

UNIVERSITY OF MALAWI

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DETERMINANTS OF INTERNATIONAL TOURISM IN MALAWI

M.A. (Economics) Thesis

BY

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fulfillment of the requirements for a Master of Arts Degree in Economics**

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CANDIDATE DECLARATION

I declare that this thesis is my own work and that it has not been submitted for a degree in any university. Acknowledgements have been made where work of other people has been used.

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CERTIFICATE OF APPROVAL

We declare that this thesis is from the student's own work and effort and where she has used other sources of information, it has been acknowledged. This thesis has been submitted with our approval.

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DEDICATION

To my mum and dad, my husband and my son Mwaiwathu for the encouragement and support

ABSTRACT

International tourism is a fast growing industry generating half a trillion dollars in annual revenues and accounting for almost 10% of total international trade, and almost half of total trade in services. However, it has so far failed to receive the attention it deserves from mainstream economics. This study has investigated the determinants of international tourism in Malawi by estimating three tourism demand models, one for UK tourist, the other for South African tourist and an aggregate model. This is due to the fact that about 44% of international tourists to Africa come from Europe and about 41% from Africa itself.

The study has shown that tourism demand is well explained on the aggregate as compared to the analysis per individual tourist origin. This study has attempted to highlight some of the most important determinants of international tourism in Malawi. According to empirical results, domestic tourism prices have a negative impact on international tourism demand in Malawi; therefore, while efforts are being made by the government of Malawi to improve tourism into the country, more effort is needed by way of having a stable economy with stable price levels.

The other determinants of international tourism that have been found to be statistically significant are the income in the origin country, the previous period level of tourist that came to Malawi and the real exchange rate between the Malawi Kwacha and the currency of the tourist origin country.

CHAPTER ONE

INTRODUCTION

1.1 Background

According to the World Tourism Organization (WTO), an international tourist is any person who travels to a country other than that which she has her usual residence but outside her usual environment for a period not exceeding twelve months and whose main purpose of visit is other than the exercise of an activity remunerated from within the country visited. The travel and tourism industry has emerged as one of the fastest growing industries in the world generating more than US\$3.0 trillion per year (Walsh, 1996). The World Travel and Tourism Council (WTTC, 1994) estimated that tourism is the world's largest industry, responsible for 10 percent of world's GDP (WTO, 2005). Consequently, sustaining this industry has become an integral part of government policies in many countries.

Tourism is also promoted as a remedy for persistent balance of payment deficits most developing countries face. This has resulted from the view that demand and supply conditions that characterize the trade in travel services are favorable to most developing countries. On the demand side it has been pointed out that receipts from international tourists have been growing faster than world exports of goods with an annual increase between 1950 and 1970 of 11% as compared to 9% on exports of goods and services and only 6% for those of primary products (Diamond, 2004). In 1970 international tourism accounted for 6.5% of total exports as compared with 3.4% in 1950. Tourism has been pictured as an economic activity of fairly simple technology, using resources such as sunshine, scenery and manpower existing in abundance in these developing countries. It is often argued that not only can tourism relieve the shortage of foreign exchange constraining industrial expansion and alleviate the growing problem of urban unemployment but also that in the long run it will provide a price and income elastic

substitute for primary exports facing less favorable demand conditions on the world market (Diamond, 2004).

Tourism has a potential to contribute significantly to economic growth and development in Africa and is “profoundly” important through its effects on employment, exports, stimulation of infrastructure provision, and generation of tax income (Naude and Saayman, 2004). The tourism sector is already a growing contributor to GDP and exports in more than half of all African countries. In particular, since the early 1990s there has been a significant growth in tourist arrivals in Africa.

According to the WTTC, travel and tourism industry generated US\$39.8 billion of economic activity in Sub-Saharan Africa in 2003, contributed 2.4% to the region’s GDP and provided 5.4% of all employment in Sub-Saharan Africa (WTTC, 2004). Despite its positive endowments and good growth in tourism over the past decade, Africa’s tourism potential is underutilized and undeveloped. In 2002 Africa attracted less than 4% of total international tourists, and received less than 2% of international tourist expenditure (WTO, 2005). More specifically, in 2001 Africa received about 27.7 million international tourists and total tourism receipts of US\$ 11.7 billion. This means 3.7 arrivals per 100 of population, which compares poorly with the world average of 11 and the 44 per 100 in Europe (WTO, 2005). In Sub-Sahara Africa, only South Africa is amongst the top 40 global tourist destinations and only 13 of the 315 “Leading Hotels of the World” are situated in Africa (Naude and Saayman, 2004). Table 1, below shows the number of tourist arrival according to region in Africa from 1990 to 2002:

Table 1: Tourism Arrivals in Africa (millions)

	1990	1995	2000	2001	2002	Share
World	455.9	550.4	687.3	684.1	702.6	100
Africa (total)	15.0	20.0	27.4	28.3	29.1	4.1
North Africa	8.4	7.3	10.1	10.6	10.3	1.5
West Africa	1.4	1.9	2.6	2.7	2.9	0.4
Central Africa	0.4	0.4	40.7	0.7	0.7	0.1
East Africa	2.8	4.5	5.9	6.2	6.3	0.9
Southern Africa	2.0	6.0	8.2	8.2	8.9	1.3

(Source of data: Naude and Saayman, 2004)

The table above shows that Central Africa receives only 2.4% of the total number of tourists to Africa with 36.5% going to North Africa, 31.7% going to Southern Africa and 9% and 22% going to West Africa and East Africa respectively.

Tourism contributes to the conservation and preservation of protected areas through ecotourism and to the balance of ecological, social and economic aspects of the environment. The tourism industry as a whole generates substantial economic benefits to both the host countries and the tourist home countries. For developing countries the primary motivation for promoting themselves as tourist destinations is the expected economic improvement and development. The main positive impacts of tourism relate to foreign exchange earnings, contribution to government revenues and the generation of employment and business opportunities. Tourism expenditures and the import and export of related goods and services generate income to the host economy and can stimulate the investment necessary to finance growth in other sectors. Government also benefits in the form of raising revenue through taxes on income from tourism employment and tourism business and by direct levies on tourists, such as airport departure taxes. Revenue can also be collected indirectly from taxes and duties levied on goods and services supplied to tourists.

However, despite the continued enthusiasm of international agencies on international tourism, many developing countries have become skeptical of tourism benefits. Criticism has tended to focus on tourism's non-economic effects, especially its 'corrupting' influence on the resident population. Other social costs of encouraging mass tourism result from the congestion caused in favored locations that diminishes their overall attractiveness and the destruction of amenity by over concentrated building or ribbon development.

1.2 Tourism in Malawi

Malawi is a scenically attractive country but it possesses a limited range and quantity of tourism related resources and these remain largely undeveloped. The dominant feature is Lake Malawi that offers scenic appeal and the possibility of water based activities. It supports over 800 species of fish, many of which are indigenous. The wide-scale utilization of the lake for tourism purposes, however, is constrained since development opportunities exist in localized areas only (Government of Malawi, 2002).

The extensive mountainous terrain provides the opportunity for very attractive areas, with mount Mulanje and Zomba plateau as outstanding cases. The mountains provide opportunity for extensive and varied hiking, trekking and soft adventure and recreational pursuits. In addition, Malawi has some nine national parks and wildlife reserves that come under the Department of Parks and Wildlife. Some are located in very attractive surrounding, particularly Liwonde, Lake Malawi and Nyika National Parks, but all suffer from a severe shortage of financial support that would permit them to develop as important tourist attractions at international level. There is a distinct shortage of both inexpensive lodges and campsites, as well as tourist accommodation of an international standard to permit the full development of tourism in Malawi (Government of Malawi, 2002).

In Malawi the share of tourism expenditure in GDP has been increasing from 1.7% in 2000 to 2.5% in 2003 (WTO, 1999-2003). Despite this perceived benefit to the country from tourism, in the early 1990s all campsites and lodges inside national parks and wildlife reserves in Malawi were of poor quality (Lonely Planet as quoted in Tyynela and Rentala, 2001). The Malawi government maintained a prominent position in the tourism and hospitality sector through parastatal involvement in hotels and resorts up until 1997. The government was involved in the operation of camps in five national parks and four game reserves as an extension of the activities of the Department of Parks and Wildlife, as well as the operation of forestry lodges owned by the Department

of Forestry and several inns and rest houses owned by the Department of Tourism and Local Government respectively.

In order to realize the enormous potential that exists in the tourism sector and especially for the long distance and multi country tourists, the Malawi government embarked on the privatization of the hospitality facilities from 1997. This was done in order to increase efficiency and competition in the industry and local ownership of the facilities. Privatization of facilities in this sector was also aimed at improving service delivery so that tourism could be improved to benefit the economy. Although some of the tourism facilities have not gone to local entrepreneurs, Kaluwa (2000) argues that considerable strides have been made in linking Malawi to the regional tourism circuit by giving concessions to groups with investment capacity and networks within and outside Malawi such as Central African Safaris.

The Malawian tourism sector is under-invested and underdeveloped compared to countries such as Kenya where the sector is a major foreign exchange earner and influences the exchange rate (Kaluwa 2000). The Malawi government has undertaken to ensure a rapid evolution of a tourism industry of a size and structure, which will maximize foreign exchange earnings, create new rural employment opportunities and promote a favorable image of Malawi abroad. Malawi generated a total of \$138.7 million in 2000 and it was projected that this would grow to \$195.9 million in 2010. It was further estimated that the total demand for goods and services generated by the tourism sector amounted to \$157.4 million in 2000 and that it would grow to \$400.6 million by 2010 (Government of Malawi, 2002, P. 286).

The Malawi government formulated a Five-years Strategic Tourism Development Plan in 2002 whose overall objective is to establish a framework for the development of the tourism sector. The plan also included the development of a tourism policy, which does not view the sector as a source of significant economic benefits in the short term but is aimed at creating a sound basis for the development of the sector in the medium and long term (Government of Malawi, 2002, P. 5). The Ministry of Tourism, Parks and Wildlife has projected a huge potential for tourism in generating foreign exchange and a

contribution of nearly 4% of GDP by 2010. The travel and tourism industry contributed \$52.8 million to the GDP of the country representing 2.8% of total GDP in 2000. The direct and indirect effects resulted in the generation of 163,000 jobs or 6.4% of total employment through linkages with other sectors such as crafts, hotel construction and services. Employment in the sector is expected to grow to 235,000 jobs or 7.1% of total employment by 2010 (Government of Malawi, 2002,P. 286).

Better results are therefore expected to depend on good management of the natural resources and complementary facilities, which attract long distance tourists and the need for solutions to the constraints being faced in tourism development in Malawi. These constraints include international access into Malawi, tourism product development, seasonality, licensing and planning regulations and visitor harassment. Despite the efforts being made by the Malawi Government to improve tourism, Malawi remains unknown to most of the world. Flying to Malawi from the major tourism generating markets is the major hurdle to the development of international tourism in Malawi, more especially the inability to fly directly to Malawi and with a competitive fare (Government of Malawi, 2002).

With the exception of a few international flights, it is not usually possible to fly to Malawi from Europe without a change in aircraft at a regional hub such as Nairobi, Johannesburg and Harare. According to Government of Malawi (2002), the tourism product is relatively underdeveloped, with limited accommodation facilities suitable for international tourists. It is estimated that there are less than 200 rooms or equivalent accommodation units in the country that would meet the requirements of international higher spending tourists.

1.3 Problem statement and relevance of the study

Even though tourism is a growing global industry with tremendous potential for further growth, mainstream economics has paid little attention to it. According to Clerides (2003) economists have paid only a small part of their attention to international trade in

services and most of that is directed towards the financial services. In addition, despite the perceived importance of tourism, most developing countries are not benefiting fully from tourism despite being well endowed in natural resources and tourist attractions. Studies on tourism mainly have concentrated on determinants of tourism in developed countries as opposed to developing countries

The study is therefore intended to find out the factors that determine international tourism in Malawi so that policy recommendations can be made for the improvement of tourism in the country. The motivation of the study is the desire to see how various factors have impacted on the tourism industry in the country. This will be achieved by estimating a tourism demand model for two different origins and an aggregate function. The two origins in the study are United Kingdom representing the overseas tourists and South Africa representing tourists from Africa to Malawi. The choice of these two countries is based on availability of data and also that a substantial proportion of international tourists to Malawi come from European countries and Africa itself. According to Naude and Saayman (2004), 44% of international tourists to Africa are from Europe and about 41% are from within Africa and a small percentage is from America and Asia.

The study is therefore important, as this will be of much help to policy makers. The prediction of long-term demand for tourism helps in the appraisal of projects of infrastructure related to tourism and government macroeconomic policies largely depend on the relative importance of individual sectors within a destination.

1.4 Objectives of the study

The overall objective of the study is to investigate how various social economic factors and government policies have influenced international tourism in Malawi. This overall objective will be achieved by considering the following specific objectives:

1. To investigate if privatization has led to an improvement in service delivery in the hospitality sector and if it has improved attractiveness of Malawi to international tourism.
2. To investigate if income in an origin country affect the number of international tourists into Malawi.
3. To investigate if the real exchange rate affects the number of international tourists coming into Malawi.
4. To investigate if previous period tourists to Malawi influence future trends in tourists into Malawi.

1.5 Hypothesis

The hypotheses to be tested to achieve the above objectives are:

1. Privatization in the hospitality sector does not affect the number of international tourists into Malawi
2. Income in an origin country does not affect the number of international tourists coming into Malawi.
3. The real exchange rate does not affect the number of international tourists coming into Malawi.
4. Previous period tourists do not affect future period tourists into Malawi.

1.6 Organization of the study

The rest of the paper is organized as follows: chapter two will provide a review of the related literature, which will include theoretical literature and empirical literature. Chapter three will present the methodology and the model formulation. This will be followed by chapter four, which will present the empirical results and the analysis of the results. Conclusions and policy recommendations will be presented in chapter five.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Not much emphasis has been put on tourism as an economic activity in the service industry as compared to the financial sector. As such, not much theoretical literature has been written on tourism itself as compared to the determinants of international tourism. This chapter will provide a theoretical and empirical background of this study mainly with regard to the determinants of international tourism.

2.2 Theoretical literature

International tourism flows can be treated as a demand for differentiated products, where different destinations are viewed as different products supplied (Eilat and Einav, 2004). In international tourism, as in other types of trade in services, the exporting country supplies itself and not only its products. Each country of origin in each time period is treated as a separate demand market. The consumer in each market makes the discrete decision regarding his or her most preferred destination. Hence the theory of demand and consumer choice is used to explain international tourism. Demand theory aims to analyze the choice that individuals make between the goods and services that are available to them. A good can be defined as any tangible or intangible object, which any individual in society may conceivably wish to acquire or use under some circumstances, or which any consumer cannot help acquiring under some conceivable circumstances (Simmons, 1974).

Naude and Saayman (2004) modeled international tourism demand for Africa by assuming a strongly separable utility function, where the individual consumer (tourist) follows a two-stage utility maximization procedure. In the first stage, the consumer decides how much expenditure to allocate between various consumption goods. One of these goods is tourism in Africa. Once this decision has been made, the second stage of utility maximization consists of allocation of total African tourism expenditures

amongst African countries (destinations). The two-level utility function is presented as follows:

$$U(q) = F[U^1(q_1), \dots, U^n(q_n)] \quad (1)$$

Where $U^j(q_j)$ is the sub-utility function, which will consist of African tourism (q) consumed in the j th country as one of the goods (out of n -number of African destinations to choose from). A feature of tourism as a consumption good is that it is characterized by taste formation. Past consumption of tourism in a particular country/destination will therefore affect present consumption. The taste formation is incorporated by including past consumption of tourism in the utility function and denoted q_{jt} to be the consumption of tourism ‘produced’ in country j in period t . In the second stage of utility maximization procedure, sub-utility is maximized conditional on expenditure allocated to African tourism goods in the first stage and denoted e_t . More formally, the demand function for tourism from a particular African country is obtained by maximizing:

$$\bigcup_j (q_j | q_{t-1}) = \prod_{j=1}^n (q_{jt} - k_{jt})^{\delta_j}, \sum_{j=1}^m \delta_j = 1, \quad (2)$$

Subject to the constraint,

$$\sum_j p_{jt} q_{jt} = e_t \quad (3)$$

Where p_j = the price of tourism produced in African country j .

Where $k_{jt} = y_{jt} + y_j q_{jt-1}$. Here y_{jt} is positive and represents the minimum consumption requirement in period t , and $y_j q_{jt-1}$ is the consumption based on past consumption. The resulting individual demand function is written as:

$$q_{jt} = y_{jt} + \lambda_j q_{jt-1} + \sum p_{ij} y_j + \delta_j / p_j (e_t - \sum p_j \lambda_j q_{jt-1}) + \varepsilon_{jt} \quad (4)$$

the demand for tourism above can be simplified and written as follows:

$$q_{ijt} = \chi_i \beta + c_j + u_j \quad (5)$$

Where

q_{ijt} = Demand for international tourism by origin i for African destination j

χ_j = a vector of tourism demand explanatory variables which includes income in the origin country, tourism prices, real exchange rates, past tourism consumption.

According to Eilat and Einav (2004), tourism supply in the long run is inelastic with respect to total tourism costs. This is so because the most important factors of production in tourism are non-substitutable and non-rival, for example, the beach and game reserve. They therefore determine the level of demand, but their supply does not respond to price. Eilat and Einav (2004) describe tourism as a form of international trade in services. However, the Heckscher-Ohlin paradigm, which is the main departure point for both theoretical and empirical international trade literature, explains trade flows mainly based on relative factor endowment. This approach is attractive once factors of production can be adequately approximated by labor and capital. For tourism, however, the most important ‘factors of production’ are unique and hard to quantify or measure, such as beaches and game parks.

Tourism demand is one of the more complex aspects of tourism, definable and measurable in a variety of ways and at a range of scales. According to Walsh (1996), the most important data for tourism demand modeling is that of the number of people involved, with information about the flows of tourists contributing as the key input into policy decisions. Demand as future participation, is viewed as a function of many variables and not just price. The knowledge of the anticipated mix and values of the other variables is needed. While including more variables, the focus is only on the estimation of a single value.

2.3 Empirical literature

The determinants of tourism demand depend on the purpose of visit with approximately 70% of international tourist trips taking place for holiday purposes, 15% for business purposes, 10% in order to visit friends and relatives and 5% for other purposes such as pilgrimages or health purpose (Song and Turner 2004). The emphasis in empirical research on tourism demand modeling has been on holiday tourism, with only a few studies concerned with business tourism.

A number of empirical studies conducted on tourism demand have shown that international tourism depends on a number of economic variables including income in the tourist origin country, tourism prices in the destination country, exchange rates, destination risk and qualitative effects. Long haul tourism is usually regarded as a luxury product and as such it is modeled as a double log linear function. The literature on international tourism demand modeling is usually of two types. The first consist of studies that use time series estimation techniques including testing for cointegration on one or several pairs of countries. The second type includes studies that estimate the determinants of tourism demand using multiple regression models (Eilat and Einav, 2004).

Single equation models of tourism demand were the first models to be used in the field of tourism demand modeling. The multiple regressions were introduced later and these mainly apply cross-sectional Ordinary Least Squares techniques. The division of single equation and system of equations models is based on the number of measurement equations of tourism demand rather than simply the number of equations in the model (Song and Turner, 2004)

The long run structural model called the Almost Ideal Demand System (AIDS) model adapted from Deaton and Muellbauer (1980) has been used in modeling tourism demand in France (DurbARRY, 2005). According to the results of this study, it was established that France's long run out bound tourism demand is price sensitive in UK,

Spain and Italy. De Mello, Pack and Sinclair (2002) found that the AIDS model allowed for comparison of changes in the behavior of UK tourism demand in each of its neighboring countries over time, not only in terms of the values of the expenditure and own-price elasticities, but also those of the cross-price elasticities.

Panel data analysis has also been used in modeling tourism demand, for example Eilat and Einav, (2004) applied a discrete choice estimation technique to a large three-dimension data set of tourist flows. The main findings of this study were that tourism to developed countries has an own-price elasticity of about one while to developing countries, tourism demand does not respond to prices. Destination risk was also found to be very important in destination choice for both developed and developing countries. Political stability, tourism infrastructure, marketing and information and the level of development in the destination were also found to be key determinants of travel to Africa (Naude and Saayman, 2004). Naude and Saayman, (2004) used a panel data analysis on tourist arrivals in 43 African countries, taking into account the country of origin of tourists. Eugenio-Martin, Morales and Scarpa (2004) used the Arellano-Bond estimator for dynamic panels and obtained estimates of the relationship between economic growth and growth in tourist per capita conditional on main macroeconomic adequate levels of infrastructure, education and development to attract tourists. Medium income countries need high levels of social development like health services and high GDP per capita levels. The results also disclose that tourism price of the destination is irrelevant for tourism growth. However, Latzko (2004) established that the number of Japanese visitors to Hawaii co-moves most strongly with fluctuations in relative prices.

The inclusion of the exchange rate variable to explain tourism demand usually stems from either its influence on price or the proposition that travelers are mostly concerned with the price of foreign currency and it is expected that if the price of foreign currency decline then, travelers will demand more foreign travel services, *ceteris paribus* (Walsh, 1996). Changes in exchange rates can alter the cost differential between domestic and foreign holidays, so that despite relatively stagnant economies, increases in holidays abroad may be experienced. Nominal exchange rate changes can have predictable effects on tourism demand patterns since the rate of exchange is regarded as a prime

indicator of expected prices. Walsh (1996) found that travelers to Ireland concerned themselves with the price of foreign currency with corresponding elasticities ranging from 0.5 to 2.6. She also found sensitivity to exchange rate movements in both USA and British tourism demand models for Irish tourism. Market exchange rate are normally a poor guide to the real purchasing power of currencies. It is the actual movements in real exchange rates that provide a more reliable estimate since these are market rates adjusted for movements in price levels in the home country compared to destination countries. However, the interpretation of the exchange rate variable is not quite straightforward as observed by Walsh (1996). The assumption that all things will remain constant with the change in real exchange rates is not possible in reality. Walsh (1996) also refers to a study in the economist (1978) which highlights the fact that countries with a depreciating exchange rate had generally shown a larger growth in tourist receipts than in expenditure and that the opposite (with exceptions) was true for countries with an appreciating currency. If the exchange rate changes and the origin country's currency becomes stronger, it is unlikely that all other variables will remain constant unless price levels exactly offset the effect of the change in exchange rate. This study will use the real exchange rate between the Malawi Kwacha and the currency of the tourist origin country.

In Malawi foreign exchange market has gone through different systems since 1971 when the Malawi Kwacha was introduced. Prior to 1994, the foreign exchange market was mainly managed. During the period 1984 through 1992, the Malawi Kwacha underwent a total of seven devaluation episodes that were generally undertaken to correct overvaluation of the local currency (Uka, 2000 P. 18). In a continuing effort to improve external competitiveness and also to encourage diversification of domestic production, the exchange rate was liberalized and the Malawi Kwacha consequently floated in 1994. The floatation of the Malawi Kwacha was accompanied by the removal of exchange controls. This entailed the introduction of an inter-bank market whose demand and supply conditions were to determine the exchange rate. This study seeks to find out if this floatation of the Malawi Kwacha had any significant influence on international tourism in Malawi.

Income in the tourist origin country is another determinant variable of international tourism. Naude and Saayman (2004) argued that discretionary income, defined as the remaining income after spending on necessities in the country of origin, should be used as the appropriate measure of tourist income in the demand model. However, this is a subjective variable and the data cannot be easily obtained in practice and therefore alternative measures of income have to be used as proxies for tourist discretionary income (Song and Turner, 2004). This study has used real per capita GDP as a proxy. The larger the real per capita income of a country, the more likely its citizens can afford to purchase travel services abroad *ceteris paribus* (Mary Walsh, 1996). Growth in real income provides consumers with increased spending power. Walsh (1996) for example found that real income in the origin countries was very important in determining tourist demand in Ireland. The relationship between income in the origin country and tourism demand was also confirmed. Katafono and Gounder (2004) used cointegration and error correction techniques to construct a double log-linear tourism demand model for Fiji. Both the long-run and short-run results indicated that income of Fiji's major trading partners was positively related to international tourism demand in Fiji. Contrary to expectations, relative prices were found to have a positive relationship with tourism demand. In examining the relationship between income and tourism demand, once one achieves a certain level of income, the income elasticity will increase initially, then it will remain approximately constant for a range of income. Ultimately, it will decrease as it is unlikely that tourism's share of expenditure out of GDP can grow indefinitely. This is based on the hypothesis that after a certain point, the amount of utility accruing to an individual from a holiday may decline as the number of tourists enjoying utility from the same holiday increases (Walsh 1996).

According to empirical literature, foreign tourism from a given origin is also expected to depend on the population in the origin country, an increase in population resulting in increased demand (Song and Turner 2004). In general, demand for foreign tourism from a country with relatively small population would rarely approximate to that of a country with a large population even if the propensity to travel of the small country were higher. This is because the amount of potential customers in a market to buy a commodity is higher in the highly populated country (Diamond, 1977). In this study, transforming the

GDP variable into real per capita terms has incorporated population in the origin countries. The present study has adopted Walsh (1996) single equation double log linear model. A number of studies have used the double log-linear model to linearise the relationship between the demand for tourism and its determinants since long haul tourism is viewed as a luxury product (Song and Turner, 2004).

Social or political disturbances and non-price factors have been found to have a very pronounced short-term impact on tourism demand. Privatization is said to have the desired effects of improving efficiency if competition is also increased in a particular market. This brings in the issue of market contestability, size distribution and regulation (Chirwa, 2002). Privatization will increase efficiency in a market if there are no significant barriers to entry and no natural monopolies. Privatizing a natural monopoly would lead to increased prices thereby foregoing allocative efficiency although there may be an increase in operational and productive efficiency. Chirwa (2002) notes that in an international study of the effects of privatization on performance of firms, based on a three year window before and after privatization conducted by Megginson et al (1994), evidence was found of improved financial and operating efficiency following privatization. Efficiency improvements were stronger among firms in competitive industries than among firms that were operating in non-competitive environments.

CHAPTER 3

METHODOLOGY

3.1 Background

This study has made use of a tourism demand model, which is usually the foundation on which tourism-related business decisions rest. Companies in the tourism industry are interested in the demand for their product by tourists and the success of many businesses depends largely or totally on the state of tourism demand. This study has used the number of tourists from an origin country as the dependent variable in the demand model (Barry and O'Hagan (1972), Eilat and Einav (2004), Walsh (1996)). Tourism demand from two origin countries UK and RSA has been modeled using a double log model (Katafono, (2004), Diamond, (1977)). However, a substantial proportion of studies also measure tourism demand in terms of tourism receipts or expenditure. The choice of the origins stems from the availability of data on tourist visits in Malawi as compared to tourist receipts or expenditure and the fact that most international tourists into Malawi come from Europe and Africa. In addition to these individual origin demand models, an aggregate tourism demand model of the two will also be estimated in order to capture how international tourism, on the aggregate has been influenced by the various factors. Secondary time series data for the years from 1973 to 2003 has been used.

3.2 Model specification

This study has used the number of incoming international tourists into Malawi as the dependent variable in a double log-linear model of tourism demand. This model specification has the advantage that its parameter estimates can be interpreted as elasticities and can be very useful to policy makers. Walsh (1996) estimated a double

log-linear tourism demand function in which in addition to the variables used in the present study, she also included the cost of living in weighted substitute destinations. This study is not using this variable due to data limitations.

However the present study has included two dummy variables D_1 and D_2 to capture the effects on international tourism of privatization in 1997 and the other one to capture the effects of the floatation of the Malawi Kwacha in 1994, respectively. While the dummy variable D_1 will not be multiplicative, the dummy variable D_2 will be introduced multiplicatively with the real exchange rate (RER) in order to find out if there was any effect on the demand for international tourism with the floatation of the Kwacha.

The time series models that will be estimated is specified as follows:

$$\ln T_{it} = \beta_0 + \beta_1 \ln GDP_{it} + \beta_2 \ln RER_{it} + \beta_3 \ln T_{it-1} + \beta_4 D_1 + \beta_5 D_2 RER_{it} + \mu_{it} \quad (5)$$

Where:

$i = 1, 2, 3$ is the tourist origin country

With 1 = United Kingdom

2 = South Africa

3 = Aggregate function.

$\ln$ = Natural Logarithm

t = Time from 1973 to 2003

β_j = Parameters to be estimated

$j = 0, 1, \dots, 5$

μ_t = Stochastic error term

D_1 is a privatization dummy variable where $D_1 = 1$ from 1997 to 2003

$D_1 = 0$ otherwise

D_2 is the exchange rate floatation dummy variable where $D_2 = 1$ from 1994 to 2003

$D_2 = 0$ otherwise

$\ln T_{it}$ is the natural logarithm of the total number of tourists, T , from an origin country at time t .

$\ln GDP_{it}$ is the natural logarithm of real per capita GDP in an origin country at time t .

$\ln RER_{it}$ is the natural logarithm of real exchange rate between the Malawi Kwacha and the currency of the origin country at time t . The real exchange rate is defined as

$$RER_i = (ER_i * P_i) / P_{mw}$$

Where

RER_i is the real exchange rate between the currency of origin i and the Malawi Kwacha.

ER_i is the nominal exchange rate of the currency of origin i and the Malawi Kwacha.

P_i is the consumer price index for origin i .

P_{mw} is the consumer price index in Malawi.

$\ln T_{it-1}$ is the natural logarithm of the lagged dependent variable..

The a priori expected signs of the coefficients are

$\beta_1 > 0, \beta_2 \neq 0, \beta_3 > 0, \beta_4 \neq 0, \beta_5 \neq 0$.

3.3 The aggregate tourism demand model

In estimating the aggregate tourism demand function, a further manipulation of the available data on the United Kingdom and South Africa has been carried out. The total number of tourists and population in this function is the sum of tourists and populations from these two origins. The real GDP per capita that has been used in this function has been calculated as a weighted average of the respective GDP in each of the two origins using populations of the countries as weights. The following formula has been used:

$$GDP_{At} = (POP_{1t}/POP_{At} * GDP_{1t}) + (POP_{2t}/POP_{At} * GDP_{2t}) \quad (5)$$

Where

GDP_{At} is the weighted aggregate gross domestic product

PoP is population

Subscript A represents an aggregate value

GDP_{At} has been deflated using the United States of American consumer price index and the aggregate population to come up with the aggregate real per capita GDP denoted GDP_{3t} . Lastly, the aggregate tourism demand model has used the real exchange rate between Malawi Kwacha and the United States Dollar as the aggregate real exchange rate denoted RER_3 . The choice of the United States of America consumer price index and the use of the Malawi Kwacha US dollar exchange rate in the aggregate function has been due to the importance that the US dollar has as a central medium of exchange

3.4 Expected signs

Income in the origin country, which has been proxied by real per capita GDP in this study, is expected to have a positive influence on the level of international tourism from that origin. International tourism is also dependent on tourism price, both the cost of

travel and the cost of living in the destination country and these are expected to have negative influences on demand. However, since the actual data on the cost of travel and tourism prices in Malawi are not available, the study has used the real exchange rate between the destination country, Malawi, and the tourist origin country to capture the relative cost of traveling to Malawi as a tourist destination.

This study has also used the real exchange rate as a determinant of international tourism since international consumers are more aware of exchange rates than prices in the destination countries. This variable may also be viewed as a cost of living in the destination country since the real exchange rate incorporates relative prices of the tourist origin country and the prices in the destination country, Malawi. This variable can either be negatively or positively related to the number of international tourist since a depreciation of the destination country's currency relative to the origins currency, may result in more tourists visiting the destination from the origin and vice versa, *ceteris paribus*. However, since this study is using the real exchange rate, the change in demand for international tourism will also depend on the relative prices between the two countries.

A lagged dependent variable can be justified on the grounds of habit persistence (Song and Turner, 2004). Once people have been on holiday to a particular country and liked it, they tend to return to that destination. There is much less uncertainty associated with holidaying again in that country compared with traveling to a previously unvisited foreign country. A lagged dependent variable can also be justified because of the supply constraints that may take the form of shortages of hotel accommodation, passenger transportation capacity and trained staff and these often cannot be increased rapidly. Time is also required to build up contacts among tour operators, hotels, airlines and travel agencies. Similarly, once the tourist industry in a country has become highly developed, it is unlikely to dwindle rapidly. Furthermore, if a partial adjustment mechanism is postulated to allow for rigidities in supply, this results in the presence of a lagged dependent variable in the tourism demand function, with the parameter lying between zero and unity (Song and Witt, 2000). It is expected that this lagged dependent

variable would vary positively to the dependent variable. The coefficients of the qualitative variables are not expected to be equal to zero.

Therefore the expected signs of the coefficients are as follows:

$$\beta_1 > 0, \beta_2 \neq 0, \beta_3 > 0, \beta_4 \neq 0, \beta_5 \neq 0$$

3.5 The modeling process

This study has used Ordinary Least Squares techniques to estimate the relationship between the dependent variable and the various independent variables. Time series data has been used to estimate tourism demand models for South African and United Kingdom tourists. The Ordinary Least Squares technique minimizes the sum of squared residuals and provides estimates, which are best, linear and unbiased, provided that all the assumptions underlying the classical linear regression model hold. The objective is to calculate values of the coefficients in the model that give the lowest possible values of the residuals. Various diagnostic tests and checks have been employed as part of the estimation procedure.

3.5.1 Stationarity

Many economic time series are non-stationary in that both the mean and the variance depend on time and they tend to depart further from any given value with time. Therefore a test for unit root has been conducted on the data using the Phillip Perron test, which is superior to the Dickey Fuller test for unit root.

3.5.2 Diagnostic tests

The F statistic has been used to test whether the whole relationship provided by the equation is significantly different from zero or whether the model explains the variation in demand while the Adjusted R squared has been used to test the explanatory power or goodness of fit of the model. In order to assess whether the coefficients estimated are theoretically meaningful, the coefficients have been examined in terms of both the magnitude and sign according to the a priori expectations. The t-test has been used to test the hypothesis that a particular coefficient is significantly different from zero or whether the estimated coefficient value occurred by chance.

The Breusch Godfrey serial correlation LM test has been used to test for the presence of autocorrelation. Differencing the data has solved the problem of multicollinearity as this removes trend elements in the independent variables (Gujarati, 2003). White heteroskedasticity test has been used to test for the presence of heteroskedasticity in the models estimated.

3.6 Data sources and types

This study has made use of secondary annual time series data for the period from 1973 to 2003 (See Appendix 11). This data has been sourced from the International Financial Statistics of the International Monetary Fund, Malawi National Statistical Office publications and Reserve Bank of Malawi publications. Specifically, data on the annual tourist arrival to Malawi has been sourced from various statistical bulletins of the National Statistical Office. Exchange rates and data on consumer price indices have been obtained from the Reserve Bank of Malawi Annual Report while data on the origin countries GDP and population was sourced from the international financial statistics different editions.

CHAPTER 4

EMPIRICAL RESULTS AND ANALYSIS

4.1 Stationarity test results

The first step in the estimation procedure is to determine the order of integration of the variables. The Phillip Perron test for unit root has been used to examine the stationarity of the time series and subsequently the order of integration of each variable. In order to establish a long run relationship, it is required that all variables should be integrated of the same order. The test showed that all the variables except $\ln RER_2$, which was stationary, had a unit root (see Appendix 1). The variable $\ln GDP_2$ is integrated of order two while all the other variables are integrated of order one. Therefore, the variables $\ln RER_2$ and $\ln GDP_2$ were left out when constructing the long run model for South African tourists into Malawi. All variables in the UK model and the aggregate model have unit roots and are integrated of order one

4.2 Diagnostic test results

This study has used statistical tools including the Adjusted R-squared for the overall fit of the equation as well as individual coefficient signs and magnitude. The adjusted R squared statistics from the long run models (see Appendices 2, 3 and 4) show that the models fit very well as compared with the short run models whose adjusted R squared statistics are all below fifty percent. All the long run models are significant and better explain the variations in tourism demand since their respective F statistics are significant at least at 10% significance level.

Auto correlation has been tested using the Breusch Godfrey serial correlation LM test. The Breusch Godfrey serial correlation LM test has the null hypothesis that the error

terms are correlated against the alternative that the error terms are not correlated. According to our results, it is evident that there was no serious problem of autocorrelation in all the three models estimated and the null hypothesis has been rejected at least at 5% significance level (see Appendices 2 – 7).

The Ramsey Reset test was also used to test whether the model was well specified or not. This test has the null hypothesis that the model is not well specified against the alternative that the model be well specified. According to the results, the null hypothesis has been rejected at 5% significance level and the alternative hypothesis is accepted that all the models have been well specified.

Two tests have been carried out to test for heteroskedasticity namely the White Heteroskedasticity test and the ARCH test. In both tests, the null hypothesis is that there is heteroskedasticity in the model and the alternative is that there is no heteroskedasticity. According to the results found, the null hypothesis has been rejected and the alternative that there is no heteroskedasticity in all the models estimated is accepted (see Appendices 5, 6 and 7).

4.3 Estimation Results

4.3.1 The Long-Run tourism demand models for Malawi.

Having determined the order of integration of the variables, the long run tourism demand functions for all the origins have been estimated using Ordinary Least Squares. Table 2 below shows the results of regressions in levels for the three origins (with the natural logarithm of the number of tourists from the respective origins as the dependent variable), (see also Appendix 2,3 and 4).

The residuals from these regressions have been tested for stationarity using the Phillip Perron test and the results indicate that the residual are integrated of order zero and are stationary (see appendix 1). This indicates that the variables in all the long run models are cointegrated and the regressions in levels of these variables are long run stable or

equilibrium relationships. The long-run regression results are presented in Table 2 below.

Table 2: Long Run Tourism Demand Models for Malawi for all the Three Origins

Variable	UK		RSA		AGGREGATE	
	Coeff	T-Stat	Coeff	T-Stat	Coeff	T-Stat
C	-5.026	(-0.918)	2.414244	(0.968845)	-10.993	(-2.864)*
LnGDP	0.681	(0.876)	-0.408512	(-0.911423)	1.654	(2.681)**
LnRER	0.619	(1.539)	-	-	0.251	(1.668)***
lnT(-1)	0.655	(3.591)*	0.955005	(11.68306)*	0.605	(3.665)*
D1	-0.090	(-0.489)	0.103104	(0.910241)	-0.110	(-1.031)
D2RER	-0.004	(-0.444)	0.018004	(0.536655)	-0.016	(-2.255)**

*, (**), (***) Denotes variable significant at least at 1%, (5%), (10%) level

The results show that in the long run, tourism demand in Malawi is well explained on the aggregate other than on individual origin basis. This is so because almost all variables in the aggregate model are significant at least at the 10% level of significance and have theoretically expected signs. The coefficients of explanatory variables specified in logarithmic form may be interpreted as long-run elasticities. The long-run model estimates are very important for making policy inferences that could be useful to the Malawi economy.

The study has shown that there is a positive relationship between real per capita income in the origin country and the number of tourists coming into Malawi from that origin. The income elasticity of demand with respect to British tourism in Malawi is closer to unity but insignificant at 10 percent level of confidence. Hence the hypothesis that real per capita level of income in the United Kingdom has a significant influence on tourism demand by UK tourists into Malawi in the long-term cannot be accepted. This could be

due to the inadequate international marketing and advertising problems that most tourist attractions in Malawi face.

As much as there are potential tourists from UK to Malawi, they need to know what products Malawi is offering and this can only be done through international advertising which is not that well developed in Malawi. Walsh (1996) found that in the long-run, real income levels in France are a major determinant of French arrivals in Ireland with a 1 percent increase in real income resulting into a more than 2.1 percent increase in per capita demand for Irish tourism all things constant. She also found that the elasticity of Irish tourism demand with respect to UK real income was also less than unity and insignificant at 10 percent level of probability. This result was attributed to the fact that British tourists were viewing Ireland as a quasi-domestic destination.

A one-percentage increase in the real exchange rate between the Malawian Kwacha and the British Pound results into a 0.619 percentage increase in tourism demand but is insignificant at 10% significance level, therefore the hypothesis that real exchange rates influence the number of international tourist from the United Kingdom into Malawi can not be accepted. Since the real exchange rate is also considered as a relative price variable it may be that tourist arrivals in developing countries like Malawi are not affected by fluctuations in the real exchange rates since prices in these destinations are relatively low. However, the real exchange rate variable is positive and significant in the aggregate model. A one percent increase in the long-run real exchange rate would result in a 0.25 percent increase in international tourism demand

The long-run country models results also show that the level of international tourism in Malawi is inelastic with respect to the lagged dependent variable. This variable is positively related to the number of international tourist coming into Malawi and is significant at 1 percent level of probability for both the UK tourists and South African tourists with elasticities between zero and unity. The lagged dependent variable for the United Kingdom tourism demand model has an elasticity of 0.655 implying that for a one percent increase in the number of tourist arrivals into Malawi in the previous period, there is a 0.655 percentage increase in tourism demand. The elasticity with

respect to South African tourists is 0.955 implying that for a 1-percentage increase in the number of tourist arrivals from South Africa into Malawi in the previous period, there is a 0.955 percentage increase in tourism demand in the current period. South Africa has a larger elasticity with respect to the lagged dependent variable and this may be due to the fact that South Africa is nearer to Malawi than United Kingdom. The significant lagged dependent variables in both models also mean that rigidities on the supply of tourist products in Malawi have played a significant role in deterring the level of foreign holiday arrivals. With elasticities between zero and unity, this implies that tourism demand is inelastic with respect to the lagged dependent variable. These supply rigidities may take the form of shortages in hotel accommodation, passenger transportation capacity and trained staff and these often cannot be increased rapidly (Song and Turner, 2004).

4.3.2 The Long-Run Aggregate tourism demand models for Malawi

The aggregate long run tourism demand model given in Table 2 shows that tourism demand in Malawi is well explained on the aggregate than considering individual origins separately. This is evident in the corresponding significance and signs of the variable coefficients in the aggregate model as compared to the individual origin models. All variable coefficients in the long-run aggregate regression are significant atleast at 10 percent level of probability except for the privatization dummy variable coefficient.

A percentage increase in the real per capita income in the origin country on the aggregate, will lead to a more than 1.654 percentage increase in tourism demand in Malawi *ceteris paribus*. This shows that on the aggregate, international tourism in Malawi is income elastic and that international tourism is regarded as a luxury product. The results therefore mean that with an increase in real per capita income in most of the tourist origins for Malawi, Malawi can be assured of an increase in revenues from international tourism and this shows that income is a major determinant of foreign tourism arrivals in Malawi.

The real exchange rate coefficient is positive and also significant at 10 percent level of probability. A percentage increase in the real exchange rate results into a 0.25 percentage increase in tourism demand on the aggregate. Therefore, a depreciation of the Malawi Kwacha or an increase in the foreign prices relative to domestic prices in Malawi would lead to an increase in the number of international tourists coming into Malawi. However, the results mean that on the aggregate, long run international tourism demand in Malawi is inelastic with respect to the real exchange rate. Therefore, from the results we can conclude that international tourism is not a good solution to exports of primary goods, which are facing deteriorating terms of trade on the world market. Malawi would not be able to attract more tourists even with the exchange rate depreciating.

The number of tourists who came into the country the previous period is also a strong determinant of international tourism demand on the aggregate. The lagged dependent variable has an elasticity of 0.605 and is significant at 1 percent significance level. This only confirms the results from the individual origins that indeed in Malawi there are some supply rigidities in tourism and also that the level of tourist arrivals into Malawi depends on the number in the previous period. This could be explained by the fact that once people have been on holiday to a particular country and liked it, they tend to return to that destination. There is a form of habit persistence on the part of international tourists once they visit Malawi. Furthermore, there is much less uncertainty associated with holidaying again in a previously visited country compared with traveling to a previously unvisited foreign country. Knowledge about the destination spreads as people talk about their holidays and show photographs, thereby reducing uncertainty for potential visitors to that country through ‘word of mouth’ recommendations. A type of learning process is in operation and as people are in general risk averse, the number of people choosing a given alternative in any year depends (positively) on the number who chose it the previous year (Song and Turner, 2004).

4.3.3 The Short-Run tourism demand models for Malawi

Having determined that the error terms in all the long-run equilibrium models are $I(0)$ processes, dynamic short run models have been formulated with the use of an error correction mechanism, which uses the lagged value of the equilibrium error term as an explanatory variable. Engle and Granger (1987) show that cointegrated variables can always be transformed into an error correction mechanism (ECM) and vice versa. This bi-directional transformation is often called the Granger Representation Theorem and implies that there is some adjustment process that prevents economic variables from drifting too far away from their long-run equilibrium time path (Gujarati, 2003). The cointegration and error correction models are very useful in situations where both long-run equilibrium and short-run disequilibrium behavior are of interest. In tourism demand analysis, the long-run equilibrium behavior of tourists is expected to be a major concern of policy makers and planners whilst the short-run dynamics are likely to provide useful information for short-term business forecasting and managerial decisions (Song and Turner, 2004)

In estimating these short-run equations, all the $I(1)$ variables have been differenced once, and the lagged error terms from the long-run models denoted $ECM_i(-1)$, have been included. In this case there is no problem of spurious regression since all the variables used in the short-run model are now $I(0)$ processes. Table 3 below shows the results from the short-run models for the three origins.

Table 3: Non-Parsimonious Error Correction Tourism Demand Models for Malawi for all the Three Origins

Variable	UK		RSA		AGGREGATE	
	Coeff	T-Stat	Coeff	T-Stat	Coeff	T-Stat
C	0.034	(0.539)			0.0009	(0.028)
D(lnGDP)	-0.701	(-0.329)			0.337	(0.313)
D(lnRER)	0.655	(2.291)**			0.168	(1.182)
D(lnT(-1))	0.417	(1.06)			0.839	(2.746)**
D1	0.02	(0.124)			-0.017	(-0.181)
D2RER	-0.001	(-0.211)			-0.0005	(-0.097)
ECM(-1)	-0.895	(-2.218)**			-1.34	(-3.356)*
C			0.044151	0.156613		
D(lnGDP ₂)			0.034836	0.048871		
D(lnT ₂ (-1))			0.873292	0.858816		
D1			0.022506	0.165469		
D2RER ₂			0.006849	0.192438		
ECM ₂ (-1)			-0.995736	-0.957253		
LnRER ₂			-0.045023	-0.182429		

- * (**), (***) Denotes variable significant at least at 1%, (5%), (10%) level

4.3.4 Developing Parsimonious Error Correction Tourism Demand Models for Malawi.

Although the error correction model is believed to be superior to other forms of dynamic specifications, the existence of cointegration does not reveal any information about the nature of the dynamic process around the embedded long-run solution. This calls for the use of over-parameterized error correction models for all the three tourist origins. The model is simplified by eliminating variables that are not statistically significant but when removed do not reduce the relative information content of the models as indicated by R^2 . The over-parameterized short-run models are presented in Appendices 8, 9 and 10. The over-parameterized models (Appendices 8, 9 and 10) alongside the non over-parameterized models above (Table 3) are used as compliments

in analyzing short-run international tourism demand in Malawi. A battery of diagnostic tests including the LM serial correlation, the ARCH test of first-order-autoregressive-conditional-heteroscedasticity, White heteroscedasticity test and the Ramsey RESET test were applied to the parsimonious models. The results indicate that the models pass all of the tests at 5% level of significance (see Appendices 5, 6, 7, 8, 9 and 10).

Both the parsimonious and non-parsimonious error correction models for each of the three origins are harmonious and jointly enable us to interpret the dynamic process in the short-run. For tourism demand on the aggregate and from United Kingdom tourists, the error correction term is significant at 5% significance level. In the non-parsimonious error correction model in Appendix 5, the ECM(-1) indicates a feedback effect of 89 percent of the previous period's dis-equilibrium from the long-run elasticities while it is explosive in the other models. The strong significance of the error correction term further reconfirms the conclusion that there is cointegration between the variables and that a long run relationship among the variables exists. However, the error correction term is not significant in the non-parsimonious error correction model for South African tourist (Table 3 and Appendix 6) but is significant at 1 percent significance level in the parsimonious model (Appendix 9).

The non-parsimonious model (Appendix 5) shows that the real exchange rate is a major short run determinant of international tourism to Malawi for UK tourists with a positive elasticity, which is significant at 5% significance level. Therefore, for a short-run one-percentage increase in the real exchange rate between the Malawi Kwacha and the British Pound there is a 0.66 percentage increase in tourism demand. The aggregate non-parsimonious model shows that the lagged dependent variable is the main short-run determinant of international tourism in Malawi with a short-run elasticity of 0.84.

Although the real per capita income was found to be a major long-run determinant for international tourism for the aggregate model, such is not the case in the short-run. The results show that in the short-run income is insignificant in determining demand for tourism in Malawi. This may indicate that the effects on Malawi tourism demand, induced by short run changes in some determinants are not of relevant magnitude.

Although income was found to be the most important factor influencing international tourism from many studies, this may not be conclusive in Malawi's case in the short-term. Kulendran and King (1997) also found this result in some error correction models they estimated and attributed the result to measurement errors in the data.

In terms of magnitudes of long-run and short-run income elasticities, the former appear to be higher than the later. The values of the long-run income elasticities tend to be higher than short run counterparts, suggesting that it takes time for income changes to take effect on the demand for tourism due to information asymmetry and relatively inflexible budget allocations (Song and Turner, 2004)

4.4 Interpretation of qualitative effects

Dummy variables were included in the estimated models to take account of once-off events, which are non-quantitative in nature. This study included a dummy variable to take account of the privatization in the hospitality sector in Malawi, which took place in 1997. From all the long run models and short run models estimated, it is evident that the privatization in the hospitality sector has not been significant in affecting international tourism demand for Malawi. This might be due to the inadequate investment in the facilities and advertising of the various tourist attractions in the country. The World Tourism Organization's "Tourism 2020 Vision" recognizes that the tourism potential of African countries is significant, but that there exists serious obstacles that need to be addressed if this potential is to be realized. The main obstacle of Africa's tourism sector's growth is its lack of price and quality competitiveness, which could be the other reason why privatization has not helped in improving international tourism in Malawi.

However, the second dummy variable which was accounting for the floatation of the Malawi Kwacha in 1994, is significant at 5 percent significance level in the long run aggregate model with an absolute elasticity value of 0.016. This then means that with the floatation of the Kwacha, the power of the real exchange rate in determining the level of international tourism demand was improved on the aggregate market.

CHAPTER 5

CONCLUSIONS AND POLICY IMPLICATIONS

5.1 Conclusion

This study has applied the single equation methodology in estimating the international tourism demand model for Malawi for different origins. This has been done to assess whether the determinants of international tourism postulated in the literature indeed apply in the case of Malawi. The need for meaningful estimates of tourism demand function stems from two principal sources: first, public planning and the budgetary allocation process and secondly, to effectively manipulate the tourism export component in the area of economic growth (Walsh, 1996).

The study has estimated a total of three international tourism demand models, one for the United Kingdom, the other for the Republic of South Africa, an aggregate model with their respective short run models. The results presented from the estimated regression models show that conventional arguments regarding the influence of economic variables on tourist flows can be formalized in a way that is supported by an extensive body of data. It has become commonplace to attribute changes in revenue receipts and visitor numbers to changes in economic variables. However, since the hypothesis is not supported uniformly, the analysis makes it clear that the explanation for tourism flows is not as straightforward as is often suggested. For instance, the real exchange rate influences short run demand for UK tourists into Malawi while on the aggregate, the demand in the previous period determines demand in the present period in the short run.

The elasticities that have been obtained from the models provide interesting insights concerning the behavior of tourism demand in Malawi. The aggregate long run relationship between the number of tourists from an origin country and the various economic determinants has been shown to be strongly statistically significant as

compared to the individual origins long run tourism demand models and the respective short run models. The aggregate long run income elasticities of demand of more than one has shown that tourism in Malawi is a luxury good and is indeed income elastic according to theory. Indeed the importance of both relative prices and income has been theoretically and empirically established.

5.2 Policy Implications

The tourism industry is more subject to external instabilities outside the destination country's control as seen from the significance of the origin's real per capita income variable in the results. As such it is very important that policy makers concentrates on improving the tourism determinant variables that can be controlled within the country such as exchange rates. In the short-run, the real exchange rate is a significant determinant of tourism demand from UK tourists and it is significant on aggregate in the long run. This also indicates the importance of relative prices in the promotion of international tourism, as this is a component of the real exchange rate. Tourists will come to Malawi if prices in Malawi are lower relative to the prices in their country or in substitute tourist destinations. This shows that tourism is sensitive to good economic growth and macro-economic stability and these influence the price competitiveness of a country's tourism products. Tourism is thus a significant industry in all five of Africa's good performing economies: Morocco, Mauritius, Tunisia, South Africa and Botswana (Naude and Saayman, 2004). Therefore with good economic management, Malawi can be assured of improved international tourism.

All policy initiatives have to be directed towards stimulating total foreign exchange earnings from tourists and more specifically, towards attempting to boost average expenditure per capita rather than emphasis on volume of in bound traffic (Walsh, 1996). The significant lagged dependent variable in almost all the models estimated

show that tourism demand is affected by supply rigidities in the tourism industry in the country and this could take the form of shortages in hotel accommodation, passenger transportation capacity and trained staff. According to Naude and Saayman (2004), the major obstacles to tourist arrivals in Africa in this regard are insufficient air transport, a deficiency in facilities and accommodation, and a lack of image and poor perceptions, poverty, disease and political instability. Also included amongst obstacles to tourism are undeveloped public health services and fears of personal safety. This then means that with the improvement in most of these facilities, those who visited the country previously would increase the number of tourists coming into Malawi through word of mouth.

The government should also consider improving communication in the country. Income is positively related to the number in bound tourist in the long run for the case of the UK model but is insignificant at the 10 percent significance level. This could be due to the lack of knowledge about Malawi as a tourist destination on the part of UK tourists. This calls for the improvement in communication services in the country so as to improve marketing of Malawi's tourist attractions on the international market. As far as communication facilities are concerned, the digital divide is seen as an important obstacle to tourism development in Africa. Only about 1.5 million of the world's more than 300 million Internet users are in Africa (with more than 60% of these in South Africa alone) (Naude and Saayman, 2004). The Internet plays an increasingly important role in tourism through marketing, information and online booking and electronic commerce and has significantly increased competition between tourist destinations.

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APPENDICES

Appendix 1: Phillip Perron (PP) Unit Root Test on all Variables

Variable	PP test (levels)	PP test (First difference)	Truncation lag	Order of integration
$\ln T_1$	0.271964	-6.477699	3	I(1)
$\ln GDP_1$	1.061902	-3.2654	3	I(1)
$\ln RER_1$	-0.027935	-6.729310	3	I(1)
$\ln T_1(-1)$	-0.889528	-5.968796	3	I(1)
ECM1	-5.063376	-	3	I(0)
$\ln T_2$	0.829311	-5.561295	3	I(1)
$\ln GDP_2$	-2.0074	-5.0756	3	I(1)
$\ln RER_2$	-4.15746	-5.932914	3	I(0)
$\ln T_2(-1)$	0.694923	-5.500908	3	I(1)
ECM2	-5.9885	-	3	I(0)
$\ln T_3$	0.981592	-4.696877	3	I(1)
$\ln GDP_3$	1.295802	-2.97666	3	I(1)
$\ln RER_3$	-0.782852	-4.789143	3	I(1)
$\ln T_3(-1)$	0.270723	-4.837758	3	I(1)
ECM3	-5.532495	-	3	I(0)

Critical value for the rejection of the null hypothesis of unit root at 5% significance level is -2.9627 for the test at first differences.

Appendix 2: Long run Tourism Demand Model for UK Tourists into Malawi

DEPENDENT VARIABLE: $\ln T_1$

VARIABLE	COEFFICIENT	STD ERROR	T- STATISTIC	PROB
C	-5.025927	5.472299	(-0.918431)	0.3675
$\ln GDP_1$	0.681033	0.777781	(0.875610)	0.3899
$\ln RER_1$	0.618924	0.401985	(1.539668)	0.1367
$\ln T_1(-1)$	0.655828	0.182638	(3.590861)*	0.0015
D1	-0.090399	0.184688	(-0.489471)	0.6290
D2RER ₁	-0.003965	0.008922	(-0.444427)	0.6607

R- Squared 0.912398

F-Statistic 49.99313

Adjusted R- Squared 0.894147

Prob(F-Statistic) 0.0000

Appendix 3: Long Run Tourism Demand Model for RSA Tourists into MalawiDEPENDENT VARIABLE: $\ln T_2$

VARIABLE	COEFFICIENT	STD ERROR	T- STATISTIC	PROB
C	2.414244	2.491878	0.968845	0.3419
$\ln GDP_2$	-0.408512	0.448214	-0.911423	0.3708
$\ln T_2(-1)$	0.955005	0.081743	11.68306	0.0000
D1	0.103104	0.113271	0.910241	0.3714
D2RER ₂	0.018004	0.033548	0.536655	0.5962

R- Squared 0.9617

F-Statistic 156.777

Adjusted R- Squared 0.9555

Prob(F-Statistic) 0.0000

Appendix 4: Long Run Aggregate Tourism Demand Model for MalawiDEPENDENT VARIABLE: $\ln T_3$

VARIABLE	COEFFICIENT	STD ERROR	T-STATISTIC	PROB
C	-10.99288	3.837974	(-2.864239)*	0.0085
$\ln GDP_3$	1.653639	0.616692	(2.681467)**	0.0130
$\ln RER_3$	0.251187	0.150517	(1.668830)***	0.1081
$\ln T_3(-1)$	0.605133	0.165105	(3.665146)*	0.0012
D1	-0.110441	0.107056	(-1.031623)	0.3125
$D2RER_3$	-0.016001	0.007093	(-2.255902)**	0.0335

R- Squared 0.9798

F-Statistic 233.2843

Adjusted R- Squared 0.9756

Prob(F-Statistic) 0.0000

Appendix 5: Short Run Tourism Demand Model for UK Tourists into Malawi

DEPENDENT VARIABLE: $D(\ln T_1)$

VARIABLE	COEFFICIENT	STD ERROR	T-STATISTIC	PROB
C	0.0344	0.0638	0.5391	0.5953
$D(\ln GDP_1)$	-0.7016	2.1328	-0.3289	0.7453
$D(\ln RER_1)$	0.6551	0.2859	2.2913	0.0319
ECM1(-1)	-0.8952	0.4036	-2.2178	0.0372
$D(\ln T_1(-1))$	0.4172	0.3937	1.0599	0.3007
D1	0.0196	0.1581	0.1241	0.9023
$D2RER_1$	-0.0012	0.0056	0.2112	0.8347

$R^2 = 0.365$,

F- statistic 2.1081 Prob 0.0934

LM Serial correlation 0.1702 Prob 0.8447

ARCH 0.9093 Prob 0.1788

White Heteroskedastic 1.4179 Prob 0.2507

Ramsey RESET 1.1701 Prob 0.2916

Appendix 6: Short Run Tourism Demand Model for RSA Tourists into Malawi

DEPENDENT VARIABLE: $D(\ln T_2)$

VARIABLE	COEFFICIENT	STD ERROR	T-STATISTIC	PROB
C	0.044151	0.281912	0.156613	0.8770
$D(\ln GDP_2)$	0.034836	0.712809	0.048871	0.9615
$\ln RER_2$	-0.045023	0.246797	-0.182429	0.8569
ECM2(-1)	-0.995736	1.040201	-0.957253	0.3488
$D(\ln T_2(-1))$	0.873292	1.016856	0.858816	0.3997
D1	0.022506	0.136010	0.165469	0.8701
$D2RER_2$	0.006849	0.035591	0.192438	0.8492

$$R^2 = 0.0908$$

F- statistic 0.3664 Prob 0.8923

LM Serial correlation 0.2635 Prob 0.7709

ARCH 0.1752 Prob 0.6789

White Heteroskedastic 1.1303 Prob 0.3973

Ramsey RESET 0.5727 Prob 0.4575

Appendix 7: Short Run Aggregate Tourism Demand Model for Malawi

DEPENDENT VARIABLE: $D(\ln T_3)$

VARIABLE	COEFFICIENT	STD ERROR	T-STATISTIC	PROB
C	0.00089	0.0319	0.0277	0.9781
$D(\ln GDP_3)$	0.3366	1.0737	0.3134	0.7569
$D(\ln RER_3)$	0.168	0.1421	1.1819	0.2499
$ECM_3(-1)$	-1.339	0.399	-3.3559	0.0029
$D(\ln T_3(-1))$	0.839	0.305	2.7457	0.0118
D1	-0.0165	0.091	-0.1807	0.8582
$D2RER_3$	-0.0005	0.005	-0.0972	0.9234

$R^2 = 0.439$,

F- statistic	2.874	Prob	0.032
LM Serial correlation	1.7702	Prob	0.1959
ARCH	0.3205	Prob	0.5761
White Heteroskedastic	0.5646	Prob	0.8315
Ramsey RESET	0.1699	Prob	0.6843

Appendix 8: Over parameterized Error Correction Model for UK Tourists

DEPENDENT VARIABLE: $D(\ln T_1)$

VARIABLE	COEFFICIENT	STD ERROR	T-STATISTIC	PROB
C	-0.015796	0.067002	-0.235757	0.8163
$D(\ln GDP_1)$	1.252619	2.417047	0.518243	0.6106
$D(\ln GDP_1(-1))$	-1.729273	2.383134	-0.725630	0.4774
$D(\ln RER_1)$	0.617931	0.308017	2.006156	0.0601
$D(\ln RER_1(-1))$	-0.320723	0.332440	-0.964753	0.3475
$D(\ln RER_1(-2))$	-0.316477	0.330654	-0.957124	0.3512
ECM1(-1)	-1.407739	0.497257	-2.831010	0.0111
$D(\ln T_1(-1))$	0.807581	0.465739	1.733978	0.1000
D1	-0.114287	0.183115	-0.624124	0.5404
$D2RER_1$	0.004397	0.006833	0.643470	0.5280

R Squared	0.4968	F-Statistic	1.9750
Adjusted R-Squared	0.2452	Prob(F-Statistic)	0.1047
LM Serial correlation	1.2551	Prob	0.3116
ARCH	1.3383	Prob	0.2582
White Heteroskedasticity	0.8389	Prob	0.6394
Ramsey RESET	1.7705	Prob	0.1958

Appendix 9: Over-parameterized Error Correction Model for RSA Tourists

DEPENDENT VARIABLE: D(lnT₂)

VARIABLE	COEFFICIENT	STD ERROR	T-STATISTIC	PROB
C	-0.978959	0.484901	-2.018883	0.0606
D(lnGDP ₂)	-0.402899	0.612502	-0.657792	0.5200
D(lnGDP ₂ (-1))	2.467075	0.714260	3.454031	0.0033
D(lnGDP ₂ (-2))	2.339979	0.644304	3.631795	0.0022
lnRER ₂	0.647341	0.416842	1.552964	0.1400
D(lnRER ₂)	-0.212526	0.232416	-0.914423	0.3741
D(lnRER ₂ (-1))	-0.511831	0.204264	-2.505733	0.0234
D(lnT ₂ (-1))	5.200430	1.284004	4.050167	0.0009
D(lnT ₂ (-2))	-0.178839	0.183803	-0.972994	0.3450
ECM2(-1)	-5.531993	1.346110	-4.109614	0.0008
D1	0.077184	0.143170	0.539109	0.5972
D2RER ₂	-0.062925	0.038925	-1.616590	0.1255

R Squared	0.5729	F-Statistic	1.9516
Adjusted R-Squared	0.2794	Prob(F-Statistic)	0.1088
LM Serial correlation	3.1983	Prob	0.0718
ARCH	1.1408	Prob	0.2956
White Heteroskedastic	0.8834	Prob	0.6217
Ramsey RESET	6.7908	Prob	0.0199

Appendix 10: The Aggregate Over-parameterized Error Correction Model

Appendix 10: Over-parameterized Aggregate Error Correction Model

DEPENDENT VARIABLE: $D(\ln T_3)$

VARIABLE	COEFFICIENT	STD ERROR	T-STATISTIC	PROB
C	-0.010521	0.028131	-0.373985	0.7130
$D(\ln GDP_3)$	0.846571	1.019488	0.830388	0.4178
$D(\ln GDP_3(-1))$	-2.700957	1.153507	-2.341518	0.0316
$D(\ln RER_3)$	-0.085408	0.136648	-0.625018	0.5403
$D(\ln RER_3(-1))$	-0.042559	0.129652	-0.328257	0.7467
$D(\ln RER_3(-2))$	-0.512871	0.149155	-3.438511	0.0031
$ECM3(-1)$	-2.152994	0.397038	-5.42264	0.0000
$D(\ln T_3(-1))$	1.433532	0.320343	4.474995	0.0003
$D(\ln T_3(-2))$	-0.112476	0.153648	-0.732034	0.4741
D1	-0.218317	0.101471	-2.151518	0.0461
$D2RER_3$	0.013635	0.006189	2.203061	0.0417

R Squared	0.7124	F-Statistic	4.210286
Adjusted R-Squared	0.5432	Prob(F-Statistic)	0.004605
LM Serial correlation	2.7592	Prob	0.0916
ARCH	0.00127	Prob	0.9718
White Heteroskedasticity	0.4406	Prob	0.9321
Ramsey RESET	0.2791	Prob	0.6037

Appendix 11: Data Used in the Study

YEAR	UK POP	RSA POP	RSA GDP	UK GDP	UK tourists	RSA tourists
1973	55.91	24.3	19218	566,878	4088	4381
1974	55.92	24.92	23690	559,235	4606	5623
1975	55.9	25.47	26646	556,104	6486	4847
1976	55.89	26.13	30020	571,036	4112	5735
1977	55.85	26.68	33263	585,023	4633	4723
1978	55.84	27.3	38247	604,306	4835	5182
1979	55.88	27.67	45772	620,611	4847	4927
1980	56.33	28.28	60328	607,787	4722	5194
1981	56.35	28.9	71080	599,011	4200	6666
1982	56.31	29.54	80531	610,489	4305	5989
1983	56.35	31.93	91457	632,065	4162	3950
1984	56.51	32.25	107221	648,325	4703	4786
1985	56.68	33.04	123126	671,375	5316	6021
1986	56.85	33.83	143255	697,894	5743	7757
1987	57.01	34.63	167098	729,638	6397	8612
1988	57.16	35.42	200448	765,932	7553	11375
1989	57.36	36.24	240639	782,429	8747	13375
1990	57.56	37.07	289816	788,152	9830	14751
1991	57.81	38.01	331980	777,403	9805	14341
1992	58.01	38.82	372227	779,563	17024	15449
1993	58.19	39.63	426133	798,489	16304	16118
1994	58.39	40.44	482120	833,681	17992	16887
1995	58.61	41.24	548100	857,522	15946	18458
1996	58.8	42.39	618417	880,854	13900	20030
1997	58.2	43.34	683666	908,655	12876	23719
1998	58.5	42.13	740581	938,101	15570	24940
1999	58.51	43.0545	768935	966,551	17486	29566
2000	58.52	43.686	769201	1,005,542	17693	28390
2001	58.538	44.561	819623	1,027,905	19554	36526
2002	58.55	45.454	828151	1,048,456	14885	42655
2003	58.562	46.321	846243	1,074,858	31215	49202

Appendix 11. Cont....

YEAR	RERrsa/mk	RERuk/mk	RERus/mk	CPI mw	CPI uk	CPI us	CPI rsa
1973	3.941131	15.19932	11.96708	22.60193	15.92	29.15	6.72
1974	3.493252	13.77105	10.38919	23.73762	18.45	32.37	7.51
1975	2.781163	13.28966	10.0306	27.48202	22.93	35.32	8.52
1976	2.872029	11.9493	9.854821	31.27057	26.72	37.35	9.47
1977	2.769373	13.62291	9.099718	34.69055	30.96	39.77	10.53
1978	2.468752	12.64775	7.91972	26.8782	33.5	42.81	11.61
1979	2.242539	11.97714	6.753441	43.96714	38.02	47.64	13.13
1980	2.915671	15.88599	8.251508	5.33	44.85	54.07	14.95
1981	3.398526	16.59019	9.553692	5.96	54.49	63.33	19.74
1982	3.289694	16.09858	10.58552	6.54	57	65.36	22.18
1983	3.501309	14.35116	10.83355	7.43	59.82	68.18	24.75
1984	3.168575	13.46336	11.21835	8.91	63.45	70.61	28.77
1985	2.718029	14.82746	12.52941	9.85	65.62	71.92	34.14
1986	2.833333	16.64663	12.33919	11.24	68.35	74.61	39.63
1987	3.460732	18.51196	12.24979	14.06	71.7	77.61	44.71
1988	3.090086	18.79095	11.12633	18.83	77.29	81.35	51.27
1989	2.932777	18.14161	11.21421	21.18	84.61	85.74	58.65
1990	3.038331	18.45291	10.36398	23.68	89.52	89.37	67.62
1991	2.949446	17.34099	9.73057	26.66	92.91	92.08	77.03
1992	3.244928	18.23235	10.39985	33	94.36	94.8	84.47
1993	3.085504	15.86801	10.62623	40.51	96.7	97.27	92.09
1994	4.492848	24.51329	16.07328	54.55	97.8	99.1	98.4
1995	4.2398	24.2523	15.3602	100	100	100	100
1996	2.567667	19.07766	11.51903	137.6	102.45	102.93	107.36
1997	2.800126	19.20911	11.67178	150.18	105.66	105.34	116.54
1998	2.288163	29.07765	17.03291	194.85	109.27	106.97	124.57
1999	3.371004	28.19459	17.16826	111.7711	110.97	109.31	131.04
2000	3.26279	28.1102	18.28289	218.3973	114.298	111.708	139.689
2001	2.707612	26.08005	17.61761	226.6846	117.174	113.974	147.618
2002	2.105024	25.50182	16.40985	187.7225	120.05	116.24	155.547
2003	3.62167	33.10645	19.54973	127.2752	122.926	118.506	163.476