	7,278	15,500	17,205	11.00	1.59	2.91
6	9	10	12	AUSTRIA	19,011	17,173	16,641	-3.10	4.15	2.81
9	13	13	13	GERMANY	17,045	14,847	15,070	1.50	3.72	2.55
19	16	15	14	HONG KONG	6,581	10,200	11,700	14.71	1.44	1.98
11	14	14	15	SWITZERLAND	13,200	11,500	11,097	-3.50	2.88	1.87
14	17	17	16	PORTUGAL	8,020	9,706	9,900	2.00	1.75	1.67
13	15	16	17	GREECE	8,873	10,130	9,725	-4.00	1.94	1.64
-	23	18	18	RUSSIAN FED.	-	9,262	9,678	4.49	0.00	1.64
24	22	20	19	TURKEY	4,799	7,083	7,935	12.03	1.05	1.34
15	18	19	20	MALAYSIA	7,446	7,469	7,742	3.66	1.62	1.31
				TOTAL 1-20	329,669	411,065	430,801	4.80	71.94	72.79
				WORLD TOTAL	458,278	566,384	591,864	4.50	100.00	100.00

If countries are classified according to their tourism receipts, the same pattern emerges as for arrivals. The twenty countries with the highest tourism receipts account for a little over 71 per cent of world receipts. The ten leading countries alone represent 48 per cent of the world total. The United States leads the world in tourism receipts. In 1996, Spain overtook France for the first time, moving to second position. The countries in East Asia and the Pacific, in particular China, Australia, Hong Kong, Thailand, Singapore and South Korea experienced above two-digit growth rates in 1996. Japan has resumed growth after three consecutive years of decline. In North America, Mexico is recovering from a lapse in tourism receipts in 1995. Tourism in the countries of Central and Eastern Europe, such as Poland are performing well.

TABLE 3

WORLD'S TOP 20 TOURISM EARNERS

Rank				Country	International Tourism Receipts (US\$ million)			% Change 96/95	Market Share % of World Total	
1990	1994	1995	1996		1990	1995	1996		1990	1996
1	1	1	1	UNITED STATES	43,007	61,137	64,373	5.29	16.16	15.22
4	4	4	2	SPAIN	18,593	25,343	28,428	12.17	6.98	6.72
2	2	2	3	FRANCE	20,185	27,527	28,241	2.59	7.58	6.68
3	3	3	4	ITALY	20,016	27,451	27,349	-0.37	7.52	6.47
5	5	5	5	UNITED KINGDOM	14,940	19,133	20,415	6.70	5.61	4.83
6	6	6	6	AUSTRIA	13,410	14,618	15,095	3.26	5.04	3.57
7	7	7	7	GERMANY	11,471	12,810	13,168	2.79	4.31	3.11
11	9	8	8	HONG KONG	5,032	9,604	11,200	16.62	1.89	2.65
25	10	10	9	CHINA	2,218	8,733	10,500	20.23	0.83	2.48
8	8	9	10	SWITZERLAND	7,411	9,459	9,892	4.58	2.78	2.34
12	12	11	11	SINGAPORE	4,596	8,212	9,410	14.59	1.73	2.22
9	11	12	12	CANADA	6,339	8,012	8,727	8.92	2.38	2.06
13	16	13	13	THAILAND	4,326	7,664	8,600	12.21	1.63	2.03
14	15	14	14	AUSTRALIA	4,088	7,100	8,264	16.39	1.54	1.95
65	14	15	15	POLAND	358	6,400	7,000	9.38	0.13	1.65
10	13	16	16	MEXICO	5,467	6,164	6,898	11.91	2.05	1.63
21	20	21	17	TURKEY	3,225	4,957	6,536	31.85	1.21	1.55
18	24	19	18	KOREA REP.	3,559	5,579	6,315	13.19	1.34	1.49
15	18	18	19	BELGIUM	3,721	5,719	5,893	3.04	1.40	1.39
16	17	17	20	NETHERLANDS	3,636	5,762	5,877	2.00	1.37	1.39
				TOTAL 1-20	195,598	281,384	302,181	7.39	73.48	71.43
				WORLD TOTAL	266,207	393,278	423,022	7.56	100.00	100.00

In terms of market share, Europe continues to maintain its overall dominance as a tourist destination, but has experienced a significant loss of 10.5 percentage points in its share of arrivals since 1975. The Americas remain a distant second in overall share of arrivals with 19.5 per cent of the market in 1996 (a loss of 3 percentage points since 1975). Among those regions which have been increasing their share of world arrivals since 1975, East Asia and the Pacific has made the most significant gains. Since 1975 this region increased its share of arrivals by 11.3 percentage points to 15.2 per cent in 1996. Africa increased its share by 1.2 percentage points to 3.3 per cent in 1996 while

less dramatic gains were achieved by South Asia (from 0.7 per cent in 1975 to 0.8 per cent in 1996) and the Middle East (from 1.6 per cent in 1975 to 2.5 per cent in 1996).

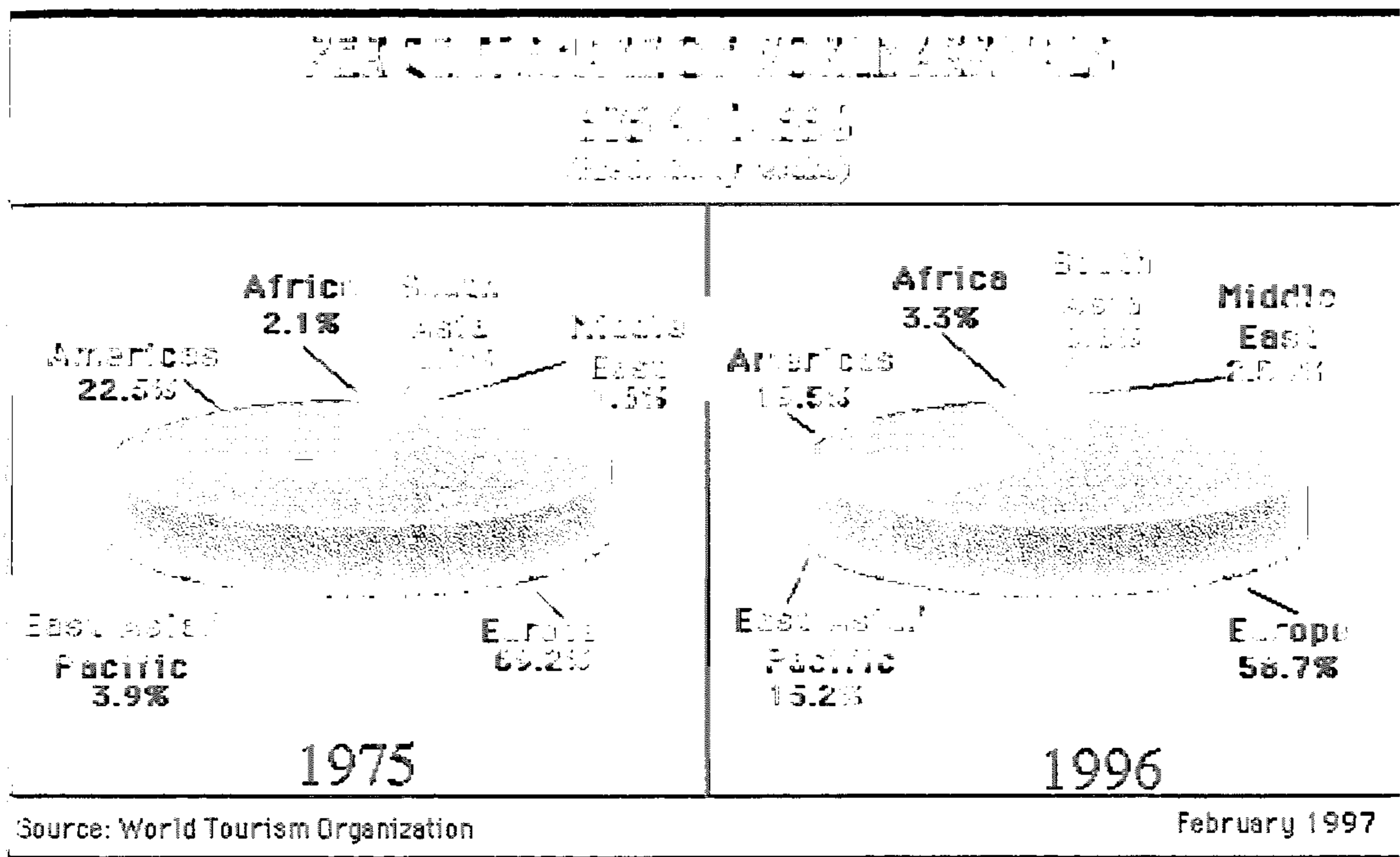
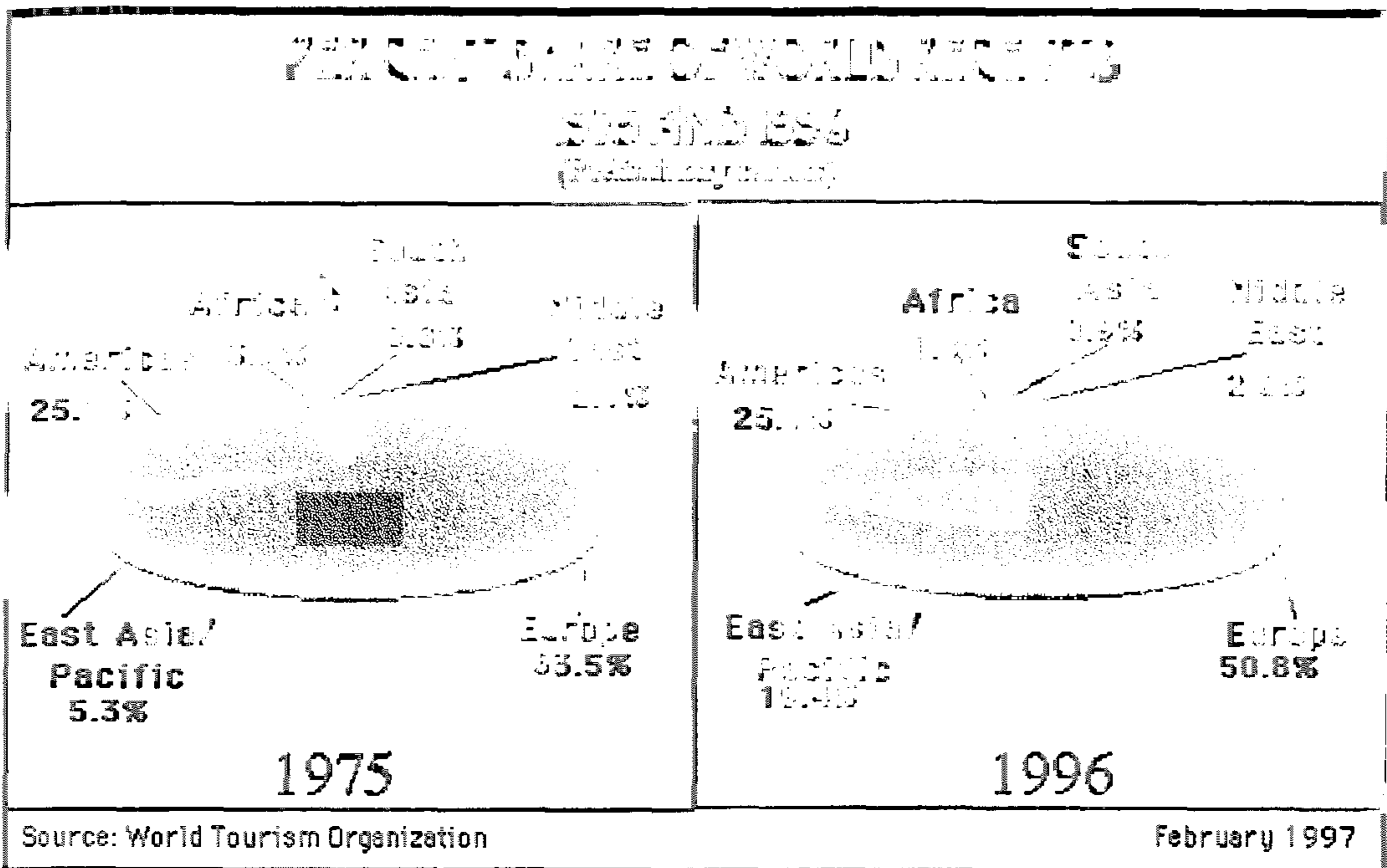


FIGURE 5

From 1975 to 1996, East Asia and the Pacific expanded their share of global tourism receipts significantly by 14.1 percentage points. Europe, Africa and the Middle East lost 12.7, 1.3 and 0.1 percentage points respectively, while the Americas has seen no change in its share of tourism receipts.

FIGURE 6



Concerning tourism receipts, LAIA countries⁸ showed the highest growth rate in arrivals in 1996 compared with other country groupings, whereas CIS countries⁹ recorded the highest growth rate in tourism receipts of more than double the world average.

The distribution of tourism receipts indicates the same pattern as arrivals, with developing countries increasing their share of the world total. Transition countries of Central and Eastern Europe (including the Russian Federation and all former USSR Republics) appear to have witnessed a spectacular growth in tourism receipts, even though the figures on receipts are still incomplete and often calculated on the basis of obsolete methods.

⁸ LAIA or Latin American Integration Association includes Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Uruguay and Venezuela.

⁹ CIS or Commonwealth of Independent States, Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Rep. of Moldavia, Russian Fed., Tajikistan, Turkmenistan, Ukraine, Uzbekistan.

TABLE 4

INTERNATIONAL TOURISM RECEIPTS
IN SELECTED COUNTRY GROUPINGS

(Preliminary Results)

Country groupings	Tourism receipts (US\$ bn)			% Change		Market share % of world total	
	1994	1995	1996	95/94	96/95	1990	1996
World Total	243,207	293,278	323,302	1.56	10.2	100.00	100.00
Industrialized countries	175,815	255,510	269,370	5.49	5.3	71.72	63.79
Developing countries	67,392	117,768	153,932	11.39	10.7	26.46	30.99
Central/East Europe	4,845	19,777	22,175	11.61	21.74	1.52	5.22
OECD	202,279	279,038	297,423	1.38	6.4	75.89	70.31
European Union	121,265	157,697	164,798	4.51	3.24	45.55	33.35
Mediterranean countries	75,514	104,694	112,777	11.77	7.81	28.29	26.42
NAFTA	54,110	75,313	79,998	6.22	6.51	20.57	18.91
ASEAN	14,035	27,511	30,900	12.39	14.36	5.21	7.31
LAMA	11,210	16,948	18,211	7.48	8.44	4.21	4.31
CIS	-	1,710	5,591	18.25	22.75	-	1.32
SADC	1,438	2,548	2,342	11.54	12.12	0.51	0.67
ECOWAS	575	631	678	6.97	2.51	0.22	0.16

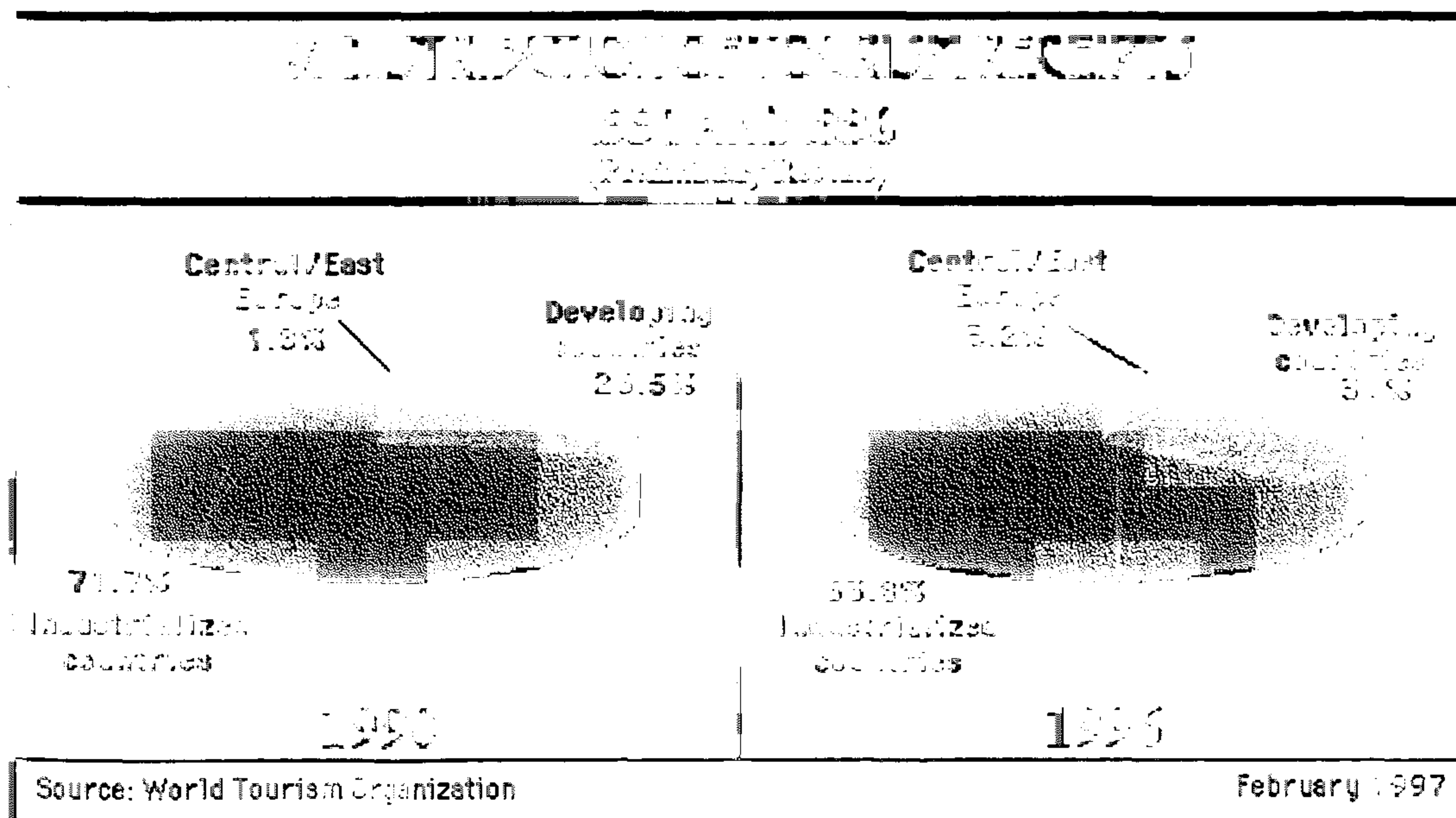
February 1997

Source: WTO

Southern African Development Community (SADC): Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, United Rep. of Tanzania, Zambia, Zimbabwe.

Economic Community of West African States (ECOWAS): Benin, Burkina Faso, Cape Verde, Cote D'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone and Togo.

FIGURE 7



New trends in distribution are possible in the near future as shown in the previous graph.

Chapter two

Macroeconomic aspects of tourism

2.1 Introduction

This chapter examines the contributions made in the literature on the economic impact of tourism, paying particular attention to those studies that have explicitly dealt with the relationship between tourism and economic growth.

Apart from a few exceptions, there seems to be no systematic theoretical investigation, that closely examines the links and the long-term effects of tourism on the economic growth of a country or a region where the principal source, or at least one of the main sources of income, is tourism. In spite of this, the development of the tourist sector in an economy continues to be seen as a guaranteed source of income.

In fact the studies that have addressed the relationship between *tourism* and *economic growth* have very often limited themselves to listing the specific effects (both positive and negative) that tourism has produced.

This chapter should be seen not as an exhaustive summary of economic literature on tourism, but an attempt to present those studies that have examined the tourist industry as an instrument of economic growth. This chapter begins with an analysis of the specific economic effects of tourism, and ends with the identification of some more general forms of study where these effects could be present.

2.2. The economic role of tourism

Before discussing the main economic consequences of developing the tourist sector, it is necessary to make a preliminary distinction. In the majority of cases researchers concentrate on international tourism by, for example, closely examining its effects on the balance of payments, or by applying the tourist expenditure multiplier in order to calculate the impact of tourism on an economy from expenditure originating from abroad.

This “mercantilist” vision of tourism is unsatisfactory, since it is increasingly underestimates the economic importance of tourism as one passes on to more aggregated levels of analysis. There are no comprehensive statistics on domestic tourism but they are considered to account for 90% of total tourism receipts.

When calculating the effects of tourism it is necessary to include both domestic and international figures, even if the importance of the two components is very different. According to Archer (1984), it is necessary to bear in mind the impact of domestic tourism, but this can be assimilated with the impact of general consumption. However, a specific analysis is necessary for international tourism.

Thus it make sense to use international trade theory to analyse the consequences of specialising in the tourist industry in the case of a small economy, since in such a case the majority of tourist expenditure comes from abroad. More precisely, the revenue from international tourism can be considered as coming from a particular type of export, notable for the fact that consumption takes place in the “production area”.

The remainder of this section briefly reviews the particular characteristics of tourism and its effects on the economy as highlighted in the literature.

Without dwelling too long on the usual distinctions between *direct*, *indirect* and *induced effects*¹⁰, attention is nevertheless drawn to some specific aspects. Mathieson and Wall (1982), for example, in summarising the contents of the principal studies that have attempted to isolate the ways in which tourism can contribute to the process of economic development, highlighted the following points:

- 1) the contribution of tourism to revenues derived from foreign exchange and to the balance of payments;
- 2) the creation of income and the creation of employment;
- 3) the nature of infrastructural investments and the consequent creation of an external economy;
- 4) the encouraging of entrepreneurial activity and inter-sectoral connections.

The above list can be extended to include other interesting links, for example:

- a) the wealth of "raw material" (often an uncontaminated environment) which many economies possess;
- b) distance, which no longer presents a problem and in fact often emerges as an attractive feature;
- c) the elasticity of income from the demand for international travel, the growth of this demand can be influenced by other socio-economic factors.

In the subsequent paragraphs, some of the specific economic effects of tourism that according to economic literature are the most important will be analysed, while paragraph 2.3 will be concerned with discussing the points highlighted above.

¹⁰ A definition that explains this tripartition of the economic effects of tourism is, however, necessary since the concept is contained in practically all theoretical contributions or empirical analyses concerned with the impact of tourism on a particular economy:

- a) *direct effects* are those connected to tourist expenditure on goods and services that satisfy their demand;
- b) *indirect effects* are those related to the income from the production of goods and services used as intermediate input in the production of goods and services that satisfy tourist demand; and
- c) *induced effects* are linked to the demand for consumption activated by the income of economic subjects who have contributed (directly or indirectly) to the production of tourist services.

2.2.1. Tourism and the balance of payments

The relationship between the development of the tourist sector and the balance of payments is the one most often discussed in the literature.

The issue is related to the ability of this economic activity to boost the general economy, especially where developing countries are concerned. In this case tourism is regarded as being particularly efficient at solving the problem of current account deficits in countries that receive a large number of visitors.

The ability to earn money from international trade makes it possible to acquire the financial resources necessary for transforming a country based on an agricultural economy into one based on an industrial economy. However, these resources can only be acquired from an increase in exports, which in turn requires a considerable initial investment programme. The role of tourism, however, in international trade is quite different for a number of specific reasons: a) it is not an industry that requires large initial investments; b) the development of tourism, particularly in less developed economies, makes it possible to diversify traditional exports; c) the tourist market is not really protected by virtue of its particular characteristics which involve linking international transactions to the transportation of the buyers rather than to the transportation of "goods"; and d) the fact that it is a continually expanding industry.

In order to be able to argue against such commonly held beliefs concerning the capacity of tourism to resolve the problems connected to international trade, it is necessary to briefly examine the concepts utilised in dealing with the subject of tourism and the balance of payments, and the phenomena that is at the basis of the claims that are made about this subject.

It is only recently that the relationship between tourism and the balance of payment mechanism¹¹ has been closely analysed.

“The conventional method of recording international tourist expenditure is in reality extremely misleading” (Archer, 1984, p.603), since it involves calculating both the income derived from foreign tourist expenditure in the host country (in comparison with exports) and the amount of foreign expenditure borne by the residents of that country (including imports). The difference between the two is usually called the *tourist balance* and is part of the more general current items balance. As H. Gray (1970) observed, this method of reasoning cannot be correct, since it involves linking two things that are almost entirely independent.

In order to understand the limitations of the conventional method of analysis as an indicator of the importance of tourism to the balance of payments, it is necessary to divide the effects of tourism on the balance of payments into *primary effects*, *secondary effects* and *tertiary effects*.

Primary effects are those that give rise to the direct inflow and outflow of money. These are often the only effects calculated in an analysis of the tourist sector of a particular nation, since it is relatively easy to calculate them. Secondary effects are those caused by the diffusion of tourist expenditure into the economy. These, referring back to the tripartition generally used in examining the general economic impact of tourism¹², can be further divided into *direct secondary effects*, when dealing with payments made abroad by direct suppliers of tourist services in order to satisfy or promote tourist demand (for example, the importation of certain types of foodstuff or the cost of advertising abroad), *indirect secondary effects*, which are those that result from the production of intermediary goods and services used by companies directly involved in tourism (an

¹¹ A country's balance of payments represents the figures relating to the economic transactions between the residents of that country and the rest of the world, over a specified period of time (usually a year).

¹² The economic impact can be partitioned into direct, indirect and induced effects.

example being the goods imported by a company which prepares passenger meals for airlines), and *induced secondary effects*, represented by revenue from production in sectors that are either directly or indirectly interested in initial tourist spending (such as the acquisition by people involved in the tourist sector of durable consumer goods produced abroad, or the money sent home by foreign workers employed in the tourist sector).

Finally, tertiary effects constitute expenditures that do not come directly from tourism.

An example of this is the money spent in the originating country for a future trip abroad or the opportunities for investment offered by the development of tourism in certain places or regions.

The aggregate of these effects on the balance of payments can be summarised in just two components (Mathieson and Wall, 1982, p. 54.): 1) *the effects of money spent abroad on tourism by residents*, and 2) *the effects of tourism that takes place inside a country*, for tourism that is intended to satisfy both the demand of foreign and domestic visitors (and the net financial importance of tourism can only be totally evaluated by including the effects of the domestic tourism).¹³ Thus, the flow of money, both debits and credits, attributable to tourists who spend their holidays abroad, represents only a part of all international transactions concerned with tourism. The flow of funds arising from the transfer of capital, products, services and foreign labour necessary to satisfy the needs of foreign visitors is also an important component of the tourist balance.

The following three factors are particularly important in determining the effects of expenditure on tourism: *the tendency of the tourist industry in the recipient country to import goods; the use of foreign labour in tourism; and the importance of foreign capital for investing in the tourist sector.*

¹³ Neglecting the effects of domestic tourism can result in a badly distorted analysis of the net contribution of the tourist sector to the balance of payments in those countries where the large majority of residents spend their holidays in their own country.

The tendency to import can be measured by the part of each unit of tourist expenditure that is transferred outside the tourist area to buy goods and services. Clearly the higher this figure is, the lower the contribution of net income will be. The proportion of imports depends on the level of development of the area or country in question (developed economies find it easier to supply the required quantity and quality of goods and services necessary for satisfying tourist demand), and on the size of the country itself (very small countries tend to be less diversified than larger countries and therefore they are more likely to use international markets).

The necessity of having to use foreign labour is another factor that influences the final destination of income from international tourism. In many developing countries the proportion of foreign labour employed in business activities linked to tourism is very high, particularly in the specialist sectors. The proportion of foreign labour depends on the type of tourism that exists and the class of visitors (Pearce, 1989, p. 198), and in particular is higher for tourism linked to high quality hotels, which require a high level of specialised personnel who are usually recruited abroad with the prospect of attractive earnings. Naturally, situations like this, which are a problem for backward economies, are very positive for developed countries, which with a higher average level of professional training can legitimately expect a higher level of income.

As for the investment of foreign capital, it is often the case that the infrastructure and basic services necessary to start a tourist activity are financed with foreign capital, especially in developing countries, and that a large proportion of the income deriving from such investments (in the form of profit and interest) often ends up going to other countries.

In conclusion, the relationship between tourism and the balance of payments is quite complicated. In addition, it is rather difficult to make an accurate estimation of only the direct and indirect secondary effects.

Despite these difficulties, R. Baretje (1982, 1984) maintains that creating a “foreign account for tourism” is not a question of estimation but of *accountancy*. He believes that it is possible to enumerate (and within certain limits, evaluate) the active and negative situations that go towards determining the net income attributable to international tourism (Baretje, 1984, pp. 657-59). This operation can be carried out by any country that possesses the minimum statistical facilities, and it must constitute the corner stone without which it is impossible to come to a serious decision about the effective impact of tourism on the general economic system (Baretje, 1984, p. 668).

Along these lines the Tourism Committee’s Statistical Working Party of the OECD has been working for some years to apply the System of National Accounts (SNA) to understand the economic importance of the tourism sector, mainly in monetary terms. The SNA is the only available framework for a coherent analysis of the economic contribution of tourism bringing together goods, supply and production and setting them against activities and final users. A Manual on Tourism Economic Accounts was adopted in 1991.

2.2.2. Tourism and the creation of income

The creation of income and the creation of employment are among the most important effects of a particular economic activity. To determine the amount of income created from tourist activity, an initial rough approach could be to estimate the difference between visitors’ expenditure and expenditure on goods and services by the tourist sector to the gross national product (or to the income of the region being studied). In this way it would be possible to calculate the importance of tourism to the economy, although such a calculation would not include the eventual drain of resources from other economic sectors. Consequently it would not be possible to judge the importance of the tourist industry for the economy.

To evaluate the capacity of the tourist sector to *activate income* (and to compare in quantitative terms the economic effects of the tourist sector with that of other sectors), the use of the “tourist income multiplier” is widespread in studies concerning the economic impact of tourism. *The tourist multiplier is the number which is multiplied by initial tourist expenditure in order to discover its general effect on the income of a particular geographical region, within a strictly defined period of time.*

Tourism expenditures must be multiplied by a coefficient, since it is necessary not only to include total expenditure in the tourist sector but also to include the direct, indirect and induced effects. This classification is referred to by B. Archer, who has made substantial contributions towards defining and using tourist multipliers¹⁴. Archer defines the income multiplier as *the relationship between the direct (also called primary effects), indirect and induced effects (together called secondary effects) of a change in an economy and the initial direct change itself* (Archer, 1976, p. 115, in Mathieson and Wall, p. 65).

In order to understand tourism’s potential as an instrument of economic development, it is necessary to identify the value of the tourist income multiplier. The size of the multiplier is linked to the relationship between the economic area under consideration and external economic sectors, especially those sectors that have strong links with tourism.

A critical analysis of multipliers and their use in economic studies on tourism is beyond the scope of this thesis.¹⁵

How does the tourist sector compare with other economic sectors in terms of income creation? According to D. Pearce (1989, pp. 210-211), the studies carried out on the subject of income creation do not show tourist multipliers as having any particular

¹⁴ See Archer (1976, 1977) in particular.

¹⁵ For a detailed explanation of Archer’s concept of the tourist multiplier, plus a review of its various uses and formulations adopted in economic literature and of the differences between income multipliers, sales and transaction multipliers and output multipliers¹⁵, and, finally, for an analysis of some limits in the use of various types of multipliers see Archer (1977).

superiority, since tourism is an activity that has relatively weak links with the other economic sectors. This statement, however, is debatable, given that there are very few economic activities that seem to have as many links to the rest of the economy as tourism does.

In the studies quoted by Mathieson and Wall (1982, p. 75), the destinations for direct tourist expenditure and the principal economic sectors involved with this expenditure are divided into four main categories: *food, accommodation, transport* and "*other purchases*". The first two represent more than 50% of the total in empirical analyses. When talking about indirect and induced effects, the largest benefits are accrued by property owners, owners of rented property and the retail trade. In general the principal beneficiaries of tourist spending and its secondary effects are the service industries. In a study by W. Antony of internal travel in the USA¹⁶, the five most important beneficiaries were tertiary industries¹⁷, which received almost 65% of total expenditure, while some benefits went to the construction sector and very few went to the agriculture and manufacturing sectors.

The traditional instrument used by economists to evaluate the impact of tourism on the economy of a region is input-output (I-O) analysis.¹⁸ The assumptions, advantages and limitations underlying the use of I-O models are well known and documented. In the last few years newly developed instruments have been largely used in tourism analysis: SAM (Social Accounting Matrix) and, more recently, application of the CGE (Computable General Equilibrium) models. A SAM has three advantages with respect to traditional I-O. First, it describes the structure of an economy in terms of the links between production, income distribution, and demand within a region's economy.

¹⁶ Referred to by Mathieson and Wall (1982, p. 75).

¹⁷ These beneficiaries were the retail trade, airlines, accommodation services, the entertainment industry and the car and car repair industry (ibid.).

¹⁸ A non exhaustive lists of studies that use I-O models: Bergstrom, J.C.H.K. Cordell, G.A. Ashley and A.E.Watson (1990), English, D.B.J.M. Bower, J.Bergstrom and H.K. Cordell (1995, Fletcher, J.E. (1989), Heng, T.M., And L.Low (1990), Khan, H.C.F. Seng and W.K. Cheong (1990), Loomis, J.B. (1995), , Propst, D., ed. (1985)

Second, regional economic data are often collected by different agencies and stored in different formats. A SAM could provide a concise framework for synthesising and displaying the economic data on a specific economy. Third, it allows for a calculation of regional economic multipliers given the existing structure of the economy. While an I-O model can provide similar results as a SAM, the latter is more thorough methodologically. In fact, I-O models are a subset of SAM models. The SAM is designed to capture, in addition to product flows, the income and the expenditure flows of the economic actors over a specified accounting period. The SAM is also a primary data requirement for the CGE models. CGEs were developed in the early 1960s to solve for both market prices and quantities simultaneously, thus simulating a competitive market economy. There are some papers on tourism impact elaborated using CGE techniques.¹⁹

2.2.3. Tourism and employment

While tourism's potential for creating income does not appear to be as great as for other production sectors, the tourism industry does appear capable of creating a relatively large number of jobs. This is because the tourist industry produces services, and can thus be included in the *labour intensive* sector. Consequently one of the main impacts of the development of tourism is employment creation (Pearce, 1989, p. 199). This additional employment is due to the direct, indirect and induced effects of tourism on the economy, and as such it can be divided into direct (primary), indirect and induced (secondary) employment. In the case of regional development, employment creation is primarily of the direct type, providing only the tourists' destination resort is considered. Mathieson and Wall (1982, pp. 78-79) refer to the study carried out by B. Archer about

A good survey could be found in Briassoullis H. (1991),. See also Johnson R, L., and E. Moore.
¹⁹ D. Zhou, J. Yanagida, U. Chakravorty, P. Leung (1996)

the tourist industry in Anglesey (North Wales), where he calculated that nine out of ten jobs linked to tourist development were created as a result of the primary economic effects of tourism²⁰. In the same study it was shown that while the capacity of a given amount of tourist expenditure to generate income was more or less equal to the capacity of an equivalent amount of general expenditure, the capacity to create employment was approximately double (4.83 jobs for every £10,000 spent on tourism at 1970 prices, against 2.39 jobs for a similar figure for general expenditure). Other studies have substantially confirmed Archer's findings²¹.

On the other hand, if one looks at the overall impact on employment in the economy as a whole, the indirect effects are particularly important. In most OECD countries tourism is among the major sources of employment. On the basis of data provided by Member countries, tourism's share of employment exceeds 5% in ten OECD countries, including major countries such as the USA (5.1%), Germany (6.5%) and Canada (9.6%). In certain traditional tourist countries the share exceeds 8% (Austria, 13.8%, Greece 10% and Switzerland 8.1%).²² In most cases these figures include the direct and indirect effects of tourism on employment. The World Travel and Tourism Organisation (WTTC), which represents the tourism's interests internationally, estimates the shares of tourism in direct and indirect employment in OECD regions to be 9.1% of total employment in 1997.²³

"Creating" jobs by developing the tourist industry is definitely "convenient" (Pearce, 1989, p. 200), particularly given that in the majority of studies on the subject it has been shown that the cost of employing someone in an economic activity connected to tourism is much lower than the average cost of labour²⁴. The cost/employment ratio

²⁰ Mathieson and Wall (1982, p. 78).

²¹ Mathieson and Wall (1982, p. 79).

²² OECD (1995)

²³ WTTC / WEFA (1998)

²⁴ In truth some results go against this tendency, in particular those relating to Mexico and West Germany, as cited in Mathieson and Wall (1982) and Pearce (1989).

can also be relatively low when large investments are required, such as in the construction of large luxury hotels. In fact specialisation in the accommodation sector, and particularly in luxury accommodation, would seem to guarantee a greater intensity of work opportunities.

An example of this can be seen in the data relating to Portugal presented by Lewis and Williams (1988, pp. 114-17). In 1984 the ratio between jobs and the number of hotel beds was on average 0.38. This ratio was 0.64 for *5 star* hotels and 0.39 for *4 star*, 0.30 for *3 star*, 0.21 for *2 star* and 0.15 for *1 star* hotels. In less developed countries, however, there is a lack of domestic qualified personnel that the high quality tourist services usually require (see paragraph 2.2.1). For tourist areas in developed countries, the fact that job creation depends on the accumulation level, can be seen as a clear invitation to provide such educational and professional training programmes as are necessary for the different sectors of the tourist industry.

The tourist employment market is becoming increasingly segmented. On the one hand there is an emerging "primary" employment market, characterised by permanent positions that are often filled by people with a high level of professionalism. These people are found in both the traditional sector of accommodation and in the emerging sectors, such as the production and distribution of tours (although these are generally organised in the visitors' country of origin), as well as in governmental and private institutions that in some way are concerned with tourism, for example those involved in improving qualitative standards or promoting commercial advertising. The training of these people is evidently connected to the rationalisation and modernising processes that are taking place in international tourism.

On the other hand there is a residual or "secondary" market, which is where the image that generally characterises employment in this sector is derived. Here the majority of jobs on offer are for people with a minimum level of qualifications, and the work is

usually of a seasonal or part-time nature²⁵. However, this secondary market may actually be beneficial since the precariousness of the employment situation and the often below-average wage levels (in some cases with the exception of the hotel sector) are balanced by the fact that this type of employment market has proved itself to be ideal for absorbing some of the workforce, for example unqualified personnel, who find it hardest to get work in the manufacturing sector. The other data that usually emerges from studies of the employment effects of tourism, particularly in developing countries, concerns the widespread use of foreign labour. Here the benefits are more questionable for the economy.

The discussion here is concerned almost exclusively with “direct” employment in the tourist industry, where the difference between direct and total employment is more marked than in the overall employment market.

2.3 Tourism as a factor of economic growth

The analysis of the main economic effects of tourism highlights the ways in which tourism can benefit a particular economy. A similar analysis on other export-oriented sectors would most likely yield the same results, i.e., that the positive effects of expansion in the sector outweigh the negative ones.

In other words, this method of analysis does not explain why tourism necessarily benefits economic development, since the only argument presented so far concerns the relative cost effectiveness of tourism, in comparison with other export-oriented sectors (particularly the industrial sector), as a means of earning the money necessary for financing an economy’s basic investments. The limitations of the analysis so far have been discussed in the majority of studies; as Pearce (1989) observes critically: “impacts that are not inserted in a larger development context, which is nevertheless defined...In

²⁵ In Greece approximately half of the people employed in tourism work for only part of the year (Papadopoulos and Mirva, referred to by Pearce, 1989).

addition to this, these impacts are often separated from the processes that created them”.

There is, however, a need to identify those particular characteristics of the tourist phenomenon in order to investigate, from a general perspective, the relationship between tourism and economic growth. Some of the points highlighted in paragraph 2.2 could serve as useful starting point since using these it is possible to divide this analysis between the *demand side* and the *supply side* of the tourist market.

2.3.1. Characteristics of the tourist demand side.

Point (c) in paragraph 2.2. indicated that tourist demand is continually growing, just as the income in industrialised countries and in some developing countries is continuing to grow. This increase in income generally corresponds to socio-economic transformations²⁶, which in turn leads to an increase in “tourist willingness”²⁷ and in the amount of income spent on leisure and tourism. This change in individual behaviour and preferences can be translated into an elasticity in the income of tourist demand greater than 1, which characterises tourism as a luxury good. The factors that determine tourist demand include, but are not exclusively, tourism related.

Other factors that are usually associated with an increase in national income are equally important in determining the growth in national and international tourism. Examples of these are *the switch that the majority of the workforce has made from the agricultural sector to industrial and tertiary sectors, the gradual establishment of paid holidays for the majority of the working population and the continual increase in free time* as a result of a decrease in the number of

²⁶ Sometimes it is said, rather simplistically, that the development of mass tourism depends on an increase in family incomes. In reality it would seem more correct to attribute this development to the process of cultural transformation known as “modernisation”, that involves the disappearance of the pre-industrial archaic culture, distinguished by stability, in favour of a new industrial social culture in which change represents a central process, and where the availability and enjoyment of free time is important and represents a need of the society.

²⁷ The expression “*tourist propension*”, or the equivalent “*departure rate*”, indicates the ratio between the number of tourists and the number of residents in a reference geographical unit.

working hours and an increase in the average life span, as well as the way in which this free time is available throughout the entire year. Given the effect that these additional factors have on tourist demand may explain why despite the high level of income elasticity very often associated with tourist demand during periods of economic recession tourist demand has been observed to be largely unaffected, as was the case in the 1970's.

The potential for the tourist industry to serve as an instrument of economic growth probably derives mainly from the fact that tourism satisfies a part of the international demand for goods and services that is destined to continue to grow in relative importance (given that the long term rate of variation in world income, or at least in those countries where the majority of tourists come from, will be greater than zero). Given the rate of increase in world population, an increase in tourist demand that is less than proportional to the increase in personal income might also be capable of maintaining the share of tourism demand in economies that specialise in tourism, since this is that side of the offer that is characterised by particular fixed elements even in the long term (at least for that form of tourism based on *Ricardian-type attractions*, according to the classification proposed by Tisdell, 1991).²⁸

Before investigating the income elasticity of tourism demand, a clear definition of "tourist demand" will be presented. In those empirical analyses that have attempted to estimate elasticities (i.e. prices, income, or a combination of both), demand has often been represented by either "tourist expenditure" (estimated on the basis of a basket of goods that are often different or on the basis of active assets in the tourist balance), by the number of stays or the number of arrivals or by tourist propension.

²⁸ C. Tisdell uses Hufbauer and Chilas's classification of commercial goods for dividing tourist attractions into two groups: *Heckscher-Ohlin tourist attractions* are attractions created by man, and their supply depends on the amount of work and capital; *Ricardian type tourist attractions* are unique and cannot be reproduced (they are characterised by the fact that they are essentially fixed, which makes them potential sources of income and surplus). In the words of Ricardo, they are "natural gifts", and as such they include natural tourist resources, ruins of past civilisations and also some minor popular cultures.

The fact that there is no clear consensus on what constitutes tourism demand makes it very difficult to compare different situations or periods based on the results obtained in different studies.

G. I. Crouch and R. N. Shaw (1992), when examining the estimates of income elasticity contained in the main empirical studies on international tourist demand carried out over the last thirty years, noted that of the 777 available estimates of elasticity approximately 63% had values above 1, 32% had values between 0 and 1 and the remaining 5% had negative values. Therefore, the claim that international travel is a luxury item was partially confirmed.

Crouch and R. N. Shaw results, however, may not be relevant to this thesis. In the first place a tourist product should not be thought of as a “homogeneous good”. It is more likely that vertical differentiation exists just as in other markets, and that while some types of holidays or some international destinations are *necessities* (in a market such as the international tourist one dominated by high-income countries characterised by a high number of departures, which leads to the conclusion that nowadays the holiday has become something that cannot be given up), other forms and other holiday resorts (characterised by a higher standard of quality and higher costs), can effectively be classified as *luxuries*. Put more simply, it has probably become a *necessity* to at least “go on holiday”, while available income is probably more relevant in deciding “the length of the holiday”. For this reason those studies that use the number of arrivals instead of the number of tourists as a substitute for tourist demand could well be systematically underestimating the value of income flexibility²⁹. It is also necessary to bear in mind another change in tourism that has been taking place over the last few years, which is that people appear to take a number of short holidays in the same year instead of one long one.

In the second place, the definition of tourism (used here in the restrictive sense to mean the activity of consumption) as either a luxury good or normal good can depend on the level of income in the countries where the tourists come from, to which the level of maturity of the tourist industry is linked. Like other “non-essential” consumption, tourism requires that consumers have a minimum level of income. Once this level has been exceeded, consumption increases with ever increasing rapidity, and it becomes more popular with a growing number of consumers. In this phase the elasticity of income typically assumes a value greater than 1. However, above certain levels of income the increase in demand tends to slow down, since this new form of consumption already interests the majority of consumers. Above this income level, the law of decreasing marginal utility begins to prevail. Tourism then becomes a normal good whose demand demonstrates a very low elasticity of income and prices. There is some evidence that Italy, a country that for most areas has a level of tourist propension close to the average level for the EU countries³⁰, has reached decreasing marginal returns with respect to internal tourist demand. International tourism (which is typically more expensive) still seems to be a luxury good.

This evolution on the demand side can often lead to modifications on the offer side, consisting of a deterioration in the *quality* of the tourist product (particularly if it is excessively exploited), which in turn may lead to decreases in demand for increasing levels of income, when the quality of tourist goods is assumed to affect the consumer’s decision to use these goods.

In this “maturity” phase, the importance of quality³¹ as a segmentation element in the tourist market can be seen by looking at how which variable is used to represent tourist

²⁹ One of G. I. Crouch’s main sources (with 120 estimates of the elasticity of income) was a study on tourism in the Mediterranean that used tourist arrivals as a dependent variable (Anastasopoulos, 1984).

³⁰ In 1986 the average departure rate in the Community level was equal to 55% (Pearce, 1989).

³¹ The importance of quality in the maturity phase clearly separates tourism from the rules on the theory of a product’s life-cycle (which envisages an *introduction*, a *growth* and a *maturity* phase),

demand assumes particular importance. While in the first phases of the diffusion of tourist consumption, analysing tourist demand by referring to either the *number of stays* or to *tourist expenditure* in a particular area could produce more or less similar results (since as a result of the low income and low level of mobility of the population, the main choice consumers are faced with is whether or not they can go on holiday), in the maturity phase assuming that the effects would be similar is often very incorrect. Holidays have already become a “necessity” for a large part of the population so that the data relating to stays is hardly influenced by variations in income. However, this is not the case with tourist expenditure since variations in income tend to influence not so much the taking of holidays, as the way in which they are taken and the type of tourist product chosen. Confirmation of this can be seen in the results of a study carried out by L. Malacarni (1991)³², where an estimate of the role of the internal demand of tourist stays produced an elasticity of income equal to 0.92 (which indicates that holidays taken by residents in their own country are a necessity). If this estimate is based on Italian tourist expenditure, the coefficient obtained is equal to 1.80, implying that tourism expenditure on recreation, is a luxury item. This result indicates that there has been a change from quantity to quality (given that on average higher prices mean higher standards of quality) in the preferences of Italian tourists.

Using an Engel curve, the overall evolution of tourist demand described above assumes the characteristic shape of a logistic function. This result is important and is the basis of one of the most important and most discussed theories given to the general

according to which when market growth tends to slow down the best strategy is to contain prices See the next paragraph, 2.4.1., for an application of the product life-cycle model to tourism.

³² The study uses a double logarithmic linear econometric model, which makes it possible to obtain correct estimates of the elasticity of prices but not of the elasticity of income (this point is examined in some detail in chapter five), since this model implies an homotetic condition. Subsequently the study uses a “delay distributed on income model”, where the elasticity of income is equal to the sum of the elasticity of income calculated in time t , $t-1$ and $t-2$. This procedure probably influences the precision of the estimate, but the difference between elasticity of stays and elasticity of expenditure appears to be significant.

interpretation of the economic impact and evolution of the phenomenon of tourism: namely, the application of the product-cycle theory to tourism.

2.3.2. Characteristics of the supply side

When analysing the development potential of an industry, it is not sufficient to concentrate exclusively on the dynamics of demand. It is also necessary to take into consideration the real possibilities the industry has of setting up and successfully carrying out the enterprise. This is particularly true when considering regions or countries that are not very developed economically or where the range of investment choice is more easily limited by the lack of available physical and human capital. Thus, an analysis of the tourist industry must include identifying those general characteristics and those specific prerequisites that make tourism a more practical and profitable option, particularly for developing economies.

The availability of natural resources suitable for attracting international tourism is a fundamental prerequisite for the development of tourism in any specific geographical region. The fact that world tourism traditionally tends to move along the fundamental “centre-periphery” guideline, that extends from industrial cities to less urbanised areas, demonstrates that tourists have a preference for the latter. In fact it is those regions that combine their marginality to population centres with their economic marginality that potentially have a “comparative advantage” (since they are blessed with a good climate and attractive natural surroundings, or at least surroundings that are very different from those typical of urban-industrial civilisations) in producing and offering the type of tourism that is the most popular with mass international tourism, i.e., the “*sea and sunshine*” holiday³³.

³³ According to a famous classification by Gray (1970, p. 13), international tourism is essentially *sunlust* and *wanderlust*. The first of these expresses the possibility of enjoying attractions that are not available in the place of origin, above all a better climate, while the second is concerned with the

The term “comparative advantage” comes back to the theory of international commerce and from the definition of natural wealth as a “Ricardian type” resource contained in C. Tisdell’s previously mentioned classification. In this sense, some economies have an advantage in producing a certain type of tourism simply because they *exclusively* possess factors that cannot be reproduced and cannot be the object of transactions (in every sense of “nature’s gifts”). This advantage continues to exist independently of the validity of the hypothesis that there is a single international production function of the tourist product, as referred to in the Heckscher-Ohlin model.

While the possibility of exploiting natural resources is an ever-present characteristic of international tourism (the fundamental guideline for tourism), the *distance* factor is gradually changing its traditional role as an obstacle to the growth of tourism in some countries. The obstacle of high costs, and previously the cost of transport in particular has for a long time limited the development of tourism in some regions that geographically are too peripheral, even when they are have important natural or artistic features. The advantage has been to those regions that are nearer to the principal areas where the majority of tourists come from, such as the high-income countries of North America and western Europe. The development of road and air links has gradually ameliorated the negative effects of the distance factor, heavily reducing the consequences of transport costs³⁴ and the time necessary to reach destinations, and has paved the way for tourist development in regions situated thousands of kilometres from the main tourist markets. Thus distance from the markets where tourists come from is

desire to temporarily change lifestyle and habits by discovering new places and cultures and traces of the past.

³⁴ However, a similar argument cannot be made for the exportation of raw materials, which is one of the traditional sectors of international specialisation for developing economies.

no longer a serious constraint for developing countries that wish to expand their tourist industry and in itself it can become an attractive feature.³⁵

While the points that have been examined up to here indicate that less developed regions, as far as geographical position and the availability of natural resources is concerned, have all the necessary prerequisites for *developing* a tourist industry, even other observations highlight some characteristics that would make the specialisation in tourism particularly advantageous. It has been noted, for example, that the tourist sector has some negative characteristics common to the export of agricultural products and raw materials (traditional “practical” alternative specialisation for less developed economies). While on the one hand a country which “exports” tourism has more control over the price of goods and tourist services than in the case of exports of raw materials, on the other hand the same country can enjoy more stability in their exports and therefore in income by diversifying its export base (Mathieson and Wall, 1982). This last point is very important since the instability of exports has been blamed for, among other things, provoking a decrease in the rate of domestic savings and in the productivity of capital (Guillaumont, 1987), reducing the capacity to import the capital goods necessary for development (Maizels, 1987), decreasing the level of investments (Kenen and Voivodas, 1972) and, finally, lowering the growth rate of the economy (Voivodas, 1974). However, these claims have not stood up to the test of empirical examination. Sinclair and Tsegaye (1990) examined the effects on the stability of income connected to exports of production diversification in the international tourist sector in a chosen group of countries (including countries with low and medium incomes and industrialised countries). They noted that in the majority of cases tourism did not lead to a significant decrease in instability and, in fact, in some countries the exact opposite was

³⁵ This aspect of international travel has led to the claim in a recent study (Syriopoulos and Sinclair, 1993) that the inclusion of the simple, basic cost of transportation among the explanatory variables of international tourism is incorrect, since this does not take into consideration the satisfaction the tourist derives from travelling itself.

the case. It is this fact that could represent a serious problem especially for small, less-developed open economies, where it is more likely that income attributable to tourism constitutes an important part of the overall value of exports and of the gross domestic product. Thus it may be necessary better to conclude by summarising to explain how tourism could be a possible instrument of economic growth.

2.3.3 The application of the Product Life-Cycle theory to tourism

Thus far this thesis has focused on some characteristics of tourist demand and supply and, above all, on the factors which appear to favour the development of the tourist sector and which might account for tourism's effect on economic growth. However, to again quote Mathieson and Wall (1982, p. 42), a theory has not yet been presented which identifies "*the underlying rationale of tourism as a means of economic development*", i.e. a model that explains the long term success or failure (in terms of the growth rate of the principal macroeconomic variables) of countries or regions that have specialised in tourism.

This part of the dissertation deals with an attempt to explain the economic dynamics of regions that specialise in tourist production. This attempt has been made using temporal evolution models of the regions and the tourist market, of which R. Butler's (1980) "*tourist-area cycle of evolution*" is probably the most famous example.

The life-cycle analysis theory (LCA), provides an interpretative hypothesis to explain the long term evolution of the demand for tourist services in a particular destination. This approach does not indicate if an economy should oppose or favour the idea of specialising in tourism, but rather, what should be expected from the evolution of tourism according to the phase the life-cycle of tourism. First, some definitions need to be clarified to avoid confusion between the traditional LCA in environmental policy,

which considers the environmental aspects of a certain product in different phases (production, consumption, waste disposal).

In Butler's model the notion of LCA refers directly to the concept of product life cycle, often used in the business world, which suggests that a product will experience a period of slow growth, followed – if properly marketed – by a take –off period of rapid growth, and subsequently a period of stability.

LCA considers four phases: the *introduction phase* (when the product is put on the market, characterised by a demand that is still in the latent stage and by a low rate of sales growth), the *growth phase* (during which time demand rapidly increases, gradually involving new groups of consumers), the *maturity phase* (when sales have reached their maximum, and any further increase depends exclusively on the ability to attract demand from competitors or on an increase in the population), and the *decline phase* (when demand begins to fall and new products tend to replace those in decline). The validity of a similar theory for the tourist market is disputable, just as its applicability to products from the manufacturing sector has already been criticised. However, this theory is useful for outlining the evolution of limited “destinations”, such as individual places or small geographical regions. Thus, if each geographical area (or each museum or archaeological monument³⁶) that is a tourist attraction is regarded as a specific “product”, the LCA theory can be used to rationalise the logistic (or almost bell-shaped) tendency of tourist arrivals in relation to time, which corresponds to the “discovery” phase characterised by an initially slow increase that gradually speeds up, a phase of progressive stabilisation due to the development of similar attractions and finally a phase of probable but not necessary decline.

³⁶ See Tisdell (1991, p.188-89). In this case the cyclic tendency, however, is substantially due to the fact that we are dealing with attractions that are able to satisfy the tourist in just the one visit, so that the initial development phase and the successive decline are due, respectively, to the progressive involvement of the existing latent demand and then to the exhaustion of this demand.

The model proposed by R. W. Butler (1980) is different from the life cycle analysis in that it focuses its attention on the modifications that take place in geographic areas specialised in tourism, and because it was specifically developed on the basis of natural-resource based tourism.

According to Butlers' model, the evolution of tourism in a particular area is initially based on the impact of this activity on the natural resources on which it is based, since there is a relationship between the density of tourist use of the area and the attractive capacity of the area itself, rather than on the (exogenous) evolution of demand. Butler observes that there is a certain regularity to the development processes of tourism, mainly due to the environmental impact of tourism. The evolution of tourist demand can therefore be represented with a model, like the one shown in Figure 8, where the following stages can be identified:

a) exploration: few visitors are interested and not many go to the place; there is no change to the environmental and social characteristics that existed before.

b) involvement: tourist arrivals begin to take on a systematic pattern and the initial accommodation and complementary structures are built.

c) development: activities linked to tourism are prominent in the area, which now also becomes an object of interest for economic interests from outside the area; the social and physical environment begins to undergo rapid transformation.

d) consolidation: the growth rate of arrivals and stays progressively slows down (while the area now has an obvious specialisation), in parallel with an aggressive marketing policy aimed at arresting the decrease in the rate of development by enlarging the market.

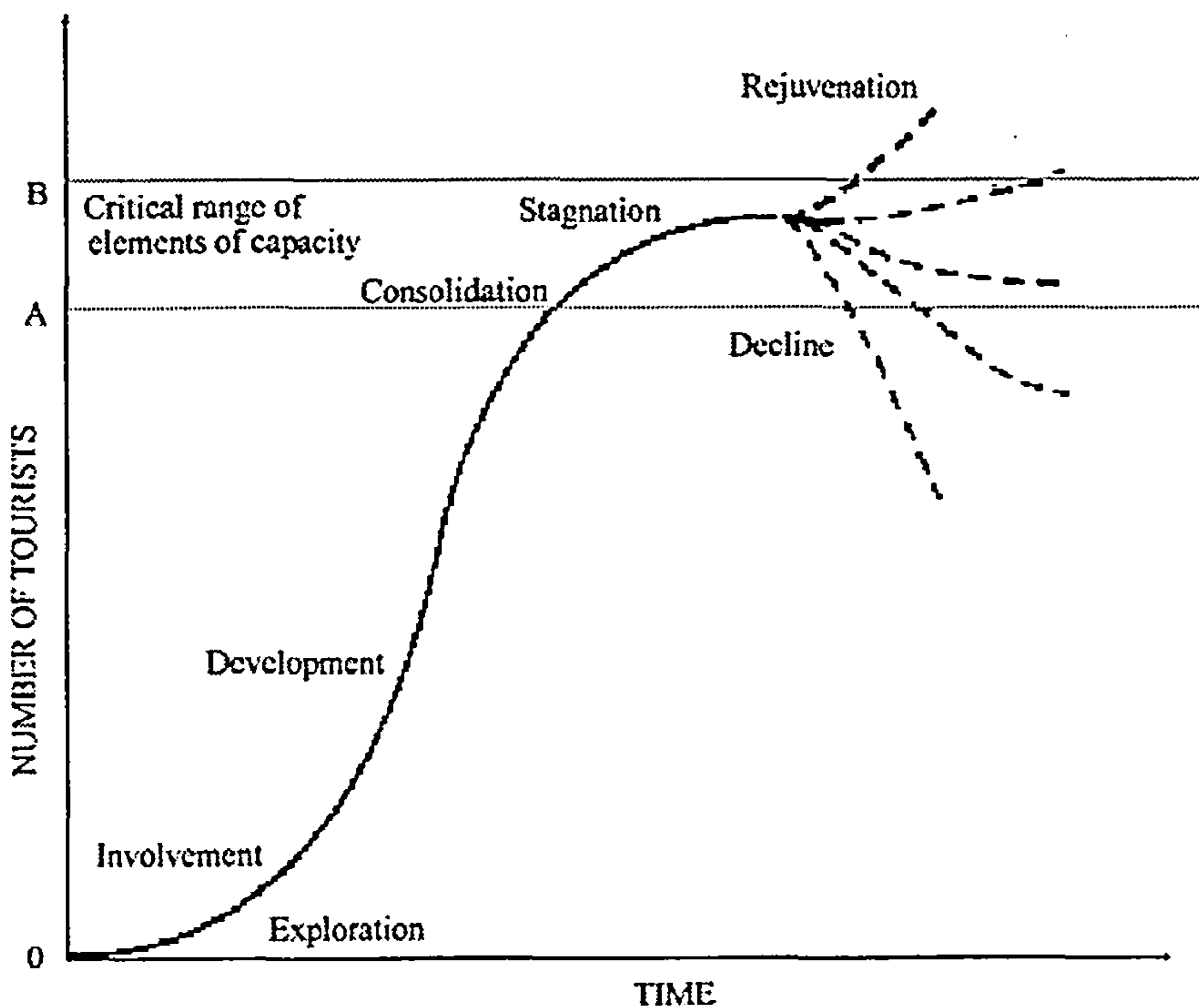
e) stagnation: stays have now reached their maximum with a part of the critical threshold of carrying capacity³⁷ (represented by the OA segment in Figure 8) having been exceeded, provoking a radical change in the physical and social environment that results in a deterioration of the natural resources that were responsible for the original

attractiveness of the area; in order to maintain the position attained (in terms of quantity of visitors), the system's economic resources are mobilised to their full extent.

f) decline or renewal: at this point the tourist area is confronted by two divergent possibilities (with intermediate levels). In the first case, the area can no longer compete with other areas that have similar resources but are less congested, so it concentrates on a less profitable market (the transformation of hotels into self-catering structures, with a subsequent decrease in the utilisation rate of the accommodation structure which is now aimed more at excursion and week-end tourism) in which local investment once again becomes prominent. In the second case, as long as the extreme threshold of carrying capacity has not been exceeded (represented by the OB segment), equal to total and irreversible environmental degradation, the area manages to re-launch its image by concentrating on a more specialised market.

Figure 8:

The evolutionary cycle of a tourist area.



³⁷ An explanation and analysis of the concept of carrying capacity will be given in paragraph 3.2.1.

In short it can be said that Butler's contribution represents a schematisation of both the typical development of tourist activities and the level of exploitation of resources that constitute the foundations on which those activities are based. This schematisation implies that the uncontrolled development of tourism usually cannot be sustained. Only by ensuring that tourism does not reach those levels that fall into the critical "zone" of carrying capacity, can the long term durability of tourism be guaranteed. In fact Butler writes: "These observations suggest that a change of behaviour is required by those people who are responsible for the planning, development and running of tourist areas. Tourist attractions are not infinite and eternal, but they must be seen and treated as finite resources that are non-renewable." (Butler, 1980, p. 11).

The empirical literature on Butler's model is not very rich. However, there are some studies that apply the proposed methodology to some specific case study (De Albuquerque K. and J. McElroy (1992), Wilkinson (1989)).

One of the principal merits of the theory of the cyclical evolution of tourism is that it issues a warning: it must not be thought that tourism is an economic activity which on a local level can be perpetually characterised by the high growth rates achieved in the past on an international scale.

Thus, when analysing whether a small economy with the necessary potential attractions can obtain advantages from specialising in tourism, the long term dynamics should not be overlooked (and these models give a picture that is not very reassuring both from the demand and the supply side). The reason for this is that, while in the case of developing countries temporary financial backing can be sought from tourism (through its effects on the balance of payments) for the investments necessary for starting a process of industrial transformation of the economy, the specialisation of the economic system in the tourist sector can only be considered positively if such a specialisation is able to

permanently guarantee a level of long term economic growth that is not inferior to the level reached by other economic sectors (in particular the manufacturing sector).

In the other parts of this dissertation an attempt will be made to understand if the European tourist market is able to respond to these conditions as they apply to its demand side characteristics. However, in order to do this, in the next few sections paragraphs it is necessary to introduce other instruments of analysis that the models which have just been seen are not able to supply.

Chapter Three

The Model

3.1 Introduction

The most convincing point that have emerged from those peculiar features of tourism that lead to its consideration as a instrument of economic growth appear to come mainly from the analysis of the demand characteristics. However the potential of an economic sector must also be studied from the production side, although it is important to realise that just the ability to exploit the exiting natural resource base cannot be considered as a guarantee of growth and prosperity for the economy. If this were the case the “developing” countries, whose positive trade balances owe a great deal to the exportation of the raw materials in which they abound, would then be in a better economic situation. Such a “Ricardian” argument (in that different productivity levels by sectors is implicitly considered to exist), is wholly confined to a static perspective. A particular sector is not developed in isolation and its effects on economic growth are determined by the dynamics that distinguish it and the way in which the dynamics “overflow” into the other sectors of the economy.

The fundamental contribution of endogenous growth models is that they allow us to abandon the usual implications of the theory of traditional growth (that held that the long term dynamics of an economy depended solely on exogenous factors)³⁸, leading to the absorption of the specific contribution of certain production sectors to economic growth in a comprehensive model that highlights the importance of factors such as

³⁸ In Solow’s model these exogenous factors are the rate of natural increase of the population and the accumulation rate of technological progress considered like “manna from heaven” to be immediately absorbable in any type of economy.

technological progress and human capital, which are recognised as having an endogenous component.

Empirical evidence suggests that technological progress and high rates of accumulation of human capital are “typical products” of the manufacturing sector whose development is linked to the permanence of a non-decreasing growth rate in the per-capita GDP of industrialised economies. Since its inclusion among the so-called “stylised facts” regarding growth identified by Nicholas Kaldor (and subsequently discussed in the 1986 article by Paul Romer, one of the contributors to the new theory of growth), this evidence has now been corroborated by the numerous studies made of this subject³⁹.

The theoretical contributions of Romer (1990) and those summarised and developed by Grossman and Helpman (1991), together with those empirical papers that examine the factors that determine the growth rate of production⁴⁰, lead to the conclusion that it is precisely the endogenous component of technological progress of the manufacturing sector that ensures a non-decreasing long term growth rate in the entire economy.

Given a similar picture, in which the manufacturing sector is the dynamic element of economies (and momentarily limiting the observations made here to the production side), specialisation in an activity that does not belong to this sector, such as tourism, can only be profitable in the long term if the tendency for increasing production in the industrial sector is evenly reflected in the entire economic system. For this reason the question of *intra-* and *inter-industrial* “spillovers” of stocks and of knowledge flow has catalysed the attention of recent developments in the theory of international commerce and economic growth, with the aim of identifying under what conditions a uniform

³⁹ A summary of empirical texts that are concerned with studying the growth rates of national economies and identifying those rates that constitute its real determining factors, can be found in the first chapter of “*Innovation and Growth in the Global Economy*” by Grossman and Helpman, a book that also reviews and presents in a systematic way the principal theoretical contributions that consider industrial innovation to be part of the theories of economic growth and of international commerce.

⁴⁰ See the previous note.

growth independent of historical-geographical specificities and production specialisation is possible. Romer (1990) implicitly assumes that human capital can easily be used also at an international level while in Krugman's "*learning by doing*" model (1987) this result remains the same even when the transmission of knowledge is only partially possible, as long as there is a decreasing accumulation rate of knowledge stock (without introducing the hypothesis of the constancy of that rate which characterises endogenous growth models).

The "*spillovers*" proposed by Krugman are essentially *intra-industrial*, although for the purposes of this research it is important to concentrate more on studying the transmission of the growth tendency and the knowledge flow on an *inter-industrial* level. In Lucas' model (1988), in which this transmission is implicitly supposed to be equal to zero, unequal growth is the norm. Given a simple economy based on two products, each sector experiments, by means of an intra-sector external economy, with an independent rate of accumulation of human capital⁴¹, which in the case of total specialisation (whose movement towards the sector with a high or low rate of increase in productivity is substantially determined by the stock of accumulated human capital), characterises long term economic growth rate. Should the economy be opened to international commerce, this independent rate of accumulation would lead to an increase in comparative advantage, although from a dynamic point of view the effects of this could subsequently be extremely negative, dragging the economy into a low-increase spiral.

In conclusion, when considering an economy specialising in an economic sector that is very "different" from the manufacturing sector, which can therefore take advantage of very weak knowledge *spillovers*, the possibility that such an economy will have the same growth rate as an industrialised economy can only be guaranteed in the long and very

long term. Further, the entire adjustment period will be characterised by unequal growth that favours the economy specialised in the manufacturing sector. The possibility that a non-industrialised economy, which we assume to be the least developed, can grow at a faster pace than an economy specialising in the “leader” sector, in order to close a part of its income gap (as should happen according to a traditional Solow model) can be completely excluded.

Given this conclusion the potential of the tourist sector as an instrument and regulator of growth would appear to be severely limited, since it is likely that at least a part of the knowledge produced in an economy specialising in the manufacturing sector cannot be “transferred” to tourism, given the unquestionable difference existing between the two production sectors⁴² and the nature of tourism, which is concerned with providing services for people (and at least partly immune to the application of the technological progress of the industrial sector).

At this point it is essential to study the characteristics of demand which up to now has been deliberately ignored. This is because equalisation of income growth rates, which as previously seen is not really necessary on the production side for at least the partial operation of the *spillover* mechanism, could depend on relative prices. It is only for particular situations in trade theory, that an economy specialising in tourism grows at a rate similar to that of an economy specialising in the manufacturing sector.

It is not the aim of this dissertation to try to discover the existence and the extent of technological *spillovers* between manufacturing production and the tourist sector. Instead it is necessary to determine the conditions of demand under which tourism can lead to increased economic development.

⁴¹ It must be briefly noted that when dealing with an endogenous growth model, the accumulation rate of human capital coincides with the rate of production increase in the sector, while the role of production is linear in this cumulative factor.

⁴² Considering the example given in the previous note, the amount of technological *spillovers* into tourism is probably bigger for tourist regions in industrialised economies.

3.2 The model

The first original contribution of this dissertation concerns a model developed following the Lucas's (1988) model on trade and endogenous growth. A first version of the model has been developed in Lanza and Pigliaru (1994, 1998).

The model identifies the conditions under which tourism specialisation is harmful to economic growth. This is an important consideration since it is possible to highlight the crucial links between sectors and countries and identify all the relevant issues related to this problem.

Starting from a broad perspective, the tourism market is characterised by two simple stylised facts:

- a) countries specialised in the tourism sector have experienced positive economic growth in the recent past and
- b) they have a (relatively) small dimension.

The following experiment was carried out by taking two separate lists of countries from a World Bank data set. The first includes the top 15 fastest growing countries in per capita income, from 1985 to 1995. The second includes the 15 countries with the highest degree of specialisation in tourism (defined as the ration of international tourism receipts to the total value added).

The result is perhaps surprising - six of the "tourism" economies appear in the list of fast growing economies.

TABLE 5

Top 15

Tourism receipt/value added

P.c.annual income growth
(average 1985-1995)

Antigua and Barbuda	94.7%	China	9.0%
St. Kitts and Nevis	42.3%	Korea, Rep.	7.7%
Barbados	41.1%	Thailand	7.6%
Grenada	27.6%	Suriname	7.0%
St. Vincent and the Grenadines	25.6%	St. Kitts and Nevis	5.9%
Cyprus	23.6%	Singapore	5.4%
Jamaica	22.9%	Antigua and Barbuda	5.3%
Seychelles	21.7%	Chile	5.3%
Dominica	17.9%	Indonesia	5.3%
Croatia	12.5%	Maldives	5.1%
Mauritius	11.8%	Mauritius	5.1%
Jordan	11.2%	Malta	4.8%
Singapore	10.8%	Hong Kong	4.6%
Dominican Republic	10.7%	Seychelles	4.5%
Guyana	10.4%	Cyprus	4.5%

It is possible underline that:

- 1) The 15 most specialised countries are also small countries.
- 2) Six countries from the tourism list are also among the top 15 most dynamic countries in terms of per capita annual income growth during the period 1985-1995.

According to these results increasing specialisation in tourism seems to be beneficial to developing small countries which are well endowed with environmental resources.

However, the management of these resources is quite often problematic.⁴³ Some of the relation between the tourism sector and the environment will be examined in chapter 6. Tourism, and in particular tourism based on natural resources, is not different from many other sectors subject to degradation through natural resources over-use. Recently some attention has been paid to the relation between tourism and the environment. (Pearce (1995), Romeril (1989), Farrell and Runyan (1991), Catter and Goodall (1992), Eber (1992), Jenner and Smith (1992)). The main reason for unsustainable resource use is market failure. Many natural resource are public goods and free access to them could result in over-use. One of the method used to overcome this problem is by setting a social price to the environment using a number of different techniques such as hedonic pricing, travel costs or contingent valuation. It is interesting to notice that international organisations are becoming increasingly favourable towards the concept of sustainable tourism and are providing assistance for environmental conservation and development. The European Union, for example, is providing help for the Pacific Regional Tourism Union with guidelines for tourism development and specific criteria for environmental impact. All these dimensions should be better addressed and qualified⁴⁴.

Even though it does not provide specific consideration about the environment Lucas's model provides an appropriate framework for discussing the effect of tourism on economic growth. Lucas considers a world formed by a *continuum* of small countries producing two goods. Each sector is characterised by its own specific rate of endogenous accumulation through a learning-by-doing process. This is commonly referred to as "human capital". Let us define the high-learning sector "manufacturing"

⁴³ On the relation between natural resource endowment and economic growth see Sachs, J. and Warner, A. (1995).

⁴⁴ The dimension issue is examined in Lanza, A. and F. Pigliaru, (1998). However, in order to achieve a complete picture, a more sound valuation should be addressed. Taking into account the particular nature of the tourism industry could be used to explain the environmental costs of these results.

and the low-learning "tourism". In each country, human capital "h" is accumulated over time and the benefits are in the form of pure external economies. Production and accumulation functions (linear in h, the cumulable factor) are as follows:

$$Q_i = h_i L_i \quad i=(M,T) \quad (3.1)$$

$$\dot{h}_i = \lambda_i h_i L_i \quad i=(M,T) \quad (3.2)$$

where M is manufacturing, T is tourism, λ_i is the sectional learning-by-doing parameter, and L is the sectional labour force. The growth rate of sector i is:

$$\dot{h}_i/h_i = \lambda_i L_i \quad (3.3)$$

Let us assume that countries have a fixed stock of labour which is equal to one; the above characterisation of the two sectors yields $\lambda_M > \lambda_T$ i.e. human capital accumulation is faster in manufacturing than in tourism for a similar allocation of the fixed factor.⁴⁵

International trade makes these economies completely specialised with respect to the comparative advantage they obtain on entering the world market. In this setting, long-run growth rates are very easy to define in terms of the single good produced by a completely specialised economy, since they reduce to

$$\dot{Q}_i/Q_i = \lambda_i \quad (3.4)$$

This result suggests that specialisation in manufacturing is always the best choice in terms of maximising growth. Under certain conditions, however, the conclusion could be incorrect.

⁴⁵ We are allowing the tourist sector to enjoy some degree of endogenous human capital accumulation, so that its supply may grow over time. As an alternative, we could assume that exogenous technical progress is what drives the growth of this sector, and still retain the foregoing results.

An economy with no manufacturing, and therefore deprived of the main "engine of (productivity) growth" may in fact grow even faster than a similar economy specialised in manufacturing. This result depends on how the price of tourist goods changes over time in relation to the price of manufacturing goods. To better assess this point, consider consumers that live and work in an industrialised country undergoing a rapid (endogenous) economic growth and spending a proportion of their income on holidays (renting, for example, holiday homes supplied in a fixed quantity). In general their willingness to spend grows with their income. *How much* is however the crucial point. If tourist preferences are such that they spend a non-diminishing proportion of their income on holiday rentals, then the economic profitability of the properties grows at least as fast as the tourists' income. In other words, expenditure creates a link between industrialised and tourist countries, to the advantage of the latter. In this case, price dynamics could offset (partially or entirely) the sectoral gap in productivity growth. More formally, in order to evaluate the two growth rates in terms of a common good, the rate of change of the terms of trade $p \equiv p_T / p_M$ should be taken into account.

As shown by Lucas (1988), under CES international homothetic preferences, the terms of trade can be defined as:

$$\dot{p}/p = (\lambda_M - \lambda_T) \sigma^{-1} \quad (3.5)$$

where $\sigma = 1/(1+\rho)$, is the elasticity of substitution. Clearly, $\dot{p}/p > 0$ since $\lambda_M > \lambda_T$ (i.e. the supply of the manufacturing good grows faster than that of tourist services).

Then the growth rate of a country specialised in tourism (say λ_M) in terms of the manufacturing good is

⁴⁶Under a CES international utility function $U(Q_M, Q_T) = (\alpha_M Q_M^{-\rho} + \alpha_T Q_T^{-\rho})^{-1/\rho}$, relative demand as a function of prices is $Q_M/Q_T = (\alpha_T / \alpha_M)^\sigma (p_T / p_M)^{-\sigma}$ where $\sigma = 1/1+\rho$. Expressing the international relative preferences as a function of quantities, taking logs and differentiating we get $\dot{p}/p = -1/\sigma (\dot{Q}_T/Q_T - \dot{Q}_M/Q_M)$. Since all trading countries are

$$\gamma_M = \lambda_T + (\lambda_M - \lambda_T)\sigma^{-1} \quad (3.6)$$

so that $\gamma_M \geq \gamma_T$ according to $\sigma \geq 1$.

Therefore the result depends on the elasticity of substitution between manufacturing and tourism. If $\sigma = 1$ the time path of the terms of trade, which favours the tourism good, exactly offsets the physical productivity growth. This means that specialisation in tourism is harmful to growth only if $\sigma > 1$.

Generally speaking, when analysing the case of uneven growth, "the interesting case.... is when $\sigma > 1$ " (Lucas (1988)), p.29), since it rules out the possibility of "immiserising growth". However, since this thesis is concerned with preferences for two distinct bundles of goods, i.e. manufacturing and tourism, the elasticity of substitution may be less than one.

The demand side condition presented here allows an economy specialising in tourism to grow more quickly than an economy specialising in the manufacturing sector depending on the elasticity of substitution. Since in this model consumers are confronted with two very different types of goods, the existence of a low level of substitutability between tourism and other consumer goods is quite plausible.

The hypothesis that there is a lack of substitutability between tourist consumption and the consumption of manufactured goods, appears to be the case for types of mature tourism that are typical of high-income countries, where high departure rates show that holidays are now considered necessary consumption, only slightly influenced by price variations. This model assumes that the increased availability of manufactured goods is not enough to completely satisfy, or at least only to a small extent, consumer demand for recreational activities.

completely specialised either in tourism or manufacturing, then $(\dot{Q}_i / Q_i) = \lambda_i$, so that $\dot{p}/p = 1 / \sigma(\lambda_M - \lambda_T)$

In Lucas' model the value of the elasticity of substitution determines if the variation in price is sufficient to compensate for the lower growth rates of an economy specialising in tourism, while in a static analysis any variation would be sufficient to claim that the development of tourism can bring benefits to the economy. Copeland (1991) used a static model to show that growth in international tourism increases overall affluence, inducing an increase in the price of services.

Naturally, the elasticity of substitution and accuracy of the model forecasts must both be verified by means of an econometric analysis. This analysis is carried out in Chapters 4 and 5.

3.2.1 The supply side

The supply provides another way of determining a difference between the tourism and manufacturing sectors. One of the main characteristics of manufacturing is the absence of supply constraint in the growth process. Increases in demand are met by increases in supply increases. This is not true, in general, for tourism which seems to be constrained by the supply side. Natural resources are scarce and congestion poses problems for policy makers; in short: supply cannot always follow increases in demand.

This relevant point, however, does not affect the result of the proposed model. In this model the supply side depends on the sectoral learning-by-doing as put forth in Equation (3.4). If we are explicitly interested in the supply side, we are considering the possibility of different rates of human capital accumulation. Taking into account only the productivity side, the growth rate is faster in manufacturing than in tourism because, as we have already discussed, in this case the long run growth rate is simply $\dot{Q}_i/Q_i = \lambda_i$.

A constraint in the supply side of the tourist sector does not change the results of the model.

Generally speaking, the tourist sector is characterised by low supply growth. This is one of the conditions that allows for possible specialisation, together with an elasticity of substitution lower than one. It is possible to show this result combining equations (3.5) and (3.6) ⁴⁷.

We obtain

$$\gamma_T = \left(\frac{\sigma - 1}{\sigma} \right) \lambda_t - \frac{\lambda_M}{\sigma} \quad (3.7)$$

The growth rate of a country specialised in tourism (in terms of the manufacturing good) is inversely related to σ and, assuming $\sigma < 1$, is inversely related to λ_T .

Thus, the lower the supply offered by the tourism sector (i.e. the lower λ_T) in the presence of $\sigma < 1$ (i.e. tourism and manufacturing are not good substitutes) the higher the price of the manufacturing good relative to the tourist good.

Looking at this issue from a policy perspective, it is likely that a tourist resort (particularly a successful one) would perceive the physical constraint as a major problem. Beaches and coral reefs are exogenously determined and there is no possibility to increase their supply. Furthermore, their fragility call for a clear determination of their carrying capacity. Quite often the total supply decreases over time due to over exploitation.

In this thesis the situation is rather different. Let's first assume λ_M as exogenously determined. Further assuming an exogenous (lower than one) value for σ , it is possible to show that the growth rate of a country specialised in tourism is inversely related to the tourism supply. The lower is the supply of tourism the higher is its long term growth rate, simply because the relative prices continuously offset differences in physical productivity.

⁴⁷ F. Pigliaru (1996), *Economia del turismo: note su crescita, qualità ambientale e sostenibilità*, Quaderni Crenos, n. 12

As shown in Chapter 6 there is a clear relation between the proposed model and the more specific literature on tourism supply. The scarcity issue is also relevant in this framework to differentiate between resource based tourism and non resource based tourism.

3.3 An extension of the model

In section 3.2 the positive effect on economic growth from tourism specialisation is crucially linked to a specific case: $\sigma < 1$. In this case there is poor substitutability between tourist demand and the demand for manufactured goods. Under this assumption the time path of the terms of trade, that continuously favour the tourism good, offsets the physical productivity growth. As a result tourism specialisation is not detrimental to economic growth.

In this section two variations to the original model are presented that allow us to obtain a positive effect of tourism specialisation even if σ is not less than one.

In the first variation we consider non-homothetic preferences. In this case tourism is thought of as a luxury good, and consequently the demand for it should further modify the terms of trade to the detriment of the country specialising in “manufacturing”.

Under these conditions, a limit to the value of the elasticity of substitution equal to 1 would seem to be excessively restrictive. We are now considering a quasi-homothetic Stone-Geary utility function: $U(Q_M, Q_T) = (Q_M - \theta)^{\alpha_M} Q_T^{\alpha_T}$, where $\alpha_M + \alpha_T = 1$ and $\theta > 0$.

Associated with this specific functional form we have $\sigma = 1$ and thus:

$$p = \frac{\alpha_T(Q_M - \theta)}{\alpha_M Q_T}. \text{ Homothetic preferences will imply } \sigma = 1 \text{ and then}$$

$$\frac{\dot{p}}{p} = \frac{\dot{Q}_M}{Q_M} - \frac{\dot{Q}_T}{Q_T} = \lambda_M - \lambda_T. \text{ In this case the rate of growth of the two countries or}$$

economies (one specialised in manufactured goods, the other in tourism) is equal. In

the case of non-homotheticity we have $\frac{\dot{p}}{p} = \frac{\dot{Q}_M}{Q_M - \theta} - \frac{\dot{Q}_T}{Q_T}$. As we already know in

the case of complete specialisation we have $\frac{\dot{Q}_M}{Q_M} = \lambda_M$; $\frac{\dot{Q}_T}{Q_T} = \lambda_T$ and then $\lambda_M < \lambda_T$. In

other words, the presence of non-homotheticity favours the tourism option.

In the second example we adopt again homothetic preferences and we assume $\sigma > 1$.

Ceteris paribus, in this case specialisation in tourism will be detrimental to economic growth i.e. $\lambda_M > \lambda_T$. However this conclusion is based on a specific assumption: that

there is an absence of spillovers between sectors that face different productivity paths.

This issue has been raised by Murat M. and Pigliaru F. (1998). Knowledge accumulation in a sector (that faces relatively less rapid endogenous growth) also depends upon the increase in productivity and knowledge of the other, more dynamic, sector that from a technological point of view could be considered as a leader. In our case, with M as leader we are considering the same production and accumulation functions (linear in h, the cumulable factor). In each sector, "human capital" h is now accumulated over time in a different way.

$$\frac{\dot{h}_T}{h_T} = \lambda_T u_T + \delta \frac{\dot{h}_M}{h_M} = \lambda_T u_T + \frac{\delta \dot{\lambda}_M (1 - u_T)}{h_T} \quad 0 < \delta < 1$$

Spillovers intensities that are coming from the leading sector is measured by the parameter δ . In this case, apart from the hypothesis $\delta = 0$, the growth rate of productivity of a follower will converge over time with a speed that depends on the parameter δ .

This last case concludes the examination of the economic literature dealing with tourism as an instrument of economic development. Consequently, it is possible draw up a list of the principal ideas that have emerged which may address the principle question that raised in this thesis.

In general it is possible for tourism to become a *permanent* instrument of economic growth only within certain rather restrictive limits. However, the models of tourist activity evolution tell us that it is precisely in the long term that the growth capacity of a tourist industry in a particular area finds serious restrictions, both in the evolution of the demand side and in the special characteristics of the supply side. Nonetheless, the insertion of the tourist economy in an endogenous growth approach leads to the conclusion that such an economy can be characterised by a long term, high growth rate only when the relative demand between tourist goods and services and manufactured products satisfies certain conditions.

On the one hand, it makes sense to focus the attention of this thesis on a mature market, such as the western European one, in order to attempt to discover if tourism still represents an activity that is effectively suitable for those areas that are specialised even after the initial "boom" is over, and, further, if those small lesser developed economies which are of particular interest are dependent on the demand from this European market.

On the other hand, however, the necessity for the peripheral areas of industrialised countries to have a tourist industry on which they can rely in the long term, also emphasises the relevance of the problems of sustaining the activity on the supply side.

Chapter Four

Empirical Analysis (Part 1)

4.1 Introduction ,

This chapter comprises the empirical part of the study. The empirical aims of this chapter are to determine the fundamental characteristics of international tourist demand, so that from this some valid long-term conclusions about an economy specialising in an activity linked to tourism can be reached. Analysis of the European tourist market responds to both this need and to that of understanding the characteristics of that segment of the international tourist demand to which the future of the European tourist regions are linked.

It is particularly important determine two specific characteristics: the elasticity of income, on which, the possibility of growth in a tourist area depends; and the level of substitutability (i.e. the elasticity of substitution) in consumption between tourist goods and services and manufactured goods, according to the theory of endogenous growth applied to tourism. The possibility that the economic growth of a tourist area is not less than the economic growth of areas mainly concerned with industrial production depends on the level of substitution.

Unlike most previous studies that have been carried out over the last 25-30 years⁴⁸ which have concentrated on the characteristics of tourist demand from and/or to single

⁴⁸ Gray's study (1966), which contains an analysis of the assessments of the total expenditure in the United States and Canada for international travel, is usually considered by empirical texts as being the initiator of studies on tourist demand. However, when the geographical destination is specified, both by means of models with just one equation (as in the case of Little [1980] who studied tourist demand in the United States for the 10 main foreign destinations), and by means of models with an approach based on a system of equations (which will be dealt with later), generally an appraisal is made of the characteristics of the demand functions relative to the individual destinations in the geographical area being studied (see, for example, O'Hagan and Harrison, 1984; White, 1985; Fujii, Khaled and Mak, 1985; Bakkal, 1987; Soo Pyo, Uysal and McLellan, 1991; Bakkal and Scaperlanda, 1991; Syriopoulos and Sinclair, 1993). An important exception to this approach to analysis is represented by Artus' study

countries, or even more limited areas of tourist demand, the objective here is to obtain aggregate information on the characteristics of tourist demand. It is interesting to note, for example, that in Great Britain spending money on going to Italy is considered a *necessity* while spending money on going to Portugal is a *luxury*. However, these idiosyncrasies aside this dissertation is concerned with a more general approach.

The approach here has a dual advantage: on the one hand it compensates for the positive or negative *shocks* that often characterise tourist movements towards a single destination⁴⁹, and it “dilutes” the effects of possible variations at a national level of the statistical data collection sources and techniques, by directly considering an aggregate in which the importance of these problems diminishes; on the other hand it conforms to the *macro-oriented* models of the theory of international trade, where only one international tourist demand function is present.

4.2 A general expenditure allocation system

Examining the level of substitution between tourist and non-tourist consumption poses the problem of the impossibility of a separate study of tourist demand.

The problem of the existence of substitution or complementary effects has long been recognised in empirical analysis on tourism by highlighting the necessity of having adequate information on interconnected elasticities Taplin (1980) approached this problem by using “models for the general allocation of tourist expenditure”. *A model for allocating expenditure simply shows how a consumer distributes a certain level of expenditure among various goods by calculating a system of demand equations* (White, 1985).

(1972), where the author made an estimation of the tourist expenditure equation limited to the United States for holidays in all western European countries.

⁴⁹ An important sporting event or an event opposed to strong political tension are examples of things that can have a significant effect on the movement of tourists towards a particular country. However, on a more aggregate level, as in the case of all of western Europe, these events lose most of their importance since the substitution effects prevail (thus if a destination turns out to be not very safe, the tourist chooses another area to go to rather than give up taking the holiday).

However, in studies of tourist demand where these models have been used tourist expenditure has always been assumed to be separate from other consumption decisions by proposing a two (or more) stage consumer balance decision model. In the first stage the consumer decides what part of his available income is destined for tourism, and in the second he decides how to divide that part between various tourist destinations.

Clearly this formulation cannot be used here, since here the concern is with studying the interrelations between tourism "consumption" and the demand for traditional consumer goods. However, the White model can easily be adapted to the requirements of this study by separating expenditure on international tourism in all the countries under consideration from expenditure in all other destinations. While such an assumption may appear rather strong, it is certainly not comparable to the ones derived from the single equation models where every destination is considered individually.

General models for allocating expenditure hold that the representative variable of international tourist demand is in fact a form of "expenditure". This solution, apart from being the only one that makes the comparison between demand for consumption goods and the demand for tourism worth considering, is also the one that is most consistent with the observation that in a relatively mature tourist market, where the act of going on holiday has become a "necessity" (and where the rate of departures, arrivals and stays tends to be stable), the elasticity of income relies heavily on the dependent variable used. Therefore only by utilising information about expenditure is it possible to determine if tourist demand is still growing (albeit perhaps more qualitatively than quantitatively).

The need to estimate both the elasticity of income and the elasticity of substitution severely limits the choice of functional forms that can be used in the econometric analysis. As previously seen, the elasticity of substitution can be estimated with CES functions. The most important characteristic of these functions, however, is that they

are homothetic, which make them inadequate for describing a phenomenon in which this hypothesis is hardly ever used.

On the other hand, an investigation of the implications determined by maintaining the basic properties of the demand theory⁵⁰ has demonstrated that the correct use of simple models of constant elasticity, such as the double logarithmic model, also necessarily involve the assumption that all expenditure elasticity is equal to 1, if either these assumptions or, more particularly, the linear limit of the consumer balance (or additivity) are not to be violated and, consequently, incorrect estimates⁵¹ are not to be accepted *a priori*. Further analyses have led to similar conclusions with regard to the use of the Rotterdam model of Theil and Barten⁵², which has shown itself to be very useful in verifying the same axioms of consumer theory.

At the same time, however, economic theory has also identified models that are consistent with the presence and estimates of non-homothetic demand functions. The most famous of these is undoubtedly Stone's *linear expenditure system* (LES) of 1954, based on "Stone-Geary" almost-homothetic utility functions. For its part the LES involves very rigid assumptions, in particular that the compensated interconnected elasticity and the elasticity of income are positive (and therefore that all goods are net substitutes and are not inferior).

For these reasons, attention is focused on the use of the flexible functional forms: "An algebraic functional form for a complete system of consumer demand functions is said to be flexible if, for every given aggregate of non-negative prices, of goods and of income or total expenditure, the parameters of the complete system of consumer demand functions can be chosen in such a way that the consumer demand functions and their interconnected elasticity and elasticity of prices and income are capable of

⁵⁰ These properties are the additivity, the zero grade homogeneity, the symmetry and the negativity.

⁵¹ For a full explanation of these points that substantially limit the liberty to formulate an econometric analysis consistent with consumer theory, see Deaton and Muellbauer (1980).

⁵² These results are explained in Christensen, Jorgenson and Lau (1975).

assuming arbitrary values for the given aggregate of goods and income, subject only to the requisites of theoretical consistency". (Lau, 1986, p. 1543)

L. Lau's definition makes the simple point: with "flexible" functional forms economic and econometric theory is able to elaborate estimable functions, of both demand and production, that do not incorporate *a priori* restrictions on the behaviour of the consumer (or incorporate them as little as possible). These functions also make it possible to verify the assumptions of the consumer theory relative to the "*well-behaved*" preferences, and consequently to elaborate less restrictive demand function models and compare any eventual alternative assumptions.

Since the first studies by Diewert (1971), this family of models has continued to adopt new forms (among those that are widely applied in econometric demand analyses, the "*Translog*" models of Christensen, Jorgenson and Lau, 1975, deserve special mention). The model used here is the *Almost Ideal Demand System (AIDS hereafter)*, proposed by A. S. Deaton and J. Muellbauer in 1980. This model was immediately successful for a number of reasons. It is extremely flexible, and, among other things, the axioms of the theory of choice can be imposed by means of simple linear restrictions on the parameters. It is extremely simple when used empirically, since its variables correspond to commonly found statistical data, and it can be estimated equation by equation. This model fulfils all the requirements demanded in this thesis in order to verify the theories on tourism analysed in the first part of this dissertation.

4.3 The AIDS model of Deaton and Muellbauer

This model is particularly suitable for the requirements of this work, since it combines the generality and simplicity of its formulation with the possibility of testing some specific characteristics that tourist demand either has or should have. In addition it

provides the possibility of estimating without *a priori* restrictions, on the various forms of elasticity in question: that is, those relating to prices, expenditure and substitution.

The basic expression of the model is⁵³:

$$w_i = \alpha_i + \sum_{j=1}^n \gamma_{i,j} \log(p_j) + \beta_i \log(x / P^*) + \varepsilon_i \quad (4.1)$$

in which p_j is the price of good j , x the total expenditure. The price index P^* is approximated by the share weighted price index⁵⁴ :

$$\ln P^* = \sum_{j=1}^n w_j \ln p_j \quad (4.2)$$

As usual, α_i , $\gamma_{i,j}$ and β_i are parameters while ε_i is a normal disturbance term.

By applying this it is possible to obtain a model that is commonly called, after the definition by Blanciforti and Green (1983), the “*linear approximate AIDS*” (*LA/AIDS*) *model*.

As can be seen, the AIDS models are made up of a system of simple demand functions in which the expenditure rates are functions of the logarithm of the prices and the logarithm of the total expenditure (or of the available income if this is used in place of expenditure). The β_i parameter sign determines if the product i is a necessary or luxury good; the $\gamma_{i,j}$ coefficients indicate, clearly not compensated for the income effects, the effect on demand of changes in the various prices.

⁵³ To see how this expression comes directly from a well-defined family of utility functions (the PIGLOG), it is best to look at the original study by the authors (Deaton and Muellbauer, 1980).

⁵⁴

The choice of such approximation leads a form which is called Linear Approximate - Almost Ideal Demand System (LA/AIDS). (see Blanciforti and Green (1983))

The generality of the model makes it possible to test the applicability of the principal basic hypotheses of the demand theory, with the exclusion of the additivity condition whose presence is required *a priori* to bring the sum of the w_i share to zero, by imposing restrictions on the parameters of the functions. As the authors of the model demonstrate⁵⁵, the additivity condition requires the following conditions on the parameters to be satisfied:

$$(4.3) \sum \alpha_i = 1; \sum \gamma_{i,j} = 1; \sum \beta_i = 0$$

the homogeneity condition requires that the following condition is in force:

$$(4.4) \sum \gamma_{i,j} = 1;$$

finally the symmetry condition requires the restriction

$$(4.5) \gamma_{i,j} = \gamma_{j,i}$$

With the objectives of this thesis in mind, it is important to point out the possibility of testing the homotheticity hypothesis. To verify this it is sufficient to impose the restriction

$$(4.6) \beta_i = 0 \text{ for all the } i,$$

as proposed, for example, by Anderson and Blundell (1983) in their study of consumption expenditure in Canada.

4.3.1. Determining the elasticity of prices and expenditure

As has been seen, the dependent variable in AIDS models is expressed in relative terms. As a result of this, even though the γ and β parameters are coefficients of the logarithm of prices and real expenditure, they do not directly represent the elasticity of prices and expenditure. In some studies information about demand characteristics (in particular the *necessities* and *luxuries* classification) is taken directly from the signs and absolute values of

⁵⁵ Deaton and Muellbauer, *op. cit.*, p. 314.

the coefficients⁵⁶. However, the majority of studies that use AIDS models⁵⁷, beginning with the one by Anderson and Blundell, use the following formulae for the elasticity of prices and income:

$$(4.7) \quad e_{ii} = \gamma_{.ii} / w_i - \beta_i - 1;$$

$$(4.7a) \quad e_{ij} = \gamma_{i,j} / w_i - \beta_i w_j / w_i;$$

$$(4.8) \quad e_i = 1 + \frac{\beta_i}{w_i}$$

(4.7) and (4.7a) indicate the demand elasticity of non-compensated prices, while the corresponding expression for compensated elasticity is:

$$(4.9) \quad e_{ij}^* = e_{ij} + w_j \left(1 + \frac{\beta_i}{w_i}\right)$$

and since it is known from (4.8) that $e_i = 1 + \frac{\beta_i}{w_i}$; then (4.9) becomes:

$$(4.9a) \quad e_{ij}^* = e_{ij} + w_j e_i$$

Green and Alston (1990) rightly pointed out that these formulae must be modified when the LA/AIDS model is used. The proposed alternative formulae are not given here. Studies by these and other authors do show, however, that the distortion provoked by using the previous equations is minimal. Estimates made with them can therefore be taken as excellent approximations of the real values of elasticity.

4.3.2. Determining the elasticity of substitution

It is possible to discover the principal characteristics of the demand for analysed goods by means of the formulae described above. However, the necessity of making Lucas'

⁵⁶ For example, Mergos and Donatos (1989).

⁵⁷ For example: Hayes, Wahl and Williams (1990); Chalfant, Gray and White (1991) and also those various studies that are directly concerned with tourism based on these models: O'Hagen and Harrison (1984); White (1985); Fujii, Khaled and Mak (1985); Syriopoulos and Sinclair (1993).

In 1990 Green and Alston produced the study that rationalised the various attempts to calculate the elasticity of AIDS models.

model empirically useful when applied to tourism, also makes it necessary to estimate the elasticity of substitution.

The contributions of Chalfant (1987) and Chalfant, Gray and White (1991) have elaborated the following formulae for calculating this elasticity when using both the AIDS model and its linear approximation, LA/AIDS.

In the first case the formula is the following:

$$(4.10) \sigma_{i,j} = 1 + \frac{\gamma_{i,j}}{w_i w_j} + \frac{-\delta_{i,j}}{w_i} + \frac{\beta_i}{w_i} \left(1 - \frac{\alpha_i \sum_k \gamma_{i,k} \log p_k}{w_j} \right)$$

while in the second case it becomes more simply

$$(4.11) \sigma_{i,j} = 1 + \frac{\gamma_{i,j}}{w_i w_j}$$

using Stone's geometric indicator as a general indicator of price levels.

These formulation can be achieved starting from the elasticity of substitution definition by Hicks-Allen

$$(4.12) \sigma_{ij} = e_{ij}^* / w_j$$

in which e_{ij}^* indicates either the elasticity of the price of Hicks' demand function or the compensated elasticity, and by rewriting Slutsky's equation in an elasticity form

$$(4.13) e_{ij}^* = e_{ij} + w_j e_i,$$

so that with suitable substitutions it is possible to end up with the equivalent expression of the elasticity of substitution:

$$(4.14) \sigma_{ij} = e_{ij} / w_j + e_i,$$

substituting the formulae for the elasticity of prices and of income in (4.9b), (4.10) is once again obtained. This last expression in particular makes it possible to see how the elasticity of substitution is positively correlated to the y_j parameter.

4.4. Application of the AIDS model to international tourist demand.

Since the characteristics of the model are now clear, it is time to look at how the model itself can be applied to this thesis.

The basic idea is to start with the A.I.D.S. model and apply it to the European tourist market by using a simple two-goods model: “tourist goods and services” and “other goods and services”. In this way it will be possible to highlight the elasticity of expenditure and prices, the elasticity of substitution and to carry out some tests, including a homotheticity test, on the demand theory.

The system is thus composed of only two equations: the first expresses the tourist demand function, while the second expresses the demand for general consumer goods.

Naturally, there are very strong assumptions attached to a formulation like this. In particular, if European demand is considered apart from international tourism, it should be possible to separate European demand from tourist demand for all the alternative destinations. However this does not seem feasible at least as far as internal tourism is concerned. As a result of inadequate statistical information this separation would then need to be extended to transport expenditure. In reality, it is well known that transport constitutes a significant element of the overall cost of a holiday.

As we have already seen since there are only two equations, an estimation of the model can also be limited to the tourist demand function.

Thus, an estimation of the model (4.1) can be carried out separately for the tourist flow of every individual European country of origin and by considering the overall European market. In the first case, the dependent variable (w) is made up of the share of tourist expenditure of the individual countries compared to either the total consumer expenditure or the total income (x) of these countries, while in the second case the dependent variable is made up of the share of total tourist expenditure in western Europe compared to its total consumer expenditure.

Chapter Five

Empirical Analysis (Part 2)

The aim of this chapter is to present the results of the estimates of the model using different techniques. First an OLS estimate was used. Bearing in mind that there are exogenous shocks (for instance a rise or decline in the exchange rate) that affect all countries simultaneously we also performed a SURE/ML estimate to take into account the fact that disturbances might be correlated across equations. A further step was then made to take into account the fact that variables might be non-stationary. The tests for stationarity suggest that our variables may be integrated of order one, thus a cointegration analysis was carried out.

This chapter is divided into four parts. The first provides a description of the data set. The second shows the estimation and the comparison of the results obtained using an OLS estimation and an iterative SURE/ML (equivalent 3SLS) estimation. The third provides further exploitation of the data set, using some cointegration techniques. A description and a comment of the obtained results conclude this chapter.

5.1 Data set

The data series used in this study includes 13 European countries from 1975 to 1992. Due to previous assumptions, it was possible to concentrate attention on the estimation of one of the two equations of the model since, in a two-good system, the result for the excluded equation is straightforward.

The AIDS model yields demand functions which, for this study, represent the share of international tourism expenditure on total expenditure for 13 European countries as a function of prices (for tourism and manufactured goods) and total real expenditure.

The variables are defined as follows:

- For *tourism expenditure*, the variables are expressed in US\$ and collected by the WTO (World Tourism Organisation). As many authors have pointed out, these statistics sometimes suffer from internal incoherence. Since it is possible to get the expenditure of country *n* towards country *m* and the receipt of country *m* from country *n*, having considered the difference in terms of exchange rate, these two amounts should not differ. Unfortunately this is not the case; the explanation being found in the different ways national authorities collect statistical data. A different approach to re-building the expenditure through the receipts of each country (that are usually more reliable) was tried but unsuccessfully.

- The *total expenditure* is the total consumption in nominal US\$ (source IMF).

- As a proxy for the price of manufactured goods the *consumer price index* (source IMF) has been adopted.

- Finally, the construction of a suitable series for tourism prices was difficult for two reasons. At first a series of tourism prices in national currency for as many destination countries as possible was constructed. Then, since this chapter deals with the prices that consumers of each country have to face, a different price series for each country had to be established. The price in national currency for all destination countries comes from Carraro C. and M. Manente (1994). The second step involved constructing a price series for each origin country. An origin/destination matrix of tourism flows can be built with WTO sources. In other words it is possible to know exactly where British, Italians or Germans go on holiday. Unfortunately, while the origin/destination could be quite disaggregated, the internal price for tourism is not. This means that in order to have a suitable series, two main assumptions should be made: first, every consumer spends the same amount of money in country *n* regardless of the country of origin; second, a price series built by taking into account only a part of the "real" travellers for each country is an acceptable proxy.

5.2 SURE/ML

In the absence of cross-equation restrictions, the estimation of Eq. (4.1), which corresponds to a representation of long-run preferences, could be made using ordinary least squares (OLS) on individual equations. However, in order to take into account that exogenous shocks could exist that affect all the countries and thus disturbances could be correlated across the equations, Eq. (4.1) was also estimated using a SURE estimator. As we have to drop one equation for each country because of the singularity of the model, we chose an iterative SURE estimation as it converges to a maximum likelihood (ML) estimation, which is independent from the equation that has been omitted. We should also note that the SURE estimator is a particular 3SLS estimator, i.e. the SURE estimator is the 3SLS estimator when the matrix of the endogenous variables of the structural model is (block) diagonal. We decided to use an equivalent 3SLS estimator for GLS as the appropriate estimation when disturbances are correlated across equations. This leads to more efficient estimates of the parameters. The results for both estimations are reported in Table 6.

Table 6
 OLS and SURE estimations
 sample period 1975-1992

	OLS Regressions							iterative SURE estimation					
	Const	beta1	beta2	SER	R-square	D.W.	DF (2 lags)	Const	beta1	beta2	EE (1)	TE (2)	ES (3)
AUSTRIA	-0.067 (-0,019)	-0.061 (0,032)	0.067 (0,009)	0.005	0.792	0.767	-1.990	-0.029 (0,012)	-0.052 (0,005)	0.049 (0,005)	1.66 (0,073)	-1.70 (0,072)	0.24 (0,078)
BELGIUM	-0.089 (0,023)	-0.001 (0,009)	0.037 (0,006)	0.002	0.750	1.380	-3.820	-0.104 (0,001)	-0.015 (0,001)	0.041 (0,001)	1.99 (0,033)	-1.36 (0,032)	0.62 (0,037)
DENMARK	-0.102 (0,021)	0.043 (0,017)	0.106 (0,015)	0.004	0.735	0.929	-3.410	-0.101 (0,001)	0.038 (0,002)	0.105 (0,001)	3.39 (0,028)	-0.14 (0,050)	1.90 (0,052)
FRANCE	-0.011 (0,012)	-0.009 (0,009)	0.008 (0,003)	0.001	0.177	0.975	-1.800	-0.014 (0,001)	-0.001 (0,000)	0.009 (0,000)	1.54 (0,019)	-1.07 (0,013)	0.93 (0,013)
GERMANY	0.090 (0,019)	0.009 (0,01)	-0.020 (0,008)	0.003	0.327	0.608	-2.150	0.087 (0,002)	0.015 (0,001)	-0.019 (0,000)	0.52 (0,023)	-0.61 (0,039)	1.40 (0,040)
GREECE	-0.196 (0,040)	0.023 (0,015)	0.050 (0,009)	0.003	0.770	0.953	-2.950	-0.231 (0,004)	0.004 (0,002)	0.058 (0,000)	5.17 (0,071)	-1.26 (0,143)	0.74 (0,145)
ITALY	-0.019 (0,011)	-0.002 (0,013)	0.016 (0,006)	0.003	0.651	1.036	-1.820	-0.032 (0,004)	-0.002 (0,001)	0.023 (0,002)	3.31 (0,239)	-2.99 (0,152)	0.80 (0,153)
NETHERLANDS	0.009 (0,007)	0.008 (0,006)	0.035 (0,007)	0.003	0.687	0.836	-3.460	0.008 (0,003)	-0.0003 (0,001)	0.036 (0,003)	1.84 (0,066)	-1.01 (0,028)	0.99 (0,029)
PORTUGAL	-0.031 (0,015)	0.004 (0,007)	0.013 (0,004)	0.003	0.358	1.543	-5.140	-0.025 (0,008)	-0.012 (0,001)	0.011 (0,002)	1.66 (0,112)	-1.72 (0,083)	0.27 (0,084)
U.K.	-0.010 (0,002)	-0.010 (0,003)	0.031 (0,002)	0.001	0.955	2.395	-3.510	-0.011 (0,000)	-0.010 (0,000)	0.031 (0,000)	2.37 (0,214)	-1.44 (0,033)	0.55 (0,034)
SPAIN	-0.154 (0,018)	0.012 (0,005)	0.029 (0,003)	0.001	0.936	1.506	-2.860	-0.175 (0,004)	0.019 (0,000)	0.033 (0,000)	4.28 (0,079)	0.92 (0,022)	2.94 (0,022)
SWITZERLAND	0.009 (0,004)	-0.012 (0,150)	0.065 (0,008)	0.002	0.871	0.611	-1.960	0.018 (0,001)	-0.015 (0,000)	0.046 (0,002)	2.20 (0,064)	-1.40 (0,017)	0.59 (0,017)
TURKEY	0.020 (0,038)	0.006 (0,003)	-0.002 (0,005)	0.003	0.143	0.845	-3.660	0.026 (0,002)	0.003 (0,000)	-0.003 (0,000)	0.69 (0,029)	-0.68 (0,024)	1.32 (0,024)

Log of likelihood function 1418

Number of observation 18

For the single-equation estimation, the table reports usual the statistics (SER, DW, R-square). For the SURE/ML estimation, the table reports the SERs on every coefficient and some tests on the whole model.

If we compare the results we can observe that some coefficients differ significantly depending on the estimation method used⁵⁸ and that the standard errors of the SURE/ML estimates are smaller than OLS ones. This seems to suggest that the disturbances' variance-covariance matrix is not diagonal and thus a generalised least square approach is appropriate. However, we have to note that the variations in the estimated coefficients are very large and this seems to suggest that the non-stationarity of variables dramatically affects estimation. In the next section we will carry out a cointegration analysis to take explicitly into account the non-stationarity issue.

5.3 Cointegration

This section presents a different way of exploiting the same data set using a different technique. However, the purpose of the econometric analysis is still the same. We need to obtain estimates of the long run relationship between the share of tourism expenditure and the relative price of the tourist bundle and total real expenditure.

The visual inspection of our variables (Figure 9) suggests that they are non-stationary. In addition, many of the variables show significant structural breaks, especially with respect to shares and the relative price of tourism. Non-stationarity prevents us from using known asymptotic distributions for inference and causes spurious correlation. Cointegration provides an appropriate framework to test and estimate a long-run equilibrium among non-stationary variables⁵⁹, even in the presence of structural breaks⁶⁰, as differencing the

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For instance, in Table 5 the coefficient β_{11} for Belgium is 15 times greater when estimated using SURE/ML than using OLS.

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variables to avoid the spurious regression problem will remove any long run information. A key underlying assumption to this approach is that all variables are integrated of order one. The visual presupposition of non-stationarity was confirmed in standard Dickey-Fuller, Augmented Dickey-Fuller and Philipps-Perron tests⁶¹.

An alternative dynamic specification that can be used when variables are I(1) is the one used by Anderson and Blundell (1983). Their study on consumer expenditure considers a dynamic singular equation system. If we indicate the optimal level of shares with w_t^ , then a dynamic ADL(1,1) model for w_t (actual values) can be written as follows:*

$$w_t = Aw_t^* + Bw_{t-1}^* + Cw_{t-1} \quad (1)$$

If the restrictions $A+B+C=I$ (identity matrix) are valid, then Eq.1 can be reparametrized as an equivalent Generalised Error Correction Mechanism

$$\Delta w_t = M\Delta w_t^* + K(w_{t-1}^* - w_{t-1}) + \varepsilon_t \quad (2)$$

with $M=A$ and $K=I-C=M+B$.

Because of the singularity of the variance/covariance matrix, one equation should be deleted in order to estimate the system. Furthermore, since this study is dealing with a two-goods model, Eq.2 then simply takes the following form:

$$\Delta w_t = m\Delta w_t^* + k(w_{t-1}^* - w_{t-1}) + \varepsilon_t \quad (3)$$

where both m (control parameter) and k (proportional coefficient) are scalars and represent the parameters in the Error Correction. Eq. 3 offers a convenient interpretation: consumers adjust w_t in response to changes in the target and accounting for the previous disequilibrium.

There are two ways of estimating Eq. 3. The first one uses the Engle-Granger two stage approach. In this case the fitted values and the residuals of the cointegrating regression could be used to replace the terms Δw_t^* and $(w_{t-1}^* - w_{t-1})$ in Eq. 1. Only 2 parameters (m and k) are estimated. In the second approach all the parameters of Eq. 3 could be estimated in one step, in a non-restricted form. By combining eq. 5.13 in the text and eq. 3 above, the following estimable form can be used:

$$\Delta w_{1,t} = m((\gamma_{11}\Delta \log(p_{1,t}) + \beta_1\Delta \log(x/P^*)_{1,t}) + \quad (4)$$

$$+ k(w_{1,(t-1)} - \alpha_1 - \gamma_{11}\log(p_{1,(t-1)}) - \beta_1\log(x/P^*)_{1,(t-1)}) + \varepsilon_t$$

However, due to the overparametrisation, it is difficult to estimate eq. 4 in the case of small samples.

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It is important to note that in the light of the small number of time periods available ($T=18$), the validity of the cointegrating relationships and the robustness of the endogenous break dates procedure are reported in Lanza A. and Urga G., (1996).

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However, in addition to non-stationarity, many variables present significant structural breaks, especially with respect to the share of tourism expenditure, and the relative price of tourism. The presence of such breaks biases tests for a unit root in favour of acceptance⁶². In order to consider the possibility of a structural break, we utilise the sequential structural break procedure recently proposed by Banerjee and Urga (1995). It operates within the framework of sequential tests, where the break date is not imposed *a priori* but is endogenised.

As a result of these tests, it is possible to conclude that all variables are I(1), with drift, trends, and break dates, when significant, as reported in Table 7. The Johansen maximum likelihood estimation procedure was used to test the presence of cointegrating relationships among the our set of variables⁶³. The error correction mechanism (ECM) reparametrisation of a vector auto-regression (VAR) with two lags was sufficient to ensure that residuals are normal white noise⁶⁴. The likelihood ratio test statistics for the determination of the cointegration rank of each P of the VARs in each country are also given in Table 7. It also reports the LR-test both for the maximum eigenvalue statistics⁶⁵, calculated as $-T \ln(1-m)$,

Tests of the ADF type include higher order lagged terms to whiten the error in order to take into account that the data generating process could be AR(p), $p > 1$. Instead of adding extra terms to the regression model, the test proposed by Phillips and Perron undertakes a non-parametric correction to the t-test to account for the autocorrelation when the process is not AR(1).

⁶²

It has been proved that in finite samples there are generally problems with the power of the standard tests for unit roots as they are biased towards acceptance of the null hypothesis.

⁶³

Generally speaking, if we want to estimate a cointegrating vector using the static model

$$\mathbf{a}' \mathbf{x}_t = u_t$$

a static OLS regression, which is the first step of the Engle-Granger two-step estimator, provides a good approximation of the true cointegrating vector. The test proposed by Engle-Granger is a test for the presence of unit roots in the residuals of the static regression. However, dynamic regression methods are preferred to correct for finite sample biases.

⁶⁴

It is useful to underline that when a cointegration relationship exists, the representation using variables in levels and the ECM reparametrisation of the model are equivalent with respect to the validity of the asymptotic theory.

⁶⁵

This test is used to verify the existence of r cointegrating vectors when at most $(r+1)$ of them exist and is based on the $(r+1)$ th eigenvalue.

where m is the eigenvalue of the $(r+1)$ th cointegrating vector when r cointegrating vectors exist, and for the Trace statistics⁶⁶, calculated as $-T \sum_{i=r+1}^n \ln(1 - m_i)$. Finally, it can be seen that the hypothesis of a single cointegrating vector is accepted at 95% for 7 countries and 5 cases at 90% when we consider the m statistics, while no cointegration appears for Turkey. The Trace statistics lead us to accept one cointegrating vector at 95% in 8 cases and 5 cases at 90%. We can conclude then that both tests enable us to accept at least one cointegrating vector for all countries but Turkey.

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The distribution of the test statistics is non-standard and is tabulated in Johansen (1988) under the hypothesis of r cointegrating relationships.

FIGURE 9

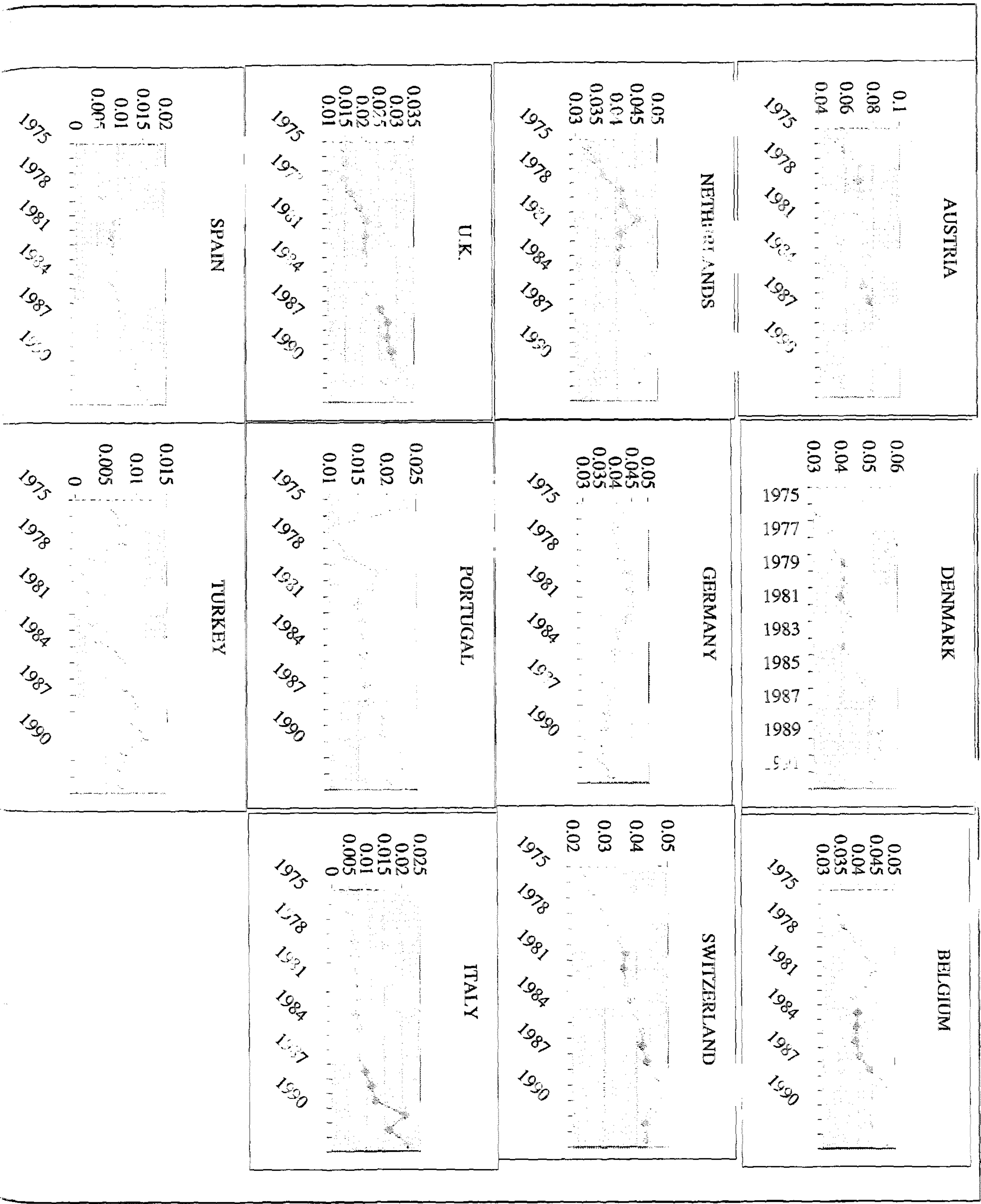


Table 7
 Cointegration Analysis 1977 to 1992
 Johansen maximum likelihood procedure
 H:rank=0 vs. rank=1

	-Tln(l-m)	95%	-TS(l-m)	95%	m	loglik for rank 1
AUSTRIA	22.73*	23.8	34.24**	34.6	0.76	230.06
BELGIUM	21.13*	21	37.02**	29.7	0.73	244.65
DENMARK	21.89*	21	31.48*	29.7	0.75	233.64
FRANCE	23.94*	23.8	39.14**	34.6	0.7	252.71
GERMANY	48.31**	23.8	90.04**	34.6	0.95	266.53
GREECE	28.31**	21	34.51*	29.7	0.83	241.83
ITALY	39.66**	21	43.72**	29.7	0.92	247.53
NETHERLANDS	28.65*	23.8	50.63**	34.6	0.83	229.12
PORTUGAL	36.69**	23.8	60.36**	34.6	0.9	245.62
U.K.	28.11**	21	42.56**	29.7	0.83	232.7
SPAIN	33.14**	21	48.96**	29.7	0.87	268.15
SWITZERLAND	46.69**	21	74.10**	29.7	0.95	265.27
TURKEY	16.52	21	32.89**	29.7	0.64	184.79

Table 8 reports the cointegrating vectors in the first two columns, reflecting the negative relationship between shares and the real price of tourism, and a positive relationship between shares and real income.

Tables 7 and 8 can be used to compute the long run elasticities (own price, expenditure, and substitution), and these are reported in Table 9. In general, there is evidence of a strong negative correlation between shares and relative price of tourism, and a strong positive relation between shares and real expenditure. All results are statistically robust.

The absence of a negative expenditure elasticity indicates that there is not a single country in which international tourism is considered an inferior good. Furthermore, values greater than one were found in all countries. Consequently we can conclude that international tourism is a luxury good for consumers in industrialised countries. Therefore, a non-homothetic utility function would be appropriate for all of the countries: the demand for international tourism grows more than proportionally with respect to an increase of the total expenditure over the ranges observed.

Finally, the estimates of the long run elasticity of substitution are all below one, although those of Belgium, Denmark and Germany are not statistically different from one.

The elasticity of substitution differs across countries. In their determination, domestic circumstances as well as the relative importance of the domestic tourism market play a crucial role. However there is a regularity that deserves some attention: the more the country is a tourist destination the less is the elasticity of substitution (France, Italy, Greece, Austria). This could reflect the higher propensity for the population of these countries to choose an international destination, instead of a domestic one.

TABLE 8
 Cointegration analysis 1977 to 1992
 Johansen maximum likelihood procedure
 (Order of VAR=2)

	p (i)	mr (ii)	dummy/ies (iii)	trend (iv)
Austria	-0.06	0.28	1980	yes
Belgium	-0.005	0.05	1991	no
Denmark	-0.005	0.08	1982	no
France	-0.013	0.05	1983	yes
Germany	-0.001	0.04	1980, 1990	yes
Greece	-0.011	0.04	1980, 1987, 1990	no
Italy	-0.007	0.02	1980, 1990	no
Netherland	-0.027	0.08	1984, 1989	yes
Portugal	-0.009	0.01	none	yes
U.K.	-0.014	0.03	none	no
Spain	-0.002	0.03	1980, 1987	no
Switzerlan	-0.023	0.08	1986, 1990, 1991	no
Turkey	-0.0054	0.04	1978	no

Table 9
Estimated Elasticities

	Price	Expenditure	Substitution
	(i)	(ii)	(iii)
Austria	-1.8	4.76	0.13
Belgium	-1.11	2.2	0.88
Denmark	-1.11	2.76	0.88
France	-1.82	4.02	0.17
Germany	-1.03	1.98	0.97
Greece	-1.8	4.09	0.19
Italy	-1.72	2.63	0.28
Netherland	-1.63	2.84	0.34
Portugal	-1.52	1.75	0.47
U.K.	-1.62	2.37	0.37
Spain	-1.21	3.63	0.79
Switzerlan	-1.6	3.15	0.37
Turkey	-1.8	7.36	0.19

5.4 Main results

The chosen model seems to be in reasonable accord with the empirical results. We have already observed that a non-homothetic utility function would be appropriate for all the countries: since the demand for international tourism grows more than proportionally with respect to an increase in total expenditure.

It should be noticed that this occurs both in countries with a low level of international tourism expenditure and in countries where the share of tourism expenditure is high. It is important to underline the inverse relation between expenditure shares for tourism and the expenditure elasticity because this could be seen as an indirect confirmation of the life cycle concept applied to the tourism sector. Nevertheless the coefficients guarantee an expenditure elasticity higher than one, ensuring that international tourism remains a luxury good also in presence of a (relative) high share of expenditure.

The average expenditure elasticity is quite high. As far as the author is aware there are no other published estimates that are comparable to those reported in this study. However it should be mentioned that Crouch G.I. and R.N. Shaw (1992) report an average expenditure elasticity based on 777 different estimates around 1.8.

Economic policy has recently favoured the development of tourism as a means of combating unemployment. The implications of increased specialisation in tourist activities from the perspective of long run economic development, however, has not been explored significantly. Understanding this relationship is important because the potential for productivity growth is less in a sector such as tourism than it is in manufacturing. This chapter has explored this possibility by using the endogenous growth model for a small open economy developed by Lucas (1988).

It is suggested that even if the potential for productivity growth in tourist activities is poorer than in other sectors, the growth of real incomes may be supported in economies specialising in tourism by a shift of the terms of trade in their favour. Whether

specialisation in tourism is detrimental to real income growth depends upon the empirical question of the magnitude of the elasticity of substitution between tourism and other goods. Accordingly, the empirical part focused upon the estimation of relevant long run elasticities using an AIDS characterisation of a two sector model and cointegration techniques.

The econometric analysis of 13 economies suggested that, in addition to considerable price elasticity, the demand for tourism was very elastic with respect to income. Significantly the elasticities of substitution for all the economies were estimated to be lower than one in all of the economies, and in nine significantly so.

Does this last result mean that the terms of trade effect will be sufficient to outweigh the impact of lower productivity growth in tourism? One should be wary of uncritically accepting such a result. It should certainly be recognised that the implications may be of a very long run nature. Over shorter periods of time, the existence of unemployment may make the terms of trade inflexible. Over longer periods of time, new sources of competition for tourists are being developed outside the group of economies considered. Finally, it needs to be recognised that patterns of specialisation are not immutable, and that sufficiently strong terms of trade effects in some instances may induce some switching of specialisation away from manufacturing. Nevertheless, the econometric evidence suggests that the terms of trade effect may be a strong one, and needs to be considered when evaluating the long run growth prospects of regions specialising in tourism.

Chapter Six

Further research directions: the role of environmental quality

6.1 Introduction

Up to the present, we have reached the conclusion that under some conditions tourism specialisation may not be detrimental to economic growth. We have argued this conclusion, showing a theoretical model derived by Lucas (1988) along with different empirical considerations. In this chapter further implications related to different environmental policies are discussed. Once a country has decided that discussed. tourism specialisation is feasible, attention should be focused on the quality of the environment and the level of prices. In principle, a specific country could decide to offer a destination with high environmental quality (and high prices) or a destination with lower environmental quality (and lower prices). This strategic decision is related to the long-run income path and should be addressed very carefully.

This chapter discusses a model that allows for the definition of different income paths related to differences in the environmental quality supplied. Although this chapter constitutes the most original piece of research in this thesis due to the absence of an empirical investigation, it is included as a direction for further research.

Before introducing the model, it is useful to summarise the main issues raised in previous chapters.

6.2. Main conclusions

The main question addressed throughout the thesis is the following: what are the consequences of specialising in tourism on the growth performance of a small economy? We have considered a two-sector economy, where growth is driven by the accumulation of sector-specific human capital. The two sectors differ in the associated rate of potential learning. We can think of the low- (no-) learning sector as Tourism, the other being Manufacturing. The condition for balanced growth under complete specialisation in the presence of homothetic preferences are those spelled out in Lucas (1988). As long as the terms of trade move in favour of Tourism at a rate rapid enough to offset the difference in the sector-specific productivity growth rates, balanced growth is obtained. With homothetic utility functions, balanced growth implies an elasticity of substitution equal to one; lower values make specialisation in the slow growing sector beneficial.

The results of this approach are rather promising for economies characterised by a comparative advantage in the tourist sector -- at least as long as the elasticity of substitution between tourism and other goods produced under decreasing costs is low. However, this result is based on a characterisation of the demand side that ignores an important feature of the market for tourist services: the income elasticity of the tourist "good" may be other than one; moreover, in a competitive environment the value of the income elasticity for this good might be linked to the quality (and therefore to the rate of exploitation) of the associated natural resources. To take these hypotheses into account, conditions for balanced growth should be redefined under some non (quasi) homothetic utility function.

6.3 Environmental quality

Having addressed the effect of tourism specialisation on economic growth a second question can be addressed: namely when tourism specialisation is based upon natural resources how may changes in the quality of the natural resources affect the relationship between specialisation and growth?

Our starting point would be as follows: suppose that consumers allocate a constant share of their (increasing) income for financing their holidays. Two different types of tourist goods exist: the first based on natural resources and the second on other activities unrelated to natural resources and supplied at decreasing costs. Then lowering the quality of the natural resources of a country may weaken the capacity of this country's tourist sector to retain a non-decreasing share of the market.

Our attempt to rationalise this idea will be based on the hypothesis that the two tourist goods are vertically differentiated in the following sense -- at high quality levels of the natural resources, the associated tourist services represent a luxury good. Quality, however, depends on the rate of exploitation. Lowering the quality lessens the value of luxury good attached to the resource-based good. Coming closer to a quality level where the resource based good is no longer a luxury good implies that preferences becomes more homothetic. With homothetic preferences and the existence of a close substitute supplied at decreasing costs, the market share for the resource-based good declines unless its price declines at the same rate as competitors.

This framework should allow us to describe the relationship between the rate of exploitation of the natural resources and the conditions allowing economies specialised in tourism to reach a balanced growth path, in a market where more than one tourist good is offered.

In more formal terms we now examine: i) how the expenditure in the tourist sector is shared between quality-differentiated tourist goods, and ii) what is the relationship

between this subdivision and the level of per-capita expenditure on the tourist sector, which is non-decreasing, as shown in the Lucas model.

Our proposal is to evaluate how the growth rate and the income level of a small economy specialised in tourism may vary according to the quality of the tourist good it chooses to supply.

The difference in quality is based on some negative relationship between quality and some index of exploitation of a natural resource. Following the term used in the literature, we define our tourist goods as "snob" good. The explanation of this assumption is as follows: consider a resort attached to a natural attraction such as a beach. The quality and the quantity of per-capita services available to tourists could be reasonably considered invariant to the resort's scale. The goods are differentiated only by the per-capita availability of the natural resource, which in turn depends on the number of tourists allowed to stay there. Obviously preferences are such that more of the natural resource is preferred to less.

This setting offers a reasonable definition of quality: as perceived by all consumers, quality simply coincides with some index of per-capita resource availability. As a consequence, each resort faces a downward sloping relationship between "quality" and its tourist population. Formally, we define the quality index α as a function of T , an index of crowding, given by the ratio of the tourist population to the size of the beach

(say, Q^*/S)⁶⁷; assume that $\alpha(T)$ takes the following specific form:

$$\bar{\alpha}(T) = \delta T^{-\beta} \quad \beta, \delta > 0 \quad (6.1)$$

where $-\beta = \varepsilon_{\bar{\alpha}T}$, the elasticity of perceived quality with respect to crowding.

⁶⁷ This setting is consistent with some examples in the literature on sustainable development (Barbier and Markandya, 1989). In this literature a link between dS/dt , the rate of environmental degradation and dX/dt , the rate at which environmental quality is changing over time is usually established - the basic relation being $dX/dt = -a (dS/dt)$

As for the functional form of the consumers' preferences at the world level, we propose to model them as non-homothetic, so that higher-quality resorts are "luxuries" and lower-quality ones are "necessities", and we can describe how the expenditure shares (and the relative price of the two tourist goods) change as economic growth in manufacturing continuously increases the consumers' real income.

Under this approach, each consumer is supposed to buy all kinds of tourist goods available in the marketplace, in proportions that depend on both prices and income (i.e. prices and income determine how tourists allocate their annual holidays between higher and lower quality resorts).

To simplify the following analysis, a number of assumptions are needed. The main one is that only two tourist goods are supplied - "crowded" and "luxury" resorts of similar natural endowments. Furthermore, they are supplied at zero cost. The advantage of this assumption is that it allows working with a simple quasi homothetic utility function of the Stone-Geary type. The drawback is that the description of the relationship between quality and quantity becomes sketchy - the choice of tourist population for our hypothetical resorts is limited to two exogenous quantity indexes (say \bar{T}_1 and \bar{T}_2 for "crowded" and "luxury" resorts, respectively). However, the main results do not depend on this assumption.

In this simplified setting, a small economy's total revenue from tourism is either $R_1 \equiv p_1 \bar{T}_1 S$ or $R_2 \equiv p_2 \bar{T}_2 S$, where S is the exogenous size of the natural resource; costs associated with the supply of the tourism good are assumed to be zero. Then to evaluate how the growth rate and the income level of this economy are affected by the quality of its tourist good, the main step is to describe how the international relative price p_2 / p_1 is determined at the world level, and how changes in the non decreasing real per capita income affect it.

6.3.1 The determination of the international price

International preferences for the two goods take the form of a Stone-Geary quasi-homothetic utility function:

$$U(Q_1, Q_2) = (Q_1 - \gamma_1)^{\alpha_1} Q_2^{\alpha_2} \quad (6.2)$$

$$0 < \alpha_1 < \alpha_2 < 1, \alpha_1 + \alpha_2 = 1, \gamma_1 > 0$$

where α_1 and α_2 are the above defined quality indexes. More precisely, $\alpha \equiv \bar{\alpha}_i / (\bar{\alpha}_i + \bar{\alpha}_j)$, so that $\bar{\alpha}_i + \bar{\alpha}_j = 1$, and both the constraints required by utility functions are satisfied; γ_1 characterises good 1 as the "necessity". The budget constraint y is defined by the expenditure on tourist services as we have seen in the Lucas model.

Now consider the FOCs for the solution of this problem:

$$\begin{cases} \alpha_1 (Q_1 - \gamma_1)^{\alpha_1 - 1} Q_2^{\alpha_2} = \lambda p_1 \\ \alpha_2 (Q_1 - \gamma_1)^{\alpha_1} Q_2^{\alpha_2 - 1} = \lambda p_2 \\ y - p_1 Q_1 - p_2 Q_2 = 0 \end{cases} \quad (6.3)$$

The demands for the two goods are:

$$\begin{aligned} Q_1 &= \gamma_1 + \alpha_1 (y / p_1 - \gamma_1) = \gamma_1 (1 - \alpha_1) + \alpha_1 y / p_1 \\ Q_2 &= \alpha_2 ((y - p_1 \gamma_1) / p_2) = -\alpha_2 \gamma_1 p_1 / p_2 + \alpha_2 y / p_2 \end{aligned} \quad (6.4)$$

To define how p_2 / p_1 changes as real income increases, first consider the ratio of the expenditure share of good 2 to that of good 1:

$$\frac{p_2 Q_2}{p_1 Q_1} = \frac{(-\alpha_2 \gamma_1 p_1 / y + \alpha_2)}{(\gamma_1 (1 - \alpha_1) p_1 / y + \alpha_1)} \quad (6.5)$$

For finite values of y / p_1 , $\delta(\bullet) / \delta(y / p_1) > 0$, where (\bullet) stands for the share defined by equation (6.5).

Increases in $\frac{p_2 Q_2}{p_1 Q_1}$ can be decomposed to show that

$$\frac{\dot{Q}_1}{Q_1} - \frac{\dot{Q}_2}{Q_2} \geq 0 \Rightarrow \frac{\dot{p}_2}{p_2} - \frac{\dot{p}_1}{p_1} > 0 \quad (6.6)$$

This means that the relative value of the high-quality good is increasing in real income as long as its supply does not grow faster than the supply of the low-quality good.

Now consider the limit of equation (6.5).

$$\lim_{y/p_1 \rightarrow \infty} (p_2 Q_2 / p_1 Q_1) = \alpha_2 / \alpha_1 \quad (6.7)$$

To sum up: i) under reasonable assumptions regarding the relative growth rate of the two supplies, the relative price of the high-quality good is increasing in real income; this is true only for finite values of the latter; ii) as y / p_1 grows over time, the ratio of the two shares approaches a constant value defined by the ratio of the quality indexes α_2 / α_1 .

6.3.2 Implications for a small economy specialised in tourism

Given this determination of the international price, we can now turn to discuss the implications for a small economy specialised in tourism, endowed with a natural resource of size S . First, total revenue for a small economy specialised in tourism is

$$R_i \equiv p_i \bar{T}_i S \quad (i=1,2), \text{ so that } \dot{R}_2 / R_2 - \dot{R}_1 / R_1 = \dot{p}_2 / p_2 - \dot{p}_1 / p_1$$

Thus, for this economy, the growth rates achieved by specialising in the high-quality tourist good are higher than those associated with the low-quality good (for finite value of y / p_1). In the long run the two growth rates may converge as $y / p_1 \rightarrow \infty$). This outcome about relative growth rates does not suggest, however, that specialisation in the high quality good is always the best choice for a small economy.

Consider the system in the proximity of its limit as described by equation (6.7); assume further that the supply Q_1, Q_2 are now either fixed or share a common growth rate, so that the relative price is constant at $(\alpha_2 Q_1 / \alpha_1 Q_2)$; then it is entirely possible that the faster growth path associated with good 2 actually leads to a steady-state relative income level favourable to specialisation in good 1. Therefore a more detailed analysis of the long-run value of the annual relative total revenue accruing from tourism is required.

Using equation (6.7) the function for relative total revenue can be defined as

$$\frac{R_2}{R_1} = \frac{p_2 \bar{T}_2}{p_1 \bar{T}_1} = \frac{\alpha_2 Q_1 \bar{T}_2}{\alpha_1 Q_2 \bar{T}_1} \quad (6.8)$$

This equation simply says that if $\frac{\bar{T}_1}{\bar{T}_2} > \frac{\alpha_2 Q_1}{\alpha_1 Q_2}$ then the flow of total revenue is

maximised by specialisation in good 1. However, since the function $\alpha(T)$ is defined, we

can be more precise than this. Substituting equation (6.1) into equation (6.8), we get:

$$\frac{R_2}{R_1} = \left(\frac{\bar{T}_2}{\bar{T}_1} \right)^{1-\beta} \frac{Q_1}{Q_2} \quad (6.9)$$

The value of β is therefore crucial. Since $\beta = |\varepsilon_{\alpha T}|$ our results show that if

$\beta = |\varepsilon_{\alpha T}| \geq 1$ in the relevant range, then $Q_1 > Q_2$ represents a sufficient condition for

the total revenue associated with specialisation in good 2 to be larger than that

associated with specialisation in good 1.

Everything hinges on the elasticity of the perceived quality with respect to increases in

the intensity of use of the natural resource. *Ceteris paribus*, the annual income accruing

from the tourist exploitation of the resource is more likely to be maximised by a

"luxury" resort the more consumers are sensitive to quality variations (a flat $\bar{\alpha}(T)$

curve would make specialisation in the low-quality good more remunerative).

Notice that this conclusion applies to any two values of T , so that we can easily identify

the value that maximises total revenue globally.

So far we have reached two conclusions. The first derives from the analysis of the

changes of the relative shares due to increases in real income; i.e. an economy's growth

rate may differ according to the quality of the good supplied.

The second conclusion pertains to a situations where real income is so high that the

expenditure on tourist goods tends to be constant. In this case the long-run level of

relative income may be a function of the kind of specialisation chosen.

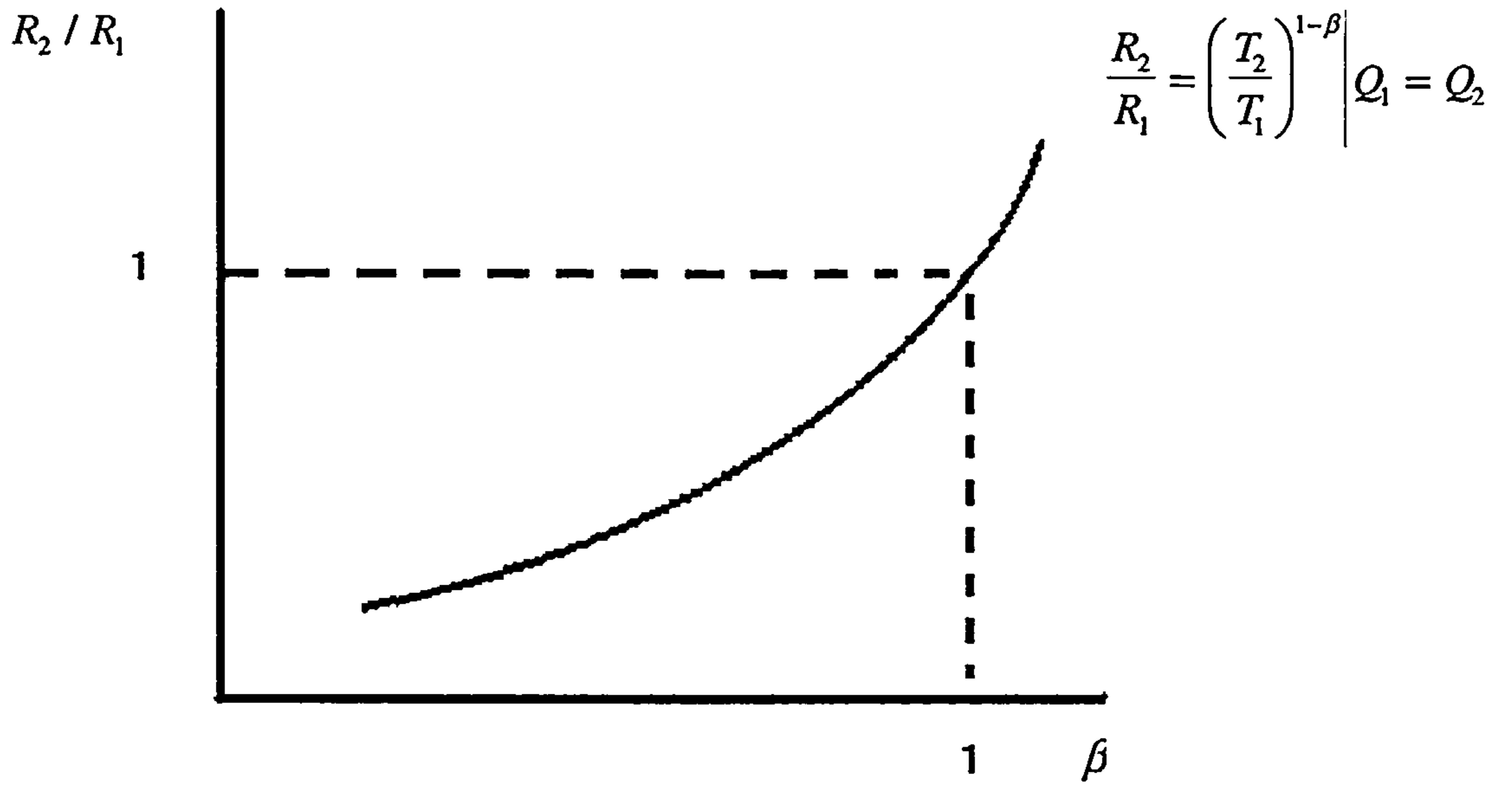
Whether specialisation in good 2 maximises the stream of total revenue accruing over time from natural resource, depends on the value of the elasticity of perceived quality with respect to some index of intensity in the use of the resources and on the value of the ratio Q_1 / Q_2 .

A simple interpretation of this second result is as follows. In the case of a small-country, each country could sell, by definition, any desired amount of its services for a given international price (i.e., each country faces a horizontal demand curve for any good of a given quality). However, the presence of a quality-crowding trade-off does introduce a negative relationship between quantities and prices from the viewpoint of small countries. In other words, these countries face downward sloping demand curves exclusively because of the consumers' reaction to the worsening of quality due to crowding.

With such a demand curve each resort or country faces the monopolist's profit maximising problem. So, our result fits the general case: if the price elasticity is less than one, total revenue as well as profits are maximised by reducing supply.

Finally, notice that in equation (6.9) R_2 / R_1 is increasing in β , as shown in Figure 2 (which was drawn for a simple case where $Q_1 = Q_2$). Therefore, changes in the preferences for T_1 and T_2 might make the future maximising quality level different from the current level.

Figure 9: Ratio of revenues as function of quality elasticity



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