Economics of Tourism

Case study on the impact of environmental issues in Malta

A dissertation by Michael Zarb (candidate number 024340234)

BA Business Economics
University of Leicester

Acknowledgements

Like many students, my main concern in commencing this dissertation was that of not finding sufficient, relevant data. In a small country with limited resources such as Malta, and on a topic such as environmental degradation, this risk was heightened. I have found to my delight that what Malta may lack in this respect is amply compensated for by the increased accessibility of its institutions. My thanks go to the Malta Tourism Authority, the National Statistics Office, the Malta Hotels and Restaurants Association, the Central Bank of Malta, Deloitte and others for the co-operation extended to me by various officials who, no doubt, had better things to do with their time.

My special thanks go to my parents for their support and encouragement, and for their patient proof-reading and suggestions on how my material could best be structured. I hope that the end result is a dissertation that 'tells a story' and is more readable.

Michael Zarb
April 2005

Contents

Chapter 1 - Introduction

1.01 Hoteliers argue that Malta's environment has in recent years deteriorated significantly and that this is having a marked negative impact on the tourism industry. There are various indicators supporting this argument.

1.02 An alternative view is that environmental concerns are undeniable but are easy to exaggerate; that declining yields are more a function of over-supply of accommodation and harsher competition from other destinations. One may argue that in any case, negative environmental aspects are a serious problem only for some tourists once these are already on the island; and that therefore such factors do have some impact on repeat business, but are less important when it comes to attracting tourists to Malta in the first place.

1.03 This study investigates the issue from an economic viewpoint. It seeks to assess the overall impacts of environmental issues on Malta's earnings from tourism. In particular, it aims to quantify the extent to which Malta's environment may have deteriorated in the ten year period 1995 to 2004, in those areas of most interest to tourists, and to correlate this factor with the performance of the tourism industry over the same period.

Relevance of the study

1.04 Malta is a small island in which efficient resource allocation is vital. Government has accumulated repeated deficits in recent years, and is under significant pressure to curb expenditure. It is simultaneously under pressure to tackle topics that will require additional

spending, ranging from environment concerns to pension liabilities. The national debate on spending priorities is understandably an animated one. "Social and private benefits and costs must be assessed to assist in the direction of resource allocation. Resources must be allocated to their best use." [1]

1.05 In this scenario, the need for productive investment on environmental related matters may easily be underestimated. The quantification of the need and potential payback is difficult, and often entails a high element of subjectivity.

1.06 Tourism is a material component of Malta's economy. Its earnings in recent years have lagged behind expectations. Long term demand prospects, however, remain strong, with international tourist arrivals in Europe forecast to grow from 414 million in 2004 to 717 million by 2020.[2] Given the country's small size and overall infrastructural limitations, there is therefore an opportunity for recovery and growth dependant on quality of product rather than on volume.

1.07 An essential step in this process is that of understanding the significance of environmental degradation to the quality of Malta's tourism product and to the earnings of the industry.

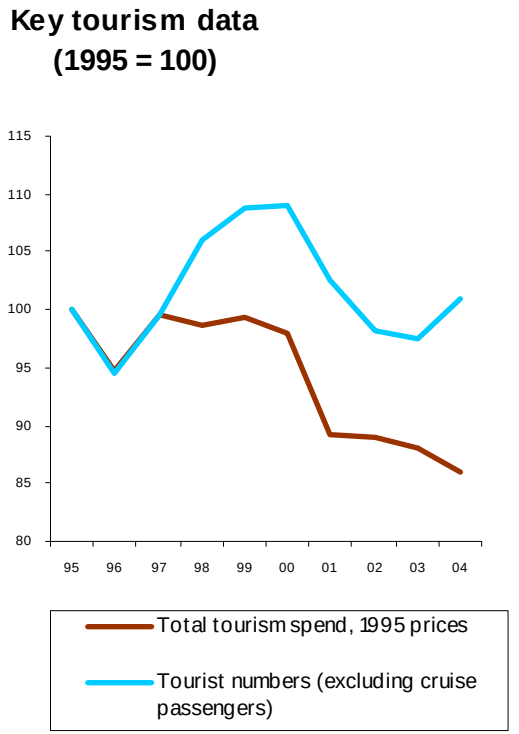
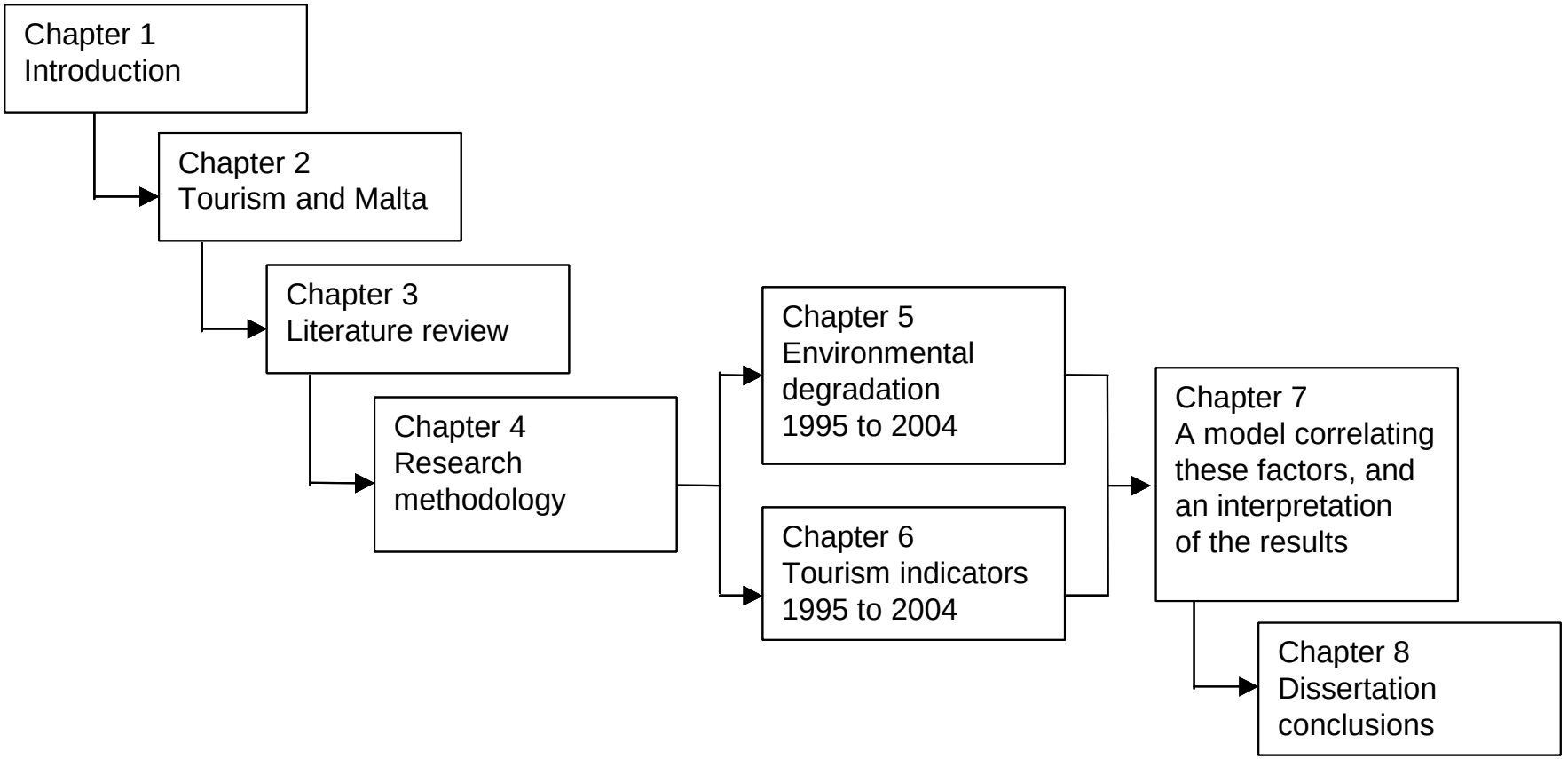


Figure 1 – Real earnings from tourism in decline
Derived from NSO data

[1] MTA (2002)
[2] WTO (2005)

Schematic of the dissertation approach



Chapter 2 – Background information on Malta and its tourism industry

2.01 The two inhabited islands in the Maltese archipelago, Malta and Gozo, together have a land mass of only 316 square kilometres.

2.02 The country has a population of just over 400,000 making Malta by far the most densely populated EU member state. Figure 2 compares Malta to the four countries that are its prime sources of tourism, and to an important tourism competitor, Cyprus. Malta's population density is 14 times that of Cyrus. Malta's land area is 23% built up, compared to under 2% in Cyprus.

2.03 The country has a total workforce of 150,000. As may be expected, agriculture is negligible within the local economy. Industry, on the other hand, occupies a third of the labour force. Major components of this sector include construction, local producers of foodstuffs and beverages, and a sizeable number of foreign owned, export oriented, light industries. These include companies such as ST Microelectronics, Methode, Playmobil, Baxter, De la Rue, and VF among many others.

2.04 The services sector, which employed 99,000 persons in the third quarter of 2004, includes a number of important non-tourism productive components. Foremost among these are the dockyards, transhipment activities at the Freeport, and financial services.

2.05 Malta therefore differs materially from many of the territories it is competing with in the tourism sector. In most Mediterranean islands, agriculture and tourism are the main income earners, and industry is less important. Malta's character differs as well in the physical imprint

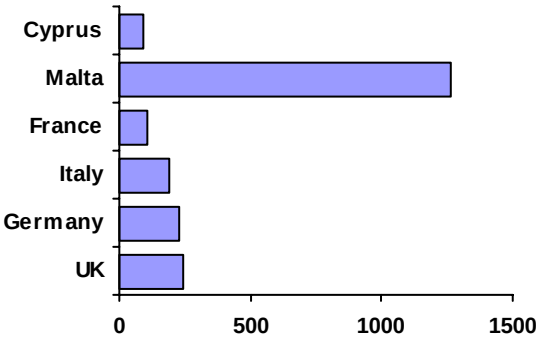


Figure 2 – Population density per square kilometre
Derived from Eurostat data

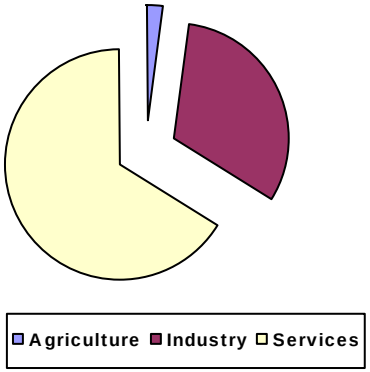


Figure 3 – Employment by sector
Derived from NSO data

left by its history.

2.06 Malta's location and excellent harbours have over the centuries given it a high strategic importance. This was accentuated during its occupation by the Knights of Malta (1530 to 1798), when Malta was at the frontline in the battle against the Ottoman empire; and in the British occupation (1800 to 1964), when Malta was the headquarters of the Mediterranean fleet. During this long period of stability and relative prosperity, Malta benefited from a continual flow of inwards investment out of proportion to its size – a highly visible investment in infrastructure, in extensive and elaborate fortifications, in monuments, churches and numerous works of art.

2.07 This pattern seems to have been set much earlier, given Malta's Phoenician, Roman and Arab remains, and its numerous Neolithic temples. The temples date back to 3,600 BC, and are of a scale that required resources, for their construction, exceeding those of the community which is thought to have inhabited the islands at the time. These temples, two of which are World Heritage Sites, are acknowledged as the oldest freestanding stone structures in the world.

2.08 This rich and varied cultural heritage is made more unique by its concentration. "The paradox of the Maltese archipelago--five islands lying in the Mediterranean 60 miles south of Sicily--is how so much cultural heritage came to be packed into such a small area."[3]

2.09 Malta's tourism product reflects all the above – a combination of sun, sea and sand with an exceptional cultural offering, set in the context of a crowded, small country which is busy with many other activities apart from tourism.

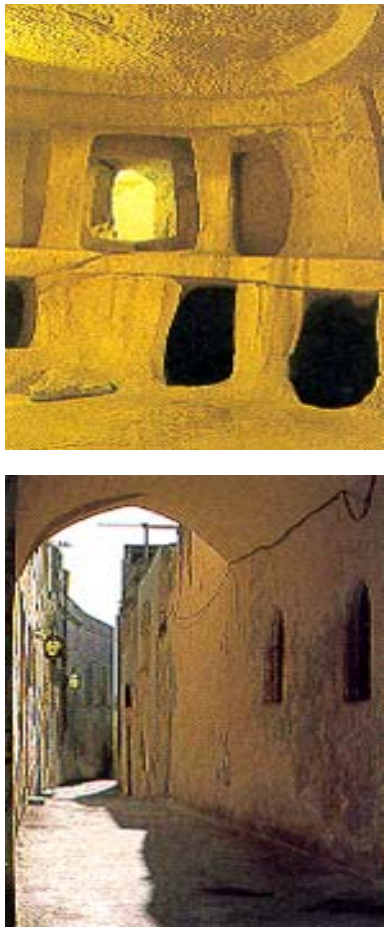


Figure 4 - A cultural heritage spanning thousands of years
Top – Hypogeum, underground Neolithic temple, circa 3,600BC
Bottom – Street in Mdina, medieval walled city

[3] Rose (2004)

2.10 Yet tourism remains a mainstay of Malta's economy. An economic impact study conducted by the Malta Tourism Authority (MTA)[4] has concluded that tourism contributed, directly or indirectly, to circa 30% of GDP and to 41,451 jobs in 1998, representing 29% of the working population at the time. This included:

Figure 5 – Employment connected to tourism, 1998	FTE's
Directly employed in hotels, catering	19,362
establishments, Air Malta, etc	6,208
Indirect employment, eg., suppliers to hotels	4,679
Induced	11,202
Government interaction	
	41,451

2.11 The challenge Malta faces is that of reconciling the needs of its tourism industry with the country's other objectives, which compete for resources and which add to the strains which the country's environment is facing.

Gozo countryside

Blue Lagoon, Comino

Malta Freeport, Marsaxlokk

Figure 6 - Conflicting priorities

[4] MTA (2000)

Chapter 3 – Literature review

The workings of tourism

3.01 Tourism is a complex industry based on the interaction of various forces. In essence, however, its basic ingredients are the same factors that underpin any economic activity.

3.02 The obvious starting point is the product, which in Malta's case is based on the natural and heritage characteristics described in Chapter 2. Product is defined as well in terms of the accommodation infrastructure; in terms of the other amenities and activities offered to the tourist; and in terms of the quality of the environment. It is valid to observe, therefore, that the ability to offer a sound tourism product, backed by a reliable service, is influenced by the host country's own stage of development - "There is a perceived direct link between economic development and the prospects of tourism supply. This link may relate to the complex nature of the production process of tourism and the process of its delivery." [5]

3.03 Supply of the product is most easily perceived in terms of the quantity and class of accommodation available. But in a small island such as Malta two further elements help to define the limits of supply. The first is the physical limitation – the extent to which further growth in tourist numbers is sustainable in a small area. "Malta's tourism offer must be enhanced by better presentation of available options. Improvement of the current offer is more

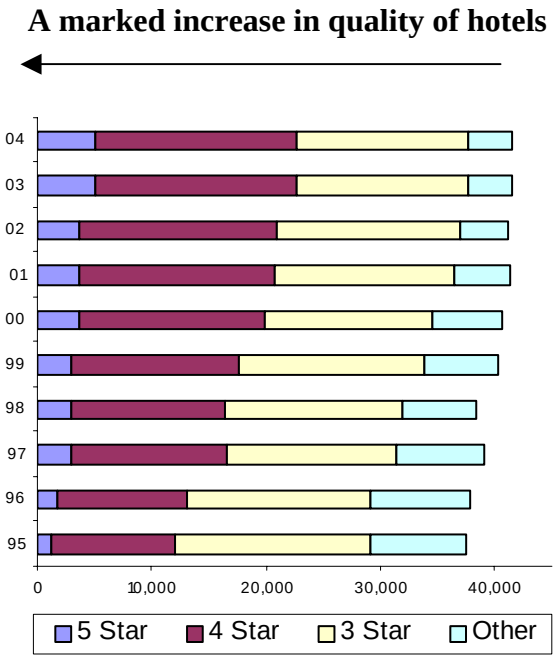


Figure 7 – Hotel accommodation in Malta, by classification, 1995 to 2004

Source: Based on NSO data

[5] R R Croes (2004)

important than further additions to the product"[6].

3.04 The second is the transport limitation, where increases in accommodation supply only become viable if airlines, like the hotelier, are prepared to place more supply on the market. Air Malta, a Government owned company, plays an important role in this area, but cannot accommodate every demand. "A severe lack of airline capacity throughout summer became more evident in October (2003) when travel organisers could not meet demand for Malta with the consequence that a considerable number of groups were lost."[7]

3.05 The pricing of the product matters, with some markets (such as the UK) being more price sensitive than others. Product pricing is a composite of air fares, accommodation and local spending while on holiday, combined with the impact of exchange rates and the levels of margins earned by tour operators, which account for the major part of tourist arrivals into Malta.

3.06 The other key ingredient is demand, perhaps the most varied and complex element.

3.07 At its simplest level, demand will depend on the economic well-being of the countries in which tourists reside. Global economic growth is the main driver behind the strong tourism long term projections made by the WTO (page 2). Increased affluence however also leads to changes in the type of product acquired, and not simply to an increased volume of consumption. A well heeled traveller will not necessarily have more available time in which to travel; but will more likely holiday in the Caribbean rather than Brighton. "The sensitivity of tourism demand for Malta to changes in tourists' expenditure budget (TEB) in the main origin countries is also a cause for concern. As TEB rises, demand for Malta rises *less than proportionally* from UK,

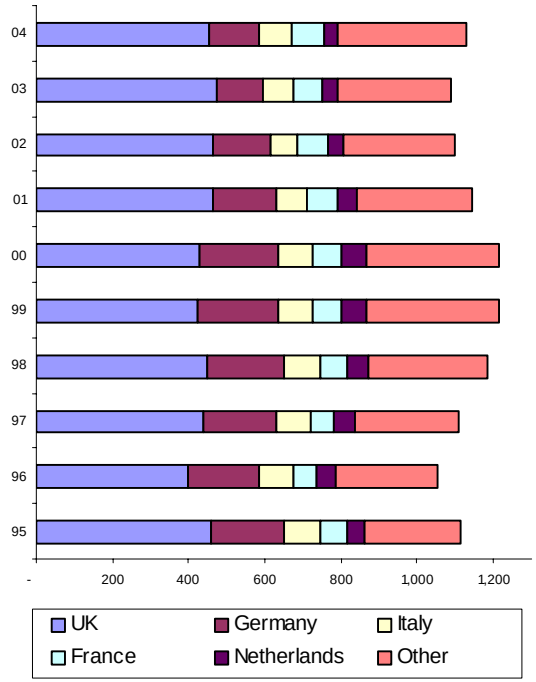


Figure 8 – Tourist arrivals (in thousands) by source country, 1995 to 2004

Source: Based on NSO data

[6] MTA (2002)
[7] MTA (2003 review)

Germany and Italian markets. French demand rises more than proportionally but only to a small degree. Thus, Malta does not appear to be benefiting from economic growth and rising expenditure in its main source markets."[8]

3.08 To understand tourism demand for the Maltese islands, therefore, one must also consider:

- Cultural and language linkages, which are obviously strongest with the UK, Malta's largest market

- Fashion changes and product saturation, eg., the increasing popularity of cruises, and of agritourism, and the search for new destinations – "Europe is the world's most mature destination region, so it cannot reasonably expect the kind of growth rates enjoyed by some of the emerging tourism regions such as Asia"[9]

- Exchange rate movements (the recent US$ weakness favours holidays in the US and the Caribbean)

- Competition from other Mediterranean resorts

- Security and health concerns "In 2003, international tourism lived through another considerably difficult year in which three negative factors came together: the Iraq conflict, SARS and a persistently weak economy."[10]

[8] MTA (2003 review)
[9] ETC (2005)
[10] WTO (2005)

- Marketing effectiveness – which has been on the one part enhanced by increased mergers in the tour operator industry, but at the cost of the added power today enjoyed by the largest tour operators when negotiating packages with hotels and airlines

- Changes in distribution channels, eg., internet bookings, which eliminate middlemen and give a higher value added – " 'Do-it-yourself' is becoming more and more common, particularly for the mature and experienced travellers, vigorously stimulated by the possibilities offered by low-cost airlines and the Internet."[11]

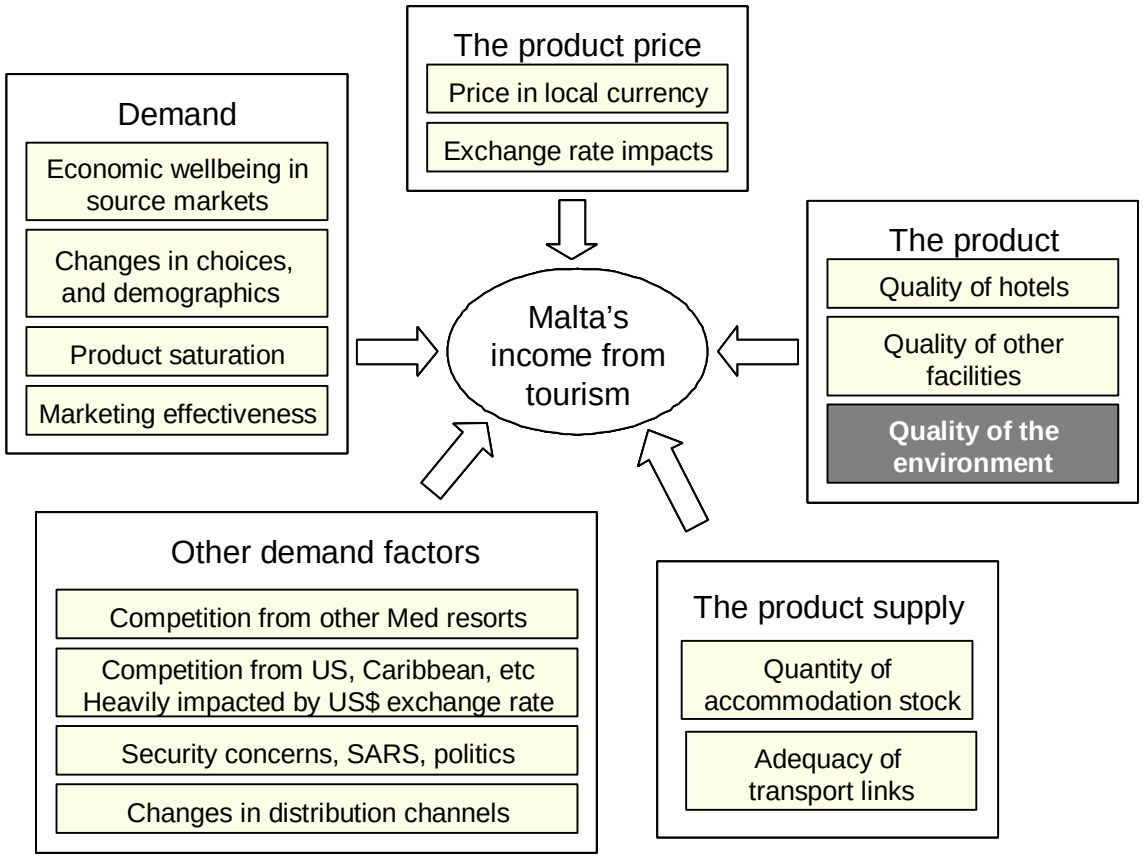


Figure 9 – Principal factors impacting on income from tourism

[11] WTO (2004)

Sources of Malta tourism data

3.09 Tourism data used in this dissertation is mainly extracted or derived from the sources described below.

3.10 Statistics on available bed stock between 1995 and 2004, analysed by class of establishment, are collated by the National Office of Statistics (NSO) in bi-annual surveys and collaborated with annual data supplied by the Hotels and Catering Establishments Board (now absorbed into MTA).[12]

3.11 Quarterly statistics on occupancy, average achieved room rates (AARR), average revenue per room occupied (REVPOR) and average revenue per room available (REVPAR) are collated by Deloitte on behalf of the Malta Hotels and Restaurants Association (MHRA). Response rates are relatively high, especially in the better class establishments, making this data a reliable source (see figure 10). It is possible from this data, by reference also to available accommodation stock, to estimate the annual hotel spend made by incoming tourists.

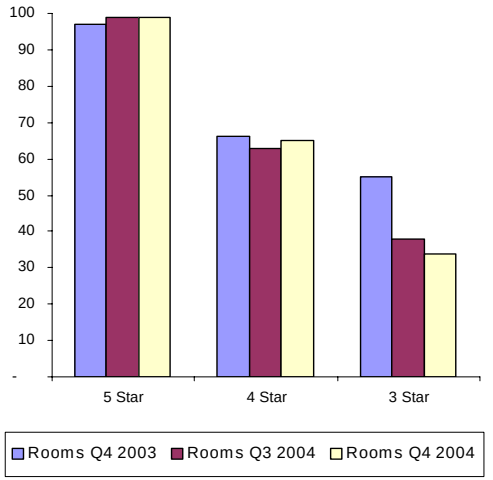


Fig 10 – Deloitte surveys obo MHRA, typical response rates
Source – Deloitte report, Quarter 4, 2004

3.12 Tourist arrivals have been computed for most years from arrival cards upon entry into Malta. Visitors who are here for less than one day, or who overnight on board a ship, are not included in tourist numbers.

3.13 Estimates of tourism receipts (excluding air fares) are published by NSO and are based on Central Bank data. To confirm and increase the reliability of the estimates (because there is an illegal market of value), a sample survey on tourist expenditures and their distribution between

[12] NSO website

the different goods and services was carried out by NSO. The survey confirmed the high reliability of the Central Bank estimates.[13]

3.14 Income from tourism as reported in NSO statistics therefore excludes airfares (reported elsewhere in NSO data, to the extent to which these are earned locally), the margins earned by tour operators, travel insurance and other overseas costs. To provide a fuller picture of tourism expenditure, regular surveys are conducted annually on a sizeable sample of tourists from different destinations, who are invited to keep an accurate log of all spending throughout their stay, on a paid basis. The MTA and NSO build and publish annual tourist expenditure statistics, analysed by type of expense and by nationality, from these ongoing surveys. This process commenced in 1998.

3.15 Data on passenger numbers and revenues are published annually by Air Malta in its annual report and by NSO in the Transport Account in the Balance of Payments. Over 80% of the company's business relates to tourists, often carried on a charter or part-charter basis. Air Malta is by far the market leader, and the trends in air fares recorded by it are assumed to be representative of the fares recorded by the market as a whole (see figure 11).

Air Malta's market position

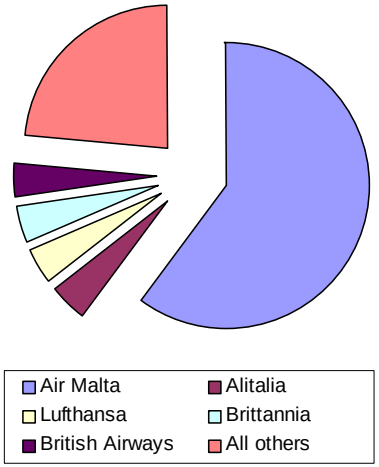


Figure 11 – Passenger numbers at Malta International Airport, 2003

Source: MIA website

Measurement of environmental concerns

3.16 "In the latter half of the 1980s, a new term came into play: *Sustainable Development* was coined by the competent authorities within the United Nations, appearing for the first time in 1987 in the *Brundtland Report*. This Report, also known as *Our Common Future*, alerted countries to the need to engage in economic development without further depleting the world's

[13] NSO website

resources or wreaking havoc with the environment. Indeed, an appropriate definition for sustainable development reads - a development that meets the needs of the present without compromising the ability of future generations to meet their own needs".[14]

3.17 The NSO in Malta responded to the challenge of providing environment related data to the policymaker and its 2002 report 'Environment Statistics' collates the data gathered by a new Environment and Regional Statistics Office in the first few years of its operations. The approach taken by NSO appears to follow international norms aimed at ensuring sustainability and enhancing quality of life. "In the preparations leading to this publication, the Office has striven to publish data that provides fertile ground for researchers and analysts to establish the all-important link between environmental degradation, public health and quality of life."[15]

3.18 Accordingly, data is collected by NSO under the following headings:

- Population - including the impact caused by tourist numbers
- Land Use - in particular focusing on the ever-increasing proportion of built-up land
- Climate
- Water
- Bathing Water Quality
- Waste – quantity and disposal methods are a growing concern
- Transport - including the growing impact caused by an ever increasing quantity of cars
- Energy
- Air Quality – in a country with little heavy industry, this is essentially a repetition of the car congestion theme.

[14] NSO (2002)
[15] NSO (2002)

Environmental issues of concern to tourists

3.19 In spite of the above, there has been a growing concern within the tourism industry that the environmental data being collated and published in Malta was only of marginal relevance to the average tourist. As a result, Malta was not necessarily monitoring those indicators that most impact on its tourism earnings.

3.20 A survey assessing the impact that environmental issues have on tourism was accordingly commissioned by MHRA in 2003 and conducted by Deloitte. The survey highlighted the environmental factors, both positive and negative, which are most relevant for tourism.

3.21 The study did this through detailed surveys carried out on a sample of 1,700 tourists over a period of one year. Environmental questions were tackled in two ways. In the first place, respondents were asked to rate several aspects of Malta's environment. Respondents were then asked to identify those negative factors that most impacted their holiday adversely. A number of background questions were also asked.

3.22 "The state of the roads, increasing urbanisation, traffic congestion and low levels of cleanliness are the top environmental issues that give rise to varying levels of dissatisfaction to our visitors, in that order. Noise levels, bad odours, poor air quality and litter on beaches or in the countryside were also highlighted. This is consistent with ongoing MTA research and highlights key product weaknesses." [16]

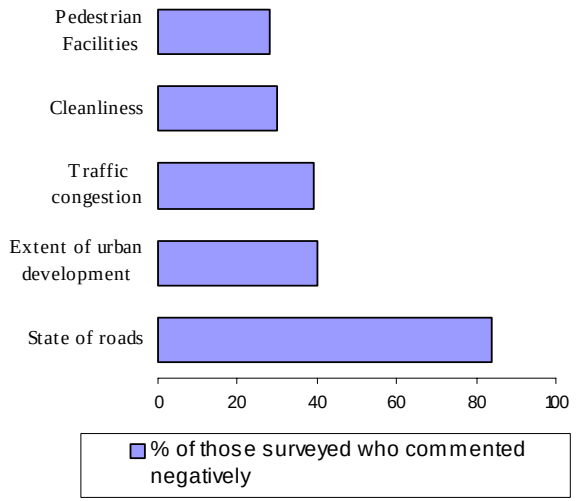


Figure 12 - Negative ratings
Source: Deloitte survey on environmental issues impacting tourism

[16] Deloitte (2003)

3.23 Further specific environmental issues, such as landfills and hunting, were identified as concerns by more than 1 in 3 tourists.

3.24 Where these specific problems were noticed, they tended to evoke strong negative feelings amongst respondents. An estimated 210,000 tourists felt that urban development had a major detrimental effect on their holiday, while 110,000 tourists thought landfills had an important effect on their vacation. 80,000 tourists felt hunting had a significant negative impact. "It would appear that tourists are not feeling that they are 'getting away from it all' by visiting Malta which is often one of the principal objectives of going on holiday." [17]

3.25 The German market was identified as being the most environmentally sensitive, which is worrying in the context of the sharp decreases in German tourist arrivals in recent years.

3.26 The same survey concluded that 53,000 tourists would not recommend Malta to friends. This is a major concern as word of mouth has traditionally played a vital role in the marketing of the Maltese tourism product. The survey recorded 44% of tourists as hearing about Malta from friends or family.

3.27 It was however encouraging to note that 38% of tourists were repeat visitors.

3.28 A large majority of tourists experience Malta without using organised tours, suggesting a larger risk of them noticing the islands' environmental weaknesses such as slums and urban environmental degradation. "The four most popular activities pursued by visitors during their stay included independent sightseeing (82%), walks (75%) and swimming & water-sports (55%)

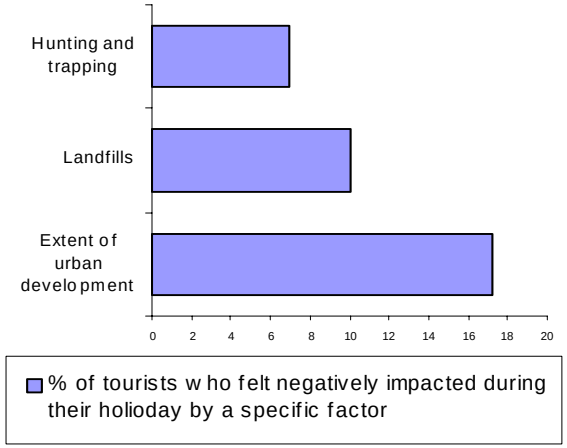


Figure 13 - The factors impacting more negatively

Source: Deloitte survey on environmental issues impacting tourism

[17] Deloitte (2003)

followed by organised excursions (49%)." [18]

3.29 This survey is given considerable weight in this dissertation. It constitutes the only professionally compiled evidence available of what matters to the tourist, across the whole spectrum of environmental issues, and to what extent. It also illustrates the gap between the environmental issues of concern to tourists and those on which statistical data is being regularly gathered for policymaking purposes.

3.30 Fortunately, this gap in available data is not a complete vacuum. The issues of concern to the tourist are of equal importance to the average Maltese citizen, and are a source of much public dissatisfaction. This dissertation makes use of this in measuring environmental degradation in recent years.

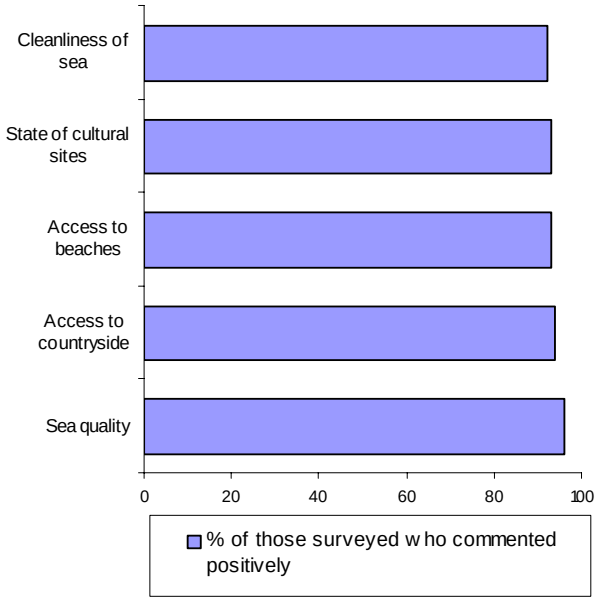


Figure 14 - Positive ratings
Source: Deloitte survey on environmental issues impacting tourism

This dissertation is about the impact which negative environmental factors have on tourism earnings. It is important however not to lose sight of the many positive factors in Malta which create those earnings in the first place.

[18] Deloitte (2003)

Chapter 4 – Research Methodology

4.01 The research approach to this dissertation has entailed a systematic overview analysis of the Maltese tourism industry. It examined how the industry works and which factors have been most important to its earnings. A methodological review of statistical data, a variety of published reports and other relevant literature has been made to assess and better understand the industry's current position, and the European tourism market of which it forms a part.

4.02 During this review, it became apparent that the tourism industry in Malta has undertaken material restructuring in recent years, seeking to stimulate a growth path, and that quality improvements have been the industry's strategic focus during the last decade. A significant investment has been made, for instance, in improving the quality of the bed stock, yet the results of these quality improvements are not apparent when reviewing Malta's earnings from tourism.

4.03 During the same period, Malta has seen further growth in urban and industrial development, and the Deloitte 2003 study has demonstrated the concerns expressed by tourists in this regard.

4.04 To test the extent to which environmental degradation and tourism earnings may be related, the following chapter will be devoted to building an environmental degradation index based upon the environmental issues most relevant to tourists. This index, where possible, is constructed using environmental data already collated by the NSO or other relevant agencies, as identified in Chapter 3. For some factors, other indicators are identified which could be used to measure the degree of change over a period. Finally, the results of the Deloitte 2003 survey are used to determine the weighting to be given to each factor in determining the overall index.

Figure 15 – Portomaso, a new development incorporating the Malta Hilton, is representative of the major investment being made to upgrade the overall tourism product.

4.05 In Chapter 6, other tourism indicators that impact tourism expenditure, as depicted in figure 9, will be tackled. The compilation of a price changes index that encapsulates the entire tourism package is discussed. Indices are also developed, from published statistics, to represent other relevant factors such as demand, accommodation supply and so forth.

4.06 Chapter 7 will be devoted to the integration of these indices and indicators into an analytical model designed to show the impact each independent variable has upon the dependent variable (tourism spending by tourists), with a particular emphasis on the impact caused by the environmental degradation index.

4.07 The results from the model are then combined with the rest of the study, and overall conclusions are given in Chapter 8, also recommending further areas of research.

4.08 The analysis is conducted over a period of ten years, using data relating to the years 1995 to 2004. This period is shorter than ideal for modelling purposes, but has been selected on the following criteria:

- The environmental index is being computed on the basis of a tourist survey made in 2003. Most Maltese would agree that the concerns expressed by tourists in this survey have been around for some time. For instance, the impact of prospective EU membership on hunting was a hot political issue in the 1996 general election. But going back, for instance, to 1985 runs a high risk of overlooking other environmental issues that may have been more important to tourists at the time, while issues such as the Maghtab dump were then non-existent.

- A second consideration has been the degree of public sentiment about the environment over the last 10 years, compared to previous periods. Some concerns expressed by tourists in the Deloitte 2003 study, eg., too much urban sprawl, would probably have been expressed by many tourists 20 years ago; but other concerns, such as those regarding hunting, are a product of the age.

4.09 This second point is illustrated by a simple statistic (see opposite) that emerged during the research conducted when building the environmental degradation index in Chapter 5. The number of 'environment' mentions which appeared in the Times between 1985 and 1994 shows a much sharper rate of acceleration than that recorded during the period 1995 and 2004, when public awareness of the issues had perhaps matured. Given the use made of this simple measure in the next chapter, it is felt that focusing on the period 1995 to 2004 is more suitable, to reduce the risk of building an index which reflects changing attitudes more than the actual amount of degradation of the environment.

4.10 The methodology outlined above has its limitations. No attempt is made, for instance, to measure certain factors such as quality changes in competing resorts. An element of subjectivity is inevitable when assessing the extent of environmental degradation. These limitations are discussed in more detail in the conclusions of the study.

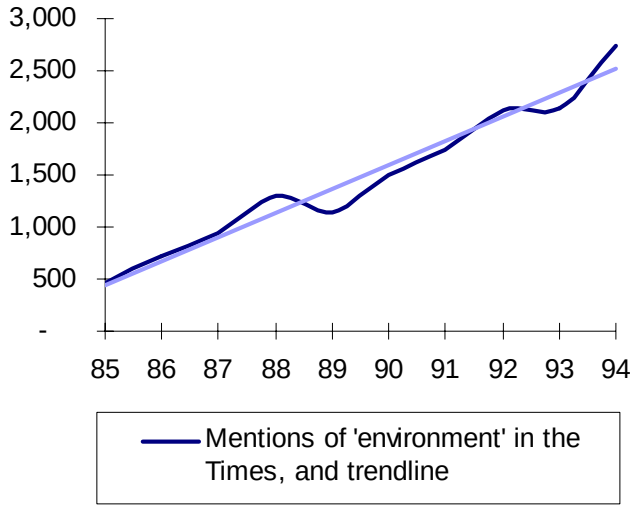
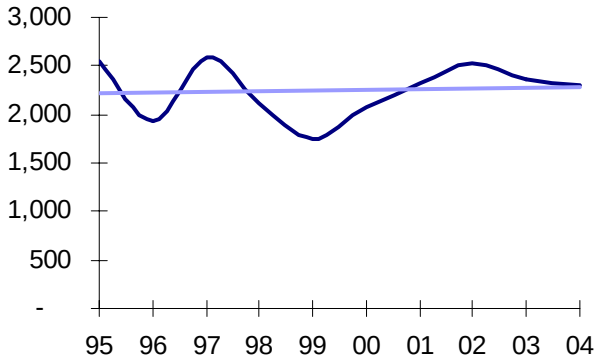


Figure 16 – Signs of growing maturity in overall awareness of and interest in the environment



Chapter 5 – Environmental degradation 1995 to 2004

Environmental negative factors selected

5.01 In seeking to determine a relative environmental degradation index for the ten years 1995 to 2004, this dissertation focuses on those issues that tourists identified as particularly negative in 2003. There is ample evidence, as will be seen in this chapter, that these issues have been a source of concern throughout the last ten years.

5.02 The dissertation, therefore, will not attempt to derive an index focusing on all aspects of Malta's environment, but will concern itself only with the main negative elements noted by tourists in 2003, namely:

- Extent of urban development
- Traffic congestion (laments on lack of pedestrian facilities and on air quality in certain locations are in effect an extension of this factor)
- State of roads
- Urban cleanliness
- Landfills
- Hunting and trapping.

Extent of urban development

5.03 Chapter 2 commented on Malta's population density, and on the high proportion of its land mass that is currently built up.

5.04 Recent years have seen a deterioration in Malta's environment in this area. The population has increased. The average size of households has decreased given the larger number of self-sufficient older persons in an ageing population; the smaller size of the average family; and the growing proportion of single person or single parent households. These factors, accompanied by the Maltese tendency to invest in property (even if left vacant) as a very limited and appreciating resource, has lead to frenetic building activity.[19] Increased affluence is also leading to families opting for a larger living space.

5.05 Figure 17 illustrates the extent of the problem. The number of dwellings required in Malta increased by 90% between 1957 and 1997. Over the same period, Malta's built-up area has increased by 500%.

5.06 The increase in built-up area between 1995 and 2004 is considered as a meaningful basis for computing an environment degradation index relating to this factor.

An increase in built-up area out of proportion to the increase in new dwellings required

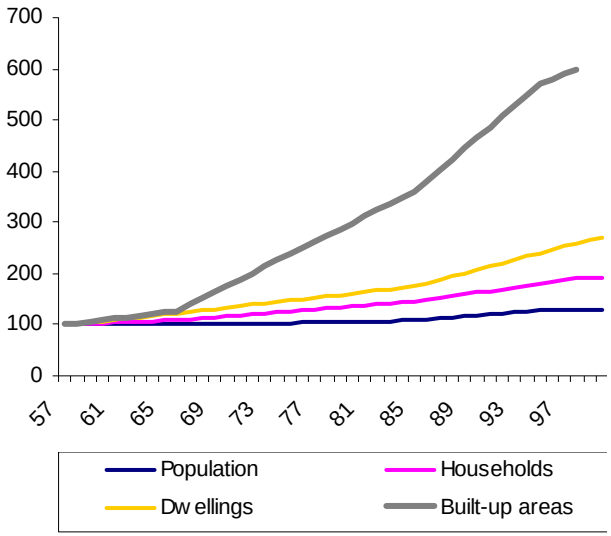


Figure 17 - Population, households, dwellings and settlement area, 1957 – 2000

Source: Structure Plan for the Maltese Islands - Housing Topic Paper

[19] MEPA (2002)

Traffic congestion

5.07 Data relating to traffic congestion is compiled annually by NSO. This demonstrates that vehicle numbers have been increasing at a much faster rate then the creation of roads, leading to a deteriorating congestion situation. The number of vehicles on the road increased from 188,000 in 1995 to 271,000 in 2004, a growth of 44% in a period during which the population grew by 6%. The road network grew by circa 1.8% per annum during the same period.

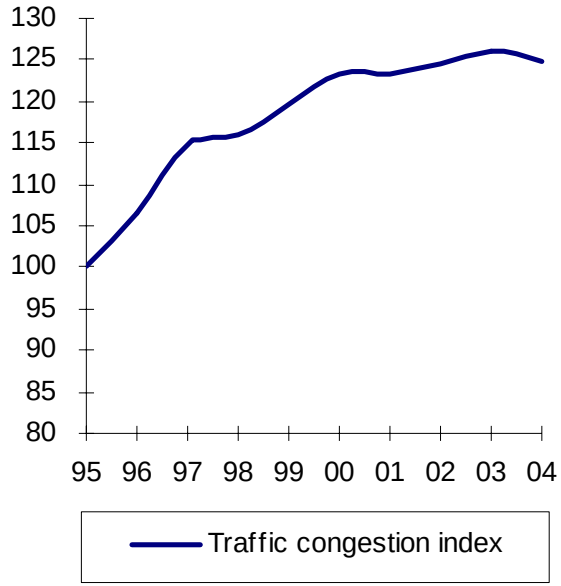


Fig 18 - Growth in number of vehicles less

Other factors – the issues

5.08 The other major negative factors emphasised by tourists in the Deloitte 2003 survey were the state of the roads, urban cleanliness, landfills and hunting and trapping.

5.09 The state of Malta's roads has long been a favourite complaint among its inhabitants. A variety of reasons are quoted in the numerous newspaper articles on the subject – lack of co-ordination between utilities, with roads seemingly being dug up on a regular basis almost as soon as they are resurfaced; poor quality surfacing material which seems to melt on hot days; poor workmanship, including inadequate road draining, with large potholes appearing after a major rainfall; and an ever growing fleet of large, heavy trucks which are increasingly blamed for causing road damage.

5.10 Urban cleanliness is another common lament. Malta's environment is not helped by its dense population or by its climate, with virtually no rainfall between April and September. The dry weather creates dust, and this is augmented by the level of construction activity. Unfortunately, this factor is made worse by a lack of civil manners and education in certain areas

– unnecessary careless littering, poor hoarding adjacent to building sites and so on.

5.11 To be fair, much has been done in recent years to improve matters – education in schools, delegation of public cleaning to local authorities that are more focused on their own localities, and added policing. But the comments made by tourists indicate that more is required, especially within urban areas, and most Maltese would probably agree.

5.12 The landfills issue has been highlighted in recent years by the rubbish dump at Maghtab, which lies close to a main tourist road on the coast. This dump was expanded in the late nineties, after a heated debate, until it reached proportions that changed the geography of its immediate area, depleting the visual environment. This therefore brought to the attention of the tourist an issue that was previously out of sight, damaging Malta's tourism product.

5.13 The last negative material factor considered in this dissertation concerns hunting and trapping, an issue which has grown in importance due to the sensitivity and deep feelings it arouses in tourists aware of it, as evidenced in the Deloitte survey. While only 5% of tourists felt that this matter had negatively impacted their holiday, the same respondents commented on the subject in stronger terms than was generally observed in the survey on other factors.

5.14 Each environmental issue has its own particular character that needs to be examined and taken into consideration in selecting an appropriate basis of measurement. Landfills, for example, seemed to emerge as a problem only once the existing landfill became more noticeable. Dumping at Maghtab ceased in January 2004, and public concern about it may diminish as vegetation growth disguises the material it is feeding on. Thus, although detailed statistics have been maintained on the tonnage and type of material dumped at Maghtab, these numbers do not really reflect the visibility impact on tourists that this dissertation is concerned about.

10th Mar 2005 issue of The Times of Malta

"Mount" Maghtab
by Mark Causon, Pembroke

Fig 19 – Maghtab, adjacent to a popular coast road

5.15 Malta's entry to the European Union helped publicise many of these issues due to the environmental measures and policies that Malta has had to agree to implement in order to comply with EU standards. In particular, hunting has attracted the full attention of the European Commission during accession negotiations with Malta, in part due to the extensive negative press coverage devoted to the matter within various EU countries, but mainly in the UK and Germany.

5.16 The impact on German tourism in recent years has been keenly felt. The German tourist in Malta has typically been better off, avoids the hottest, more crowded summer months, and is interested in culture, history and the countryside. This sort of tourist will visit in Spring and Autumn, and fits in perfectly with Malta's twin objectives of attracting higher spending visitors and of filling its hotels in the less busy months. Sadly, Spring and Autumn are bird migration periods, the peak season for hunting.

5.17 An interview with the president of Bird Life Malta, Mr J Mangion, confirmed that the situation in Malta is still being followed closely by bird watchers all over Europe. Over-hunting of migratory birds obviously impacts on their environment as well.

Other factors – Quantifying an index, 1995 - 2004

5.18 The four factors outlined above have one thing in common – they are much harder to quantify as no systematic studies regarding them have been made over the past ten years.

5.19 There is a clear gap in this area. One approach which could be adopted by the MTA to address this is that of extending the scope of the ongoing tourist surveys, to cover all the concerns noted in the Deloitte 2003 study (some issues, such as quality of roads are already

BirdLife losing hope in battle against hunters

Herman Grech

Gunned down: A kestrel, a marsh harrier, a purple heron and a grey heron - two of which are specially protected birds.

6th April 2005, Times of Malta

Figure 20 – Reflecting a mentality that Malta needs to outgrow

covered). This could be done in a manner which permits a more quantitative assessment of the results, eg., asking tourists to rate their opinions on each factor on a scale of 1 to 10. Surveys of this type are often utilised in environment related assessments. [20]

5.20 In the absence of such surveys, this study bridges over the missing data by simplifying the argument and assuming that the awareness and publicity that such issues enjoy in Maltese newspapers is representative of tourists' opinions and their own awareness about these factors. The issues raised by tourists are in fact lifestyle concerns that impact all Malta's occupants.

5.21 There are obvious limitations to this approach. Potholes may matter more to locals driving their own car than to a tourist driving a hired vehicle. The same may apply to landfills. But what this study is seeking to measure is the extent of deterioration in each selected factor over the period, and it is suggested that this rate of deterioration impacts locals and tourists alike.
.

5.22 To test the selected factors, computer based searches have been carried out on the archives of the Times of Malta. The Times is the most widely read newspaper on the island, free of political party interests in its ownership, and has been published on a steady format and length for a number of years. Its digitalised archives go back to 1945.

5.23 To test how public awareness and concern – as reflected in the newspaper – has increased or otherwise over the period 1995 to 2004, searches have been made of the number of articles or letters published on the relevant topics, based on selected keywords (eg., litter, rubbish, littering, potholes, Maghtab, landfills, hunters(ing), trappers(ing), etc).

[20] Field (2002)

5.24 The outcome of the searches conducted illustrates a growing mention of the four factors being tested, in contrast to the more subdued graph illustrated in figure 16 with regards to the total number of mentions of 'environment'. This finding is considered significant, and indicates a growing public concern on the issues.

5.25 With one exception, the data patterns illustrated in any one year did not appear out of line with the overall trends. In the case of landfills, it was noted that Maghtab related articles featured at exceptionally high levels in 1996 and 1997. It resulted that this was due to a policy debate held at the time on the future of the site rather than to articles criticising the resultant outcome, which peaked later. The data collected was adjusted in this one instance to cater for this factor by eliminating the articles related to the policy debate.

5.26 The environment degradation indices constructed using the above approach are illustrated in figure 21. The following observations are worth noting:

- The indices for quality of roads and urban cleanliness demonstrate constant deterioration in line with those recorded for urban development and traffic congestion. The degree of deterioration is however slightly more emphasised.

- The indices for landfills and hunting and trapping show very high levels of deterioration – one can speak about a 'hysterical' factor in relation to these issues (could also represent a 'solution' factor, ie., more articles discussing solutions rather than making complaints – it was not feasible to go through the hundreds of articles noted to distinguish their character). The same emphasis was however also noted in the responses given by tourists on these problems in the Deloittes 2003 study; and it is evident as well in the barrage of complaints often reported overseas, especially on hunting. Given this emphasis, also

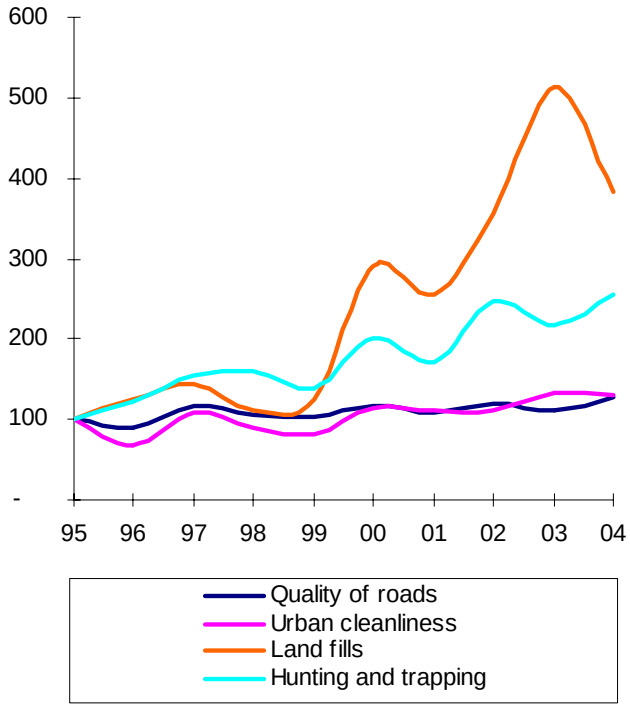


Figure 21 – Factors evaluated using the 'Times' index, showing increases in the level of degradation

considering that these factors have a relatively small weighting in the composite index being constructed, no attempt has been made to adjust for the 'hysterical' impact visible in their ratings.

- In all or some of the factors, reductions in complaints were recorded in 1996, 1998 and 2003, three election years. In an election year, an extra effort is made to repair roads and so on, but the practical impact of this is limited. Of more significance to this dissertation is the fact that Maltese elections are intensive processes over a three or four month period and are extensively reported upon – at the expense of other topics which would otherwise receive more media coverage.

- A similar impact was also recorded in 2001, a year characterised by Malta's EU accession negotiations, which also received high media coverage.

5.27 The above suggests that working on the raw data disclosed in figure 21 is misleading in that the issues concerned, while clearly increasing in importance over the period, are in fact competing with other topics for newspaper space. On these variables, therefore, the composite index has been compiled using their linear trend line, smoothing the unnatural variations and working on a result that is probably closer to reality. Factors such as quality of roads and urban cleanliness are unlikely to fluctuate by material amounts from year to year, with changes being more gradual.

Weighting assigned to the different factors

5.28 In computing the environment degradation index, this dissertation sought to reflect the importance attached to the different factors by tourists themselves, as recorded in the Deloitte

2003 survey. While the objective is straightforward enough, applying it unfortunately entails a further degree of subjectivity.

5.29 As explained in Chapter 3 (see figures 12 and 13), the survey identifies two indicators. In the first, tourists were asked to rate a number of given factors; their worst rating – by a high margin - was given to the quality of roads. In the second, tourists were asked to comment on those issues that they felt really impacted on their holiday. In this case, urban overdevelopment was rated as the most negative. In other words, a tourist may note factor A as very bad, but dismiss it as quaint; while factor B, which is less negative, may cause more upset.

5.30 This suggests that the second set of indicators should be given more weight in the composition of the index. A counter-argument would be that this second set features factors such as landfills and hunting and trapping which already include, as already noted, a 'hysterical' factor in their computation. Giving these factors more weight risks double-counting.

5.31 This consideration favours a more restrained approach, giving both sets of indicators equal importance, not to overstate the degree of environmental degradation.

5.32 For the sake of completeness, also to test whether the above consideration is valid, three composite indices have been compiled:

	Variant 1	Variant 2	Variant 3
	Equal to both sets of indicators	Indicators listed as causing specific adverse impact given a weighting of 1.5	Indicators listed as causing specific adverse impact given a weighting of 2
Quality of roads	36.5%	33.8%	31.5%
Urban development	26.5%	28.8%	30.7%
Traffic congestion	17.0%	15.7%	14.6%
Urban cleanliness	13.0%	12.1%	11.2%
Land fills	4.8%	6.6%	8.2%
Hunting and trapping	2.2%	3.0%	3.7%

Figure 22 – Weighting assigned to different factors in compiling a composite index

The composite indices

5.33 The compilation of the composite indices as per the above is illustrated in Appendix A. The results of the exercise indicate a significant degree of deterioration *in the selected factors* during the period under review. The computation methodology is, as described in this chapter, more indicative than precise. But even if one allows for a generous degree of error, the materiality of the negative trend remains high.

5.34 The words in italics above are important. The index is not seeking to measure changes in the total environmental quality within the country, but focuses only on certain negative criteria.

5.35 On most measures, as noted also by the more vocal organisations pushing for improvements [21], much has been done in recent years to better manage the environment. In some areas, such as urban planning, the measures taken may not have halted the continued urban growth. Most Maltese would accept however that more recent developments have tended to be of better architectural quality and that matters generally would be much worse without the work done in recent years by the Malta Environment and Planning Authority (MEPA). In many other areas, such as beach cleaning, care of historic sites, and others, visible improvements have been recorded.

5.36 The problem, of course, is that Malta is competing with other countries that often already have high standards; such that its good points are taken for granted while its weaknesses stand out. Its small land mass make its faults all the more visible.

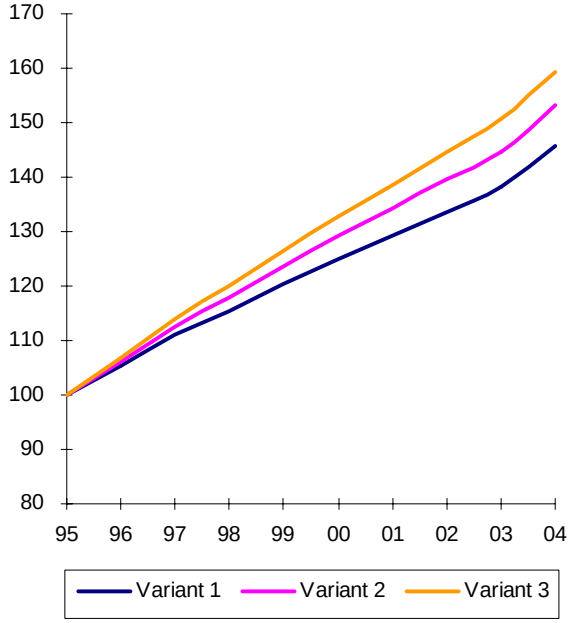


Figure 23 – Environment degradation index in ascending scale (higher values equal more degradation).

Source – Computed using the methodology outlined in this chapter, illustrated in Appendix A

[21] Scicluna (2003)

Chapter 6 - Tourism indicators 1995 to 2004

6.01 This chapter outlines the relevant data that will be considered when testing, in Chapter 7, the correlation between earnings from tourism and the environment degradation index. This data aims to cover the main factors listed in Chapter 3 (see also figure 9 and Appendix B).

Data index compiled and its source	*Relevance to the study*
A. Malta's earnings from tourism (source - NSO data, restated in real terms by reference to Maltese RPI)	This is the key measure of the earnings from tourism which this dissertation seeks to assess
B. Overall tourist spending in European countries (source – World Tourism Organisation); the data is expressed in Euro (ECU) and is stated in real terms	Considered as the best indicator of European demand, representing not only the impact of economic growth, but also of changing fashions, changes in the average length of holidays, shifts to non-European destinations, SARS, 9/11 and similar factors which impact the market as a whole.
C. Hotel capacity in Malta, measured in number of beds (source – NSO statistics)	Measures the extent to which Malta was capable of growing its market to take advantage of growth in the market in Europe. Given the high seasonality of Malta's business, volume increases will be highly influenced by increases in accommodation supply.

D. Hotel capacity in European countries, as measured by available room stock (source – TourMIS statistics)	This measures European competition on supply. If other European destinations as a whole have increased their accommodation supply at a much higher rate than Malta, one would expect such countries (all other factors being equal) to attract a higher share of the growth in tourist numbers.
E. Quality increase in Malta, reflecting the investment in recent years in higher quality hotels - more 5 star, much less 3 star (measured in terms of the earning capacity of the 'average' hotel room, calculated from Revenue per Available Room statistics compiled quarterly by MHRA).	Same impact as factor C, but expressed in terms of quality, which in this case equals revenue generating capability. As in C/D above, this needs to be contrasted to similar changes in the European market as whole. Suitable data for the European market has however not been identified, and this is therefore an important variable which will be discussed but which will be difficult to test statistically.
F. Number of tourists visiting Malta annually (source – NSO statistics)	Used to compute changes in average real spend per tourist, to be compared to European figure
G Number of tourists visiting Europe annually (source – World Tourism Organisation)	As above

H. A price index for the Malta tourism product (see appendix C for sources and computation)	Computed as a measure of how the price of a typical holiday in Malta has changed over the years, taking account also of exchange rate movements. This index compilation also helped to identify the main components of tourist spending, to better analyse and understand the conclusions emerging from the statistical analysis in Chapter 7.

6.02 It is worthwhile at this stage to take stock of some of the indicators that emerge.

6.03 Figure 24 shows that tourist arrivals in Europe increased by 29% between 1995 and 2004. During the same period, tourist arrivals in Malta grew by 1%. After a dip in 1996, visitors to Malta rose in line with European demand until 2000. After that point, however, tourist arrivals to Malta declined, at a time when Europe as a whole continued to record consistent growth.

6.04 In a country with a limited land mass, there is a natural cap on the growth in numbers which is possible. As figure 24 also illustrates, however, the bed stock in Europe increased by only marginally more than the bed stock in Malta over the same period. Europe as a whole has therefore managed to increase its hotel occupancy over the 10 year period, while Malta has gone backwards in this key performance indicator (with the exception of 2004, which recovered some of the ground lost since 2000).[22] It is acknowledged that Malta's tourism is very seasonal, and this has an impact. A similar seasonality however affects large parts of tourism across Europe

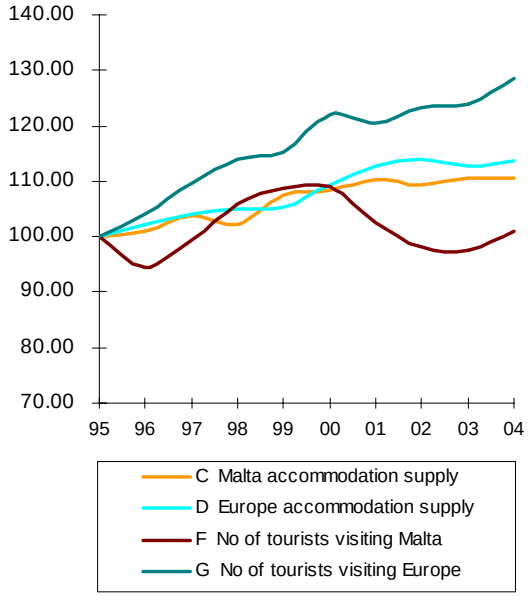


Fig 24 - Selected indicators

[22] MHRA (2005)

(but admittedly not the city centre 'short breaks' business, which is becoming more popular).

6.05 Figure 25 looks at tourism spending in relation to numbers of tourists.

6.06 Over the 10 years, European tourist numbers grew by 29%, while tourist spending (in real terms) went up by the slightly lower figure of 24%. One of the trends evidenced during the period across Europe, including Malta, is for people to have more frequent but shorter holidays. The difference noted above is probably more due to this factor than to any real reduction in spending per tourist.

6.07 The results for Malta are less encouraging. During the same 10 year period, while Malta's tourist numbers grew by 1%, the spending of its tourists actually decreased by 11% in real terms. This is a reduction of 12% in spending per tourist, which is significant.

6.08 Concerns are occasionally voiced in the local press that Malta's tourism product is overpriced; and that the Malta lira is overvalued. For a period the Central Bank in fact operated a Tour Operators Support Scheme that offered overseas tour operators a subsidised exchange rate on their payments to local hotels.

6.09 The fact that spending per tourist has been falling indicates otherwise. To test this point, a tourism product price index (see para 6.01(H) above) was compiled covering the period between 1995 and 2004. The compilation of this index is set out at appendix C. The index is measured in real terms, adjusting for inflation. It was also adjusted for changes in exchange rates against the Euro and against Sterling during the period.

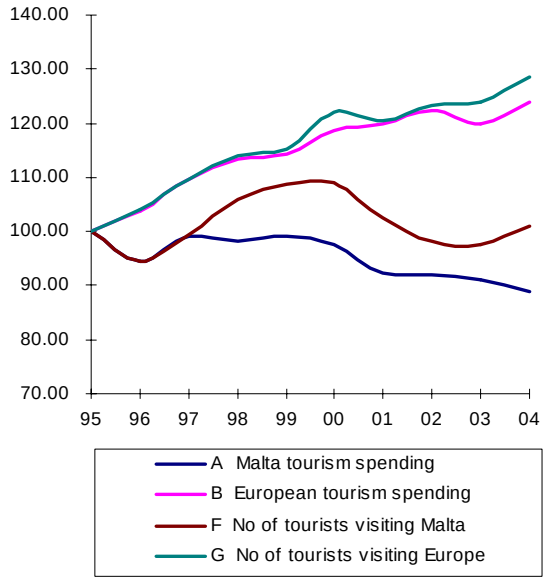


Fig 25 – Selected indicators

6.10 The index indicates that the price of the Malta tourism product has come down substantially in real terms during the 10 year period, but that the degree in reduction in the different components varies significantly.

6.11 Airfares have suffered most, recording a reduction in cost of 25% over the period.

6.12 The figures for hotels are more varied. There is evidence that Maltese hotels increased prices in 2000 before demand began to slide, but that they subsequently had to discount their rates very sharply. The extent of the rate reductions noted over the next few years indicates a pattern of prices falling in the face of decreased demand, and not of demand being diminished by higher prices.

6.13 The impact of the above becomes more marked when considering that during the period, Maltese entrepreneurs made a significant investment to upgrade their hotel product in Malta (see figure 7). New 5 star and 4 star hotels have been built, replacing lower quality establishments. This should have enabled Malta to enhance its tourist earnings, but this has not happened.

6.14 The data compiled in preparing the price index in fact demonstrate that while tourist spending has not increased in total, its components have changed. Tourists appear to be enjoying the quality and in-house facilities offered by the better seaside hotels that have been built in recent years. This has led to a change in the mix of their spending, as illustrated in figure 27, with spending at hotels growing, at the cost of other elements.

6.15 All these figures indicate a missing ingredient or ingredients that are negatively impacting Malta's results in other areas in a material manner. Chapter 7 seeks to establish to what extent these ingredients may be related to the environmental factors described in Chapter 5.

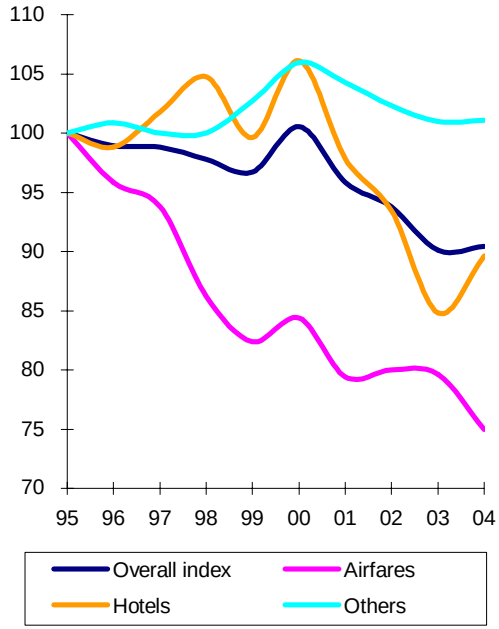


Fig 26 – Price index on the Malta tourism product, adjusted for inflation and for changes in relevant exchange rates

Before doing this, it is however necessary to remember the limitations of this exercise.

6.16 Apart from the indirect manner in which the environment degradation index has been computed, there are several factors that impact tourism spending which it was not possible to assess or quantify, within the space limitations of this dissertation:

- 'Tiredness' of Malta's tourism image – although the investments made in recent years should mitigate against this
- Marketing effectiveness
- Competition from other Mediterranean resorts
- How Mediterranean resorts as a sub-group have fared when compared to Europe as a whole
- Adequacy of transport links, and the absence of any low cost airlines operating to Malta
- The increasing bargaining strength of tour operators, especially after a number of important mergers within the industry (eg., Thomson, by Tui). Tour operator business accounted for 81% and 93% of arrivals in 4 star and 3 star hotels respectively during 2004. [23]

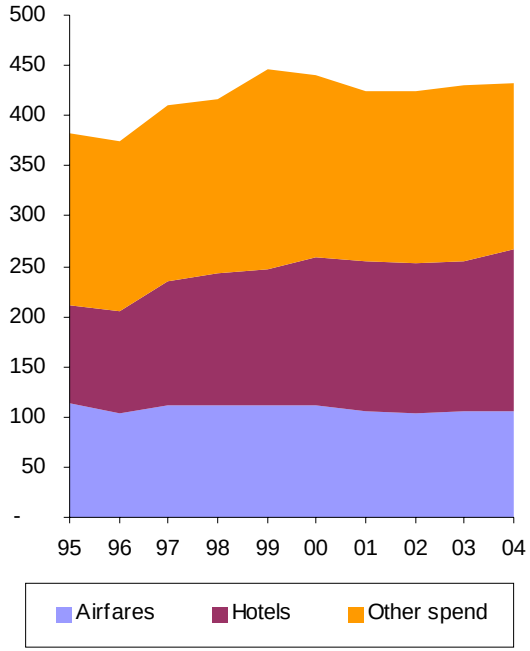


Figure 27 – The hotels' share of tourist spending has been increasing

[23] MHRA (2005)

- Quality of various amenities and services offered to tourists in Malta apart from hotels
- Changes in distribution channels.

Chapter 7 – Correlating environmental degradation to tourism earnings

7.01 In the light of the analysis conducted in Chapter 6, the correlation between environmental degradation and tourism earnings in the period 1995 to 2004 is measured in this chapter by reference to the following key data:

- Earnings from tourism in Malta
- Earnings from tourism in Europe
- Changes in accommodation supply in Malta
- Changes in accommodation supply in Europe
- The environmental degradation indices described in Chapter 5.

7.02 The starting point in the correlation exercise has been that of computing an ‘expected earnings’ index for Malta’s tourism industry and of comparing this to actual earnings, ignoring environmental degradation.

7.03 The 'expected earnings' index has been calculated using the following formula (see also paragraph 6.01 for sources):

ER = B x C x D, where

ER = Expected earnings, ignoring environmental degradation
B = Growth in European earnings (overall demand)
C = Growth in Malta's accommodation supply (Malta's competitive placing in being able to take advantage of higher demand)
D = Growth in European accommodation supply (a comparable measure of the competition), expressed in inverse terms.

7.04 The results, as disclosed in figure 28, show a clear correlation between expected earnings as calculated above and actual earnings. This gives a satisfactory degree of comfort on the relevance of the selected factors, and on the data interpretation in Chapter 6.

7.05 A regression model using actual earnings as the dependant variable, with B, C and D as the independent variables confirms the degree of correlation which is evident from the graph:

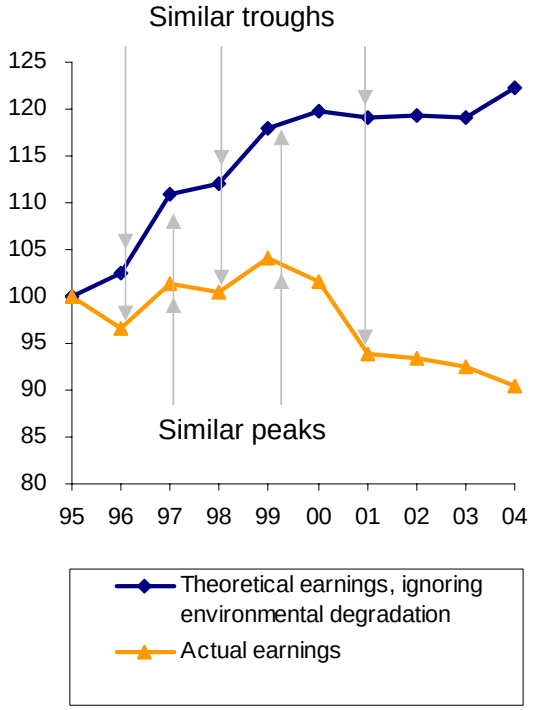


Figure 28 – Actual earnings versus expectations, ignoring environmental degradation

Figure 29 – Actual earnings versus expectations, ignoring environmental degradation	Regression statistics
Multiple R	0.917767
R Square	0.842296
Adjusted R Square	0.763445
Standard Error	2.332072
Observations	10

7.06 In spite of the similarity in the shape of the two earnings streams depicted in figure 28, there are clearly other influences at work that are causing them to drift apart, such that Malta actual earnings are becoming increasingly less than expectations.

7.07 To test the extent to which environmental degradation may be part of these influences, a second correlation exercise has been carried out, this time adjusting the 'expected earnings' index with the environmental degradation indices computed in Chapter 5. The formula used is as follows:

ER(env) = ER x Variant, where

ER(env) = Expected earnings, adjusted for environmental degradation
ER = Expected earnings, ignoring environmental degradation
Variant = Environmental degradation index on issues of concern to tourists, as computed in Chapter 5 (three variants to test), expressed in inverse terms.

7.08 Figure 30 illustrates the result which emerges when computing ER(env) by reference to Variant 1, the more restrained environmental degradation index. This variant in fact gives the closest fit, in line with expectations (see paragraphs 5.30 and 5.31 above) as illustrated by the regression analysis below. In this model, actual earnings were again the dependant factor, while that B, C, D and variant(s) were the independent variables.

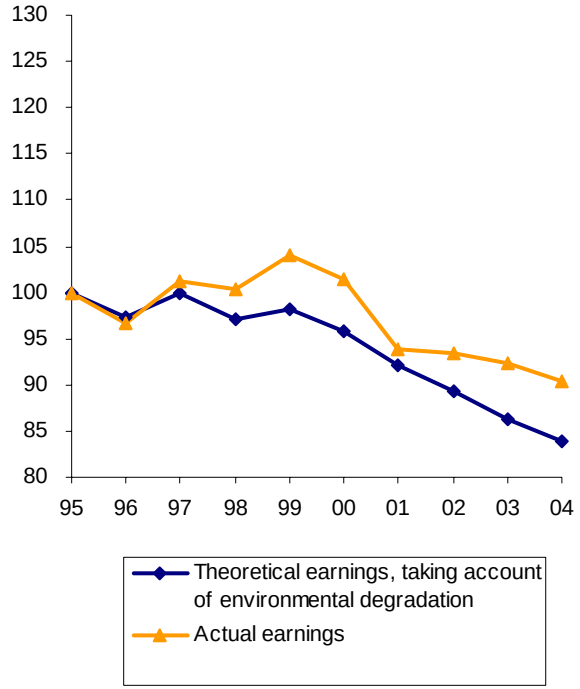


Figure 30 - Actual earnings versus expectations, adjusted for environmental degradation

Figure 31 – Regression statistics, actual earnings versus expectations, adjusted for environmental degradation	Variant 1	Variant 2	Variant 3
Multiple R	0.974369	0.972697	0.971338
R Square	0.949394	0.946139	0.943497
Adjusted R Square	0.908909	0.90305	0.898295
Standard Error	1.447146	1.492965	1.529138
Observations	10	10	10

7.09 The high degree of correlation portrayed by the above table confirms the result which is visually immediately apparent from figure 30, ie., that ER(env) throughout the period is very close to actual earnings.

7.10 In terms of proving what this dissertation set out to test, this result is in fact unrealistically close, and the high degree of fit must be viewed with extreme caution. The following observations are relevant:

- As already discussed, one of the weaknesses of the 'Times index' (compiled for certain factors in Chapter 5) is that as public concern grows on an issue, the extent to which it is aired in the press may increase at a higher pace than the actual degradation – the 'hysterical' effect. This was indicated when, for instance, traffic congestion was tested on both bases. It is also evident in figure 32, which shows that factors tested using the Times index had a higher degradation than others measured on more reliable data.

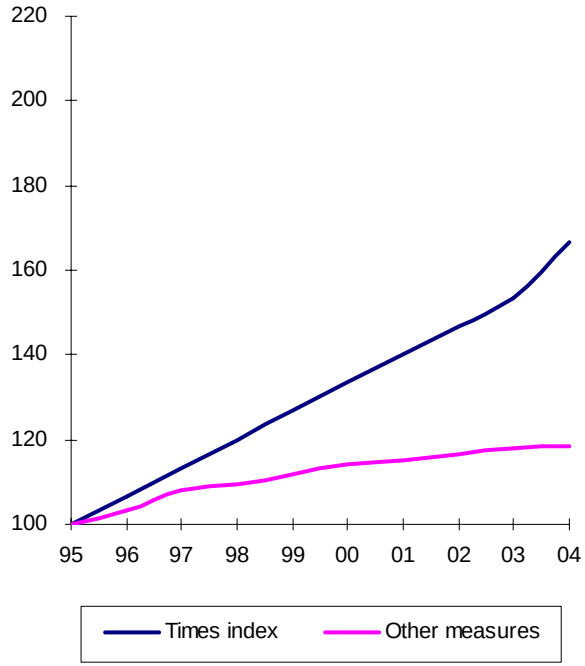


Figure 32 – The suspected 'hysterical' effect, based on Variant 1

A weighted average of the environmental factors assessed using the Times index, compared to an average of the factors assessed on the basis of statistical data.

- The environmental degradation index only measures changes since 1995 in some factors that tourists have specifically identified as negative. It ignores all the positive elements and does not seek to compile an index measuring changes in the environment as a whole. Even if this bias was absent, one would have expected that each 'x%' change in the degradation index would lead to a different percentage impact on earnings, probably a lower one. It would be useful for policymaking purposes if the coefficient that measures this relationship could be determined.

- The analysis ignores quality improvements. Malta has invested heavily in recent years. By ignoring this factor, the correlation analysis is in fact assuming that competing European resorts have invested equally heavily.

- All variants of the environmental degradation index (figure 23) are portraying a relatively straight line, ie., a relatively constant change in degradation. Its impact was therefore always going to be that of bringing ER and actual earnings (figure 28) closer to each other, without changing the shape of the ER/ER(env) line in the graph. The same effect would result from any other gradual economic impact which may exist and which this dissertation has not taken into account.

- In this respect the 10 year data restriction, and the various untested factors already listed in chapter 6, all serve to dilute the conclusions which may be reached from the study.

7.11 In spite of these limitations, however, the results shown in the analysis remain highly suggestive. If one accepts the results portrayed in figure 28 at face value, then Malta's earnings

from tourism in 2004 were Lm140 million less than should have been expected.[24] If environmental degradation accounted for only 50% - or 30% - of this amount, it would still be a material sum in the context of the local economy; one which could serve as a generous payback on the cost of the remedial actions that need to be taken. This is clearly an issue that matters.

7.12 To obtain independent feedback on the above, the key outcome of this chapter was discussed in some detail with two figures who are very knowledgeable on the industry – Mr Leslie Vella, Research Director of the MTA (also head of research for the European Travel Commission); and Mr Winston Zahra jnr, director of the Islands Hotel Group and until recently the president of MHRA. Apart from being acknowledged as leading experts on the industry, Mr Vella and Mr Zahra offer contrasting positions, the economist and the businessman, the representative of Government and the representative of the private sector.

7.13 The discussions with Mr Vella and Mr Zahra were based on the dissertation summary cum questionnaire given to them, a copy of which is set out on Appendix D. Their views are set out at Appendix E, and make interesting reading.

7.14 Where the objectives of this dissertation are concerned, the replies to one question matter most. Mr Vella thinks that environmental degradation may account for circa 21% to 40% of the current shortfall between expected and actual tourism earnings as portrayed in figure 28. Mr Zahra put this figure at between 41% and 60%. Neither of them – as expected – judged the impact of environmental degradation to be anywhere as material as figure 30 would suggest.

[24] Computed as approximately one third of total income from tourism (including transport earnings), by reference to the difference between ER and actual earnings in 2004

Chapter 8 Dissertation conclusions

8.01 This study is a step in a process that needs to be taken much further.

8.02 Its conclusions can be stated in simple terms as follows:

- There is ample evidence of increased environmental degradation in those issues which have been identified as bothersome by tourists

- There is an increasing gap between Malta's earnings from tourism and what one should expect, looking at how tourism numbers and spending are increasing in Europe as a whole

- There is a clear and close degree of correlation between environmental degradation and the shortfall in potential tourism income in Malta; this has been clearly established – for many operators in the industry, this was always self-evident

- The analysis performed in chapter 7, and the opinions expressed by relevant experts, indicate that the actual pecuniary loss being caused by environmental degradation may be very material. Substantial additional work however needs to be done before a reasonably accurate measure could be established.

8.03 The starting point to take the economic analysis further must be the proper quantification of the impact of environmental factors. This is not a straightforward task. Issues such as road

quality and hunting and trapping will require research to determine how best they could be reliably measured. But no doubt it will prove possible to deal effectively with the many areas where the approach taken in this dissertation is at best rudimentary.

8.04 As explained in Chapter 3, data is being collected regularly by NSO for monitoring environmental quality on a range of factors; but not on many of the factors that matter most to tourists. The point being made is that this mismatch needs to tackled.

8.05 A parallel objective should be that of building a comprehensive economic model for the industry, testing the various factors mentioned in chapters 6 and 7 that this dissertation does not tackle. Again, there are limitations as to what may prove possible, given the dynamics of the industry. The ultimate objective, however, is not perfection. It is, rather, that of assimilating sufficient relevant data such that, in due course as reliable environmental data is also accumulated, the relationship between environmental degradation and tourism earnings could be better understood through econometric analysis.

8.06 The significant gap in available data that faces researchers, Government and other interested parties matters. Effective policy making on tourism issues cannot be made in a vacuum. Decisions on public spending priorities need to be taken with a proper understanding of the related benefits. There is a feeling within many tourism entrepreneurs today, as explained by Mr Zahra, that decisions on environmental matters are made by Government on a gut feel of what Maltese citizens may feel is a priority at a personal level; ignoring the deeper repercussions on their earnings.

8.07 More than any other economic activity, tourism is an industry which impacts the nation in its totality – from the first impression given by a taxi driver at the airport, to the behaviour of a

Figure 33 – So much to offer

refuse collector in Valletta, and to the pleasantness shown by a check-in clerk or passport officer on departure. There is evidence that Malta – including its Government – has not quite grasped this. More awareness of relevant environmental issues, and of the impact they are having on tourism earnings, would be a step in the right direction to help address this need.

(9,847 words, excluding acknowledgements, appendices and bibliography)

Deriving an environmental degradation index - 1995 to 2004

Relevant factor	**95**	**96**	**97**	**98**	**99**	**00**	**01**	**02**	**03**	**04**
Quality of roads	100.00	101.67	103.33	105.00	106.67	108.33	110.00	111.67	113.33	125.00
Urban development	100.00	101.67	103.70	105.29	106.61	108.00	109.60	111.30	112.68	114.17
Traffic congestion	100.00	106.45	114.65	115.89	119.68	123.39	123.29	124.58	126.18	124.72
Urban cleanliness	100.00	105.56	111.11	116.67	122.22	127.78	133.33	138.89	144.44	150.00
Land fills	100.00	143.30	186.60	229.90	273.20	316.50	359.80	403.10	446.40	490.00
Hunting and trapping	100.00	117.33	134.67	152.00	169.33	186.67	204.00	221.33	238.67	256.00

2003 survey results

		Quality of roads	**Urban develop**	**Traffic**	**Urban cleanliness**	**Land fills**	**Hunting trapping**
% of tourists who rated the factors as negative:	**A**	84%	40%	39%	30%	0%	0%
% who rated factors as impacting negatively	**B**	0%	21%	0%	0%	11%	5%

Weighting assigned to variants	**Variant 1**	**Variant 2**	**Variant 3**
Factors in A	1.00	1.00	1.00
Factors in B	1.00	1.50	2.00

Deriving an environmental degradation index - 1995 to 2004 **(continued)**

	Quality of roads	Urban develop	Traffic	Urban cleanliness	Land fills	Hunting trapping	Total
Resultant weightings							
Variant 1	0.84	0.61	0.39	0.30	0.11	0.05	2.30
Variant 2	0.84	0.72	0.39	0.30	0.17	0.08	2.49
Variant 3	0.84	0.82	0.39	0.30	0.22	0.10	2.67
Resultant weightings (in % terms)							
Variant 1	36.5%	26.5%	17.0%	13.0%	4.8%	2.2%	100.0%
Variant 2	33.8%	28.8%	15.7%	12.1%	6.6%	3.0%	100.0%
Variant 3	31.5%	30.7%	14.6%	11.2%	8.2%	3.7%	100.0%

Environmental degradation Index	95	96	97	98	99	00	01	02	03	04
Variant 1	100.00	105.32	111.03	115.44	120.21	124.99	129.18	133.63	138.05	145.64
Variant 2	100.00	106.12	112.63	117.91	123.52	129.13	134.21	139.53	144.82	153.05
Variant 3	100.00	106.82	114.01	120.04	126.37	132.70	138.54	144.62	150.64	159.42
Expressed as declining rate										
Variant 1	100.00	94.95	90.07	86.63	83.18	80.00	77.41	74.83	72.44	68.66
Variant 2	100.00	94.23	88.79	84.81	80.96	77.44	74.51	71.67	69.05	65.34
Variant 3	100.00	93.62	87.71	83.30	79.13	75.36	72.18	69.15	66.38	62.73

Appendix B

Principal economic indicators - 1995 to 2004

	95	96	97	98	99	00	01	02	03	04
Earnings from tourism in Malta (source - NSO, in Lm' millions)	233	229	250	255	271	268	261	246	261	269
As above, expressed in 1995 prices (adjusted as per RPI)	233	225	236	234	242	236	220	206	214	215
Overall tourist spending in European countries (source – World Tourism organisation) In Euro bn, in real terms	210	218	230	238	240	249	252	257	252	260
Hotel capacity in Malta (source - NSO, in 000' beds)	37.54	37.86	38.98	38.33	40.30	40.65	41.38	41.08	41.53	41.53
Hotel capacity in Europe (note 1) (source - TourMIS, in million beds)	9.24	9.45	9.60	9.71	9.74	10.10	10.42	10.52	10.41	10.51
Number of tourists visiting Malta (source - NSO, in '000)	1,116	1,054	1,111	1,182	1,214	1,216	1,145	1,097	1,089	1,127
Tourist numbers in Europe, million (source - World Tourism Org)	322	335	353	367	371	393	388	397	399	414

Note 1 - The countries included in this total are Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Monaco, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and Turkey. No data of total bed stock was available on TourMIS in respect of the UK. Where data was missing in respect of certain countries in some years, this was calculated by extrapolation by reference to readings in other years. An assumed margin of error of +/- 10% in such extrapolations would have an immaterial impact on the aggregated numbers.

Measuring changes in the price level of the Maltese tourism product - 1995 to 2004

		95	96	97	98	99	00	01	02	03	04
Tourism spend (Lm' millions):											
Airline tickets (note 1)		113	103	112	112	111	112	105	104	106	106
Accommodation (note 2)		97	102	123	130	136	148	151	148	149	160
Other spend (note 3)		171	170	174	174	199	180	169	173	175	166
Total tourist spend		382	375	410	417	445	440	425	425	430	433
Tourism spend (in % terms):											
Airline tickets	A	29.7%	27.6%	27.4%	27.0%	24.9%	25.4%	24.7%	24.4%	24.7%	24.6%
Accommodation	B	25.5%	27.2%	30.1%	31.2%	30.5%	33.7%	35.4%	34.9%	34.6%	36.9%
Other spend	C	44.7%	45.2%	42.5%	41.8%	44.6%	40.9%	39.8%	40.7%	40.7%	38.4%
Total tourist spend		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Air fare prices											
Average yields earned by AM (Lm)	(note 4)	101.58	98.20	101.02	95.15	91.46	91.82	91.87	94.61	97.68	94.48
Expressed as index (1995 = 100)	D	100.00	96.67	99.45	93.68	90.04	90.40	90.44	93.14	96.16	93.01
Weighted to overall spend	A x D	29.71	26.68	27.24	25.29	22.44	22.96	22.38	22.75	23.79	22.90

Sources

(subsidiary workings supporting the data in this appendix will be made available to interested readers):

Note 1 Taken as total tourist arrivals (excluding cruise liner arrivals) multiplied by average Air Malta average price per ticket sold. Assumes, for the sake of simplicity, that tourists arriving by ferries (circa 2% of total) have an equivalent spend. Total tourist arrivals less arrivals on cruise liners extracted from National Office of Statistics (NSO) data. The weakness with this calculation is that it ignores changes in the mix (and length) of destinations flown. However figures of Revenue per Passenger Kilometer published by Air Malta (unfortunately only for scheduled services) show trends which are very similar to the average yield trend computed above.

Note 2 Extracted from NSO data on available accommodation stock and MHRA annual surveys of average revenue attained per available room by class of establishment.

Note 3 Based on NSO and MHRA data of total tourist spending on a holiday in Malta less (1) the cost of airline tickets and (2) accommodation expenses.

Note 4 Extracted from NSO data on air transport earnings and passenger numbers and other data published by Air Malta in its annual report.

Measuring changes in price levels of the Maltese tourism product (continued)

				95	96	97	98	99	00	01	02	03	04
Accommodation prices				(all data on accommodation derived from MHRA annual surveys performed by Deloittes and from NSO statistics on room stock)									
Supply	5 star	Beds	E	1,274	1,774	2,878	2,878	2,938	3,740	3,738	3,738	5,040	5,040
	4 star	Beds	F	10,846	11,311	13,715	13,558	14,725	16,093	16,954	17,265	17,642	17,642
	3 star	Beds	G	16,975	16,081	14,860	15,449	16,230	14,715	15,777	16,029	15,059	15,059
	Other	Beds	H	8,445	8,697	7,531	6,444	6,410	6,103	4,914	4,048	3,784	3,784
				37,540	37,863	38,984	38,329	40,303	40,651	41,383	41,080	41,525	41,525
Supply	5 star		E%	3.4%	4.7%	7.4%	7.5%	7.3%	9.2%	9.0%	9.1%	12.1%	12.1%
In % terms	4 star		F%	28.9%	29.9%	35.2%	35.4%	36.5%	39.6%	41.0%	42.0%	42.5%	42.5%
	3 star		G%	45.2%	42.5%	38.1%	40.3%	40.3%	36.2%	38.1%	39.0%	36.3%	36.3%
	Other		H%	22.5%	23.0%	19.3%	16.8%	15.9%	15.0%	11.9%	9.9%	9.1%	9.1%
				100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Average room revenue attained per available room (Lm per room daily) - includes income allocated to food and beverage													
	5 star		I	41.78	41.76	39.48	41.91	43.78	46.98	48.14	48.79	43.13	44.69
	4 star		J	18.29	18.56	20.02	21.66	22.49	21.04	20.57	19.83	18.96	20.51
	3 star		K	10.39	10.27	11.3	11.72	10.42	11.74	11.43	11.19	10.50	11.58
At 60% of 3 star rates	Other		L	6.23	6.16	6.78	7.03	6.25	7.04	6.86	6.71	6.30	6.95
Average room revenue earned index (1995 = 100)													
	5 star		I.1	100.00	99.94	94.49	100.30	104.78	112.44	115.21	116.77	103.22	106.95
	4 star		J.1	100.00	101.46	109.44	118.41	122.94	115.02	112.45	108.40	103.65	112.12
	3 star		K.1	100.00	98.83	108.74	112.78	100.27	112.98	109.99	107.68	101.04	111.44
	Other		L.1	100.00	98.83	108.74	112.78	100.27	112.98	109.99	107.68	101.04	111.44
Weighted average accommodation price index													
	5 star		E% x I.1	3.39	4.68	6.98	7.53	7.64	10.34	10.41	10.63	12.53	12.98
	4 star		F% x J.1	28.89	30.31	38.50	41.88	44.92	45.53	46.07	45.56	44.03	47.63
	3 star		G% x K.1	45.22	41.98	41.45	45.46	40.38	40.90	41.93	42.02	36.64	40.41
	Other		H% x L.1	22.50	22.70	21.01	18.96	15.95	16.96	13.06	10.61	9.21	10.15
			M	100.00	99.67	107.94	113.84	108.89	113.74	111.47	108.81	102.41	111.18
Weighted to overall spend			B x M	25.55	27.09	32.44	35.50	33.16	38.30	39.50	37.97	35.44	41.06
Total revenues earned				97	102	123	130	136	148	151	148	149	160

[FGHI] * 365/1.8 (typical ratio of beds to rooms) * [JKLM] in Lm'millions

Measuring changes in price levels of the Maltese tourism product (continued)

		95	96	97	98	99	00	01	02	03	04
Prices of other elements of tourist spending											
Retail price index (1995 = 100)	N	100.00	101.72	106.01	108.69	112.26	113.51	118.76	119.14	121.98	125.42
Weighted to overall spend	C x N	44.75	46.00	45.11	45.45	50.10	46.46	47.28	48.48	49.59	48.22
Summary											
Air fares component	A x D	29.71	26.68	27.24	25.29	22.44	22.96	22.38	22.75	23.79	22.90
Accommodation component	B x M	25.55	27.09	32.44	35.50	33.16	38.30	39.50	37.97	35.44	41.06
Other local consumption	C x N	44.75	46.00	45.11	45.45	50.10	46.46	47.28	48.48	49.59	48.22
Overall price index (in Lm)		100.00	99.77	104.79	106.24	105.69	107.72	109.17	109.19	108.82	112.18
Overall price index (in Lm) - corrected for infla inflation		100.00	98.08	98.85	97.75	94.15	94.89	91.92	91.65	89.22	89.45
Average annual exchange rates as published by CBM											
£STG		1.7961	1.7780	1.5825	1.5547	1.5468	1.5080	1.5430	1.5378	1.6237	1.5853
Euro		2.1669	2.1852	2.2921	2.2957	2.3470	2.4741	2.4815	2.4468	2.3470	2.3368
Average UK tourist component		41%	38%	39%	38%	35%	35%	41%	42%	43%	40%
Weighted average exchange rate		2.014	2.031	2.013	2.014	2.069	2.133	2.100	2.061	2.033	2.035
Lm index converted to tourists' currency		201.38	199.20	199.01	196.88	194.75	202.42	193.00	188.85	181.42	182.06
Expressed as index (1995 = 100)		100.00	98.92	98.83	97.77	96.71	100.52	95.84	93.78	90.09	90.41

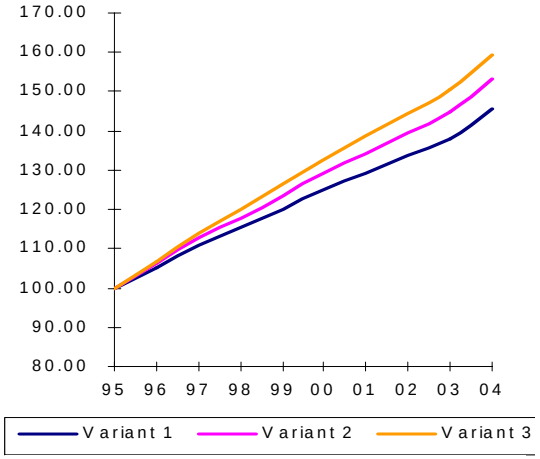
Summary of dissertation discussed with Mr Vella (MTA) and Mr Zahra (MHRA) - Page 1

Building an environmental degradation index

1. MHRA/Deloitte 2003 survey identified what environmental weaknesses mattered most to tourists, and to what extent
2. This provides a clue as to (a) what negative factors should be evaluated in deriving an environmental degradation index of relevance to tourism and (b) what weighting to give to each factor
3. This index has been compiled, for the years 1995 to 2004, from the following sources:

Urban density	% of built up area
Traffic congestion	Number of vehicles less increases in size of road network
Condition of roads Urban cleanliness Hunting and trapping Landfills	Based on a 'Times index', ie., the number of articles on the topic which have been carried each year in the Times of Malta, reflecting public concern on the issues

4. The index which emerged is illustrated opposite.
5. During the same period, hoteliers invested heavily in upgrading their product



Summary of dissertation discussed with Mr Vella (MTA) and Mr Zahra (MHRA) - Page 2

Malta's earnings from tourism

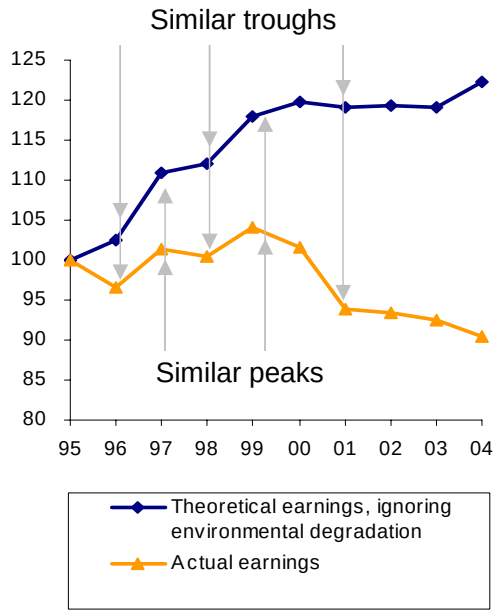
1. Malta's earnings from tourism have clearly lagged behind expectations
2. The graph below shows what Malta's earnings could have been assuming:

   That European spending (A) represents the available demand
   That growth in local accommodation supply (B) represents Malta's competitive ability to take its fair portion of the growth in the market
   That growth in European accommodation (C) represents the extent of similar competition from other European countries

   That Malta's 'theoretical' income = $A \times \frac{B}{C}$

3. Theoretical income is compared in the graph to actual earnings (also expressed in real terms)
4. The extent of similarity is remarkable
5. Would have also liked to chart quality (local upgrading of hotels compared to Europe wide upgrading), but did not locate suitable data for Europe.

Question - Do you think that Europe as a whole has invested as much as Malta has in recent years?



Summary of dissertation discussed with Mr Vella (MTA) and Mr Zahra (MHRA) - Page 3

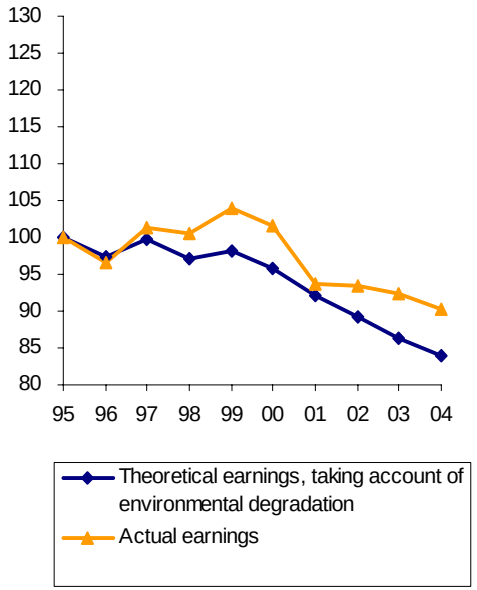
Could environmental degradation explain the gap?

1. The chart just seen shows two sets of data with very similar trends, but at the same time being pulled apart by some other unknown factor which is driving Malta's income to a level well below expectations
2. To test whether environmental degradation - as computed - could be the explanation, theoretical earnings were adjusted by the environmental degradation index.
3. The results show an extraordinarily close fit - see chart.
4. Which must mainly be co-incidental, as there are a host of relevant factors which the study does not cater for …
5. … apart from the index being an approximate guess, at best

Question - Hotel operators have been complaining bitterly about the degradation in the environment in recent years.

To what extent do you think that environmental concerns have contributed to the shortfall in earnings when compared to Europe as a whole?

Between
0% and 20%
21% and 40%
41% and 60%
61% and 80%
81% and 100%?



Summary of dissertation discussed with Mr Vella (MTA) and Mr Zahra (MHRA) - Page 4

Other factors impacting tourism earnings

	Improved	The same	Worse
Which other factors, not quantified in my study, do you think are also having a material impact:			
• Changes since 1995 in marketing spend and effectiveness thereof			
• Changes since 1995 in adequacy of transport links compared to Europe as a whole?			
• Changes since 1995 in popularity of European Mediterranean resorts compared to the rest of Europe?			
• Changes since 1995 in the bargaining strength of the tour operators			
• Changes since 1995 in distribution channels, eg., more direct bookings via internet			
• Changes since 1995 in the quality of other amenities offered to tourists apart from hotels			
• Other factors which you believe are very relevant:			

Views expressed by Mr Vella (MTA) and Mr Zahra (MHRA)

Mr Vella	Mr Zahra
The outcome portrayed in figure 28	
Very interested in high degree of correlation portrayed in this graph. Thinks that choice of European total tourism earnings as a demand substitute is valid, also because a holiday to Malta is a half way house between a city break and a seaside resort holiday – Malta's mixed character as portrayed in chapter 2.	Data over a number of years suggests that Mediterranean resorts have fared less well than Europe as a whole. Part of the gap between expected earnings and actual earnings as shown in figure 28 may be simply due to this
Quality improvements (see D.2)	
Malta has invested heavily in improving a number if its amenities, in particular its hotel stock. Many competing resorts, such as Tunisia, Red Sea area of Egypt, have done likewise. But when compared to Europe as a whole, Malta has possibly invested slightly more than the average.	Similar views expressed
The impact of environmental degradation on the shortfall between expected and actual earnings (see D.3)	
Accounts for circa 21% to 40% of shortfall.	Accounts for circa 41% to 60% of shortfall.

Views expressed by Mr Vella (MTA) and Mr Zahra (MHRA) - Continued

Mr Vella	Mr Zahra
On other factors which may be contributing to the shortfall in earnings (see D.4)	
Thinks that all the factors mentioned have an impact, to varying degrees. Would also add over-supply of accommodation, both in Malta and in Europe as a whole, as a relevant factor.	Believes that the Malta product is tired and is in dire need of rejuvenation. In the meantime, tour operators clearly have an edge in annual bargaining rounds – it is a buyer's market, where the hotels are price takers.
Mr Vella agreed with the overall need to invest substantially in upgrading Malta's environmental lapses, where this is possible. We cannot undo Malta's large built up area, but we can make many improvements which matter in other areas.	Mr Zahra believes that substantial improvements have been made by the private sector to bring about the rejuvenation required. But this upgrading must be accompanied by (1) a similar investment by Government to upgrade the environment, and (2) a larger and more sustained marketing and re-branding effort.
Mr Vella echoed Mr Zahra's concern that various arms of Government may not fully understand the complexities of the tourism industry and the need for quality, consistency and focus in how tourists' needs are met. He emphasised the need for additional tourism education and awareness within all aspects of Government if the difficulties of the industry had to be addressed.	Given that these needs are so obvious, MHRA fears that Government does not fully understand the dynamics of the industry.

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