

Macroeconomic Determinants of Tourism Sector Performance in Malawi

Richard Zidana

Department of Planning and Research, Small and Medium Enterprises Development Institute (SMEDI), Private Bag 393
Lilongwe, Malawi, Southern Africa

Abstract: The aim of this study is to establish the macroeconomic determinants of tourism sector performance in Malawi. Specifically, the study focuses on macroeconomic factors that affect in-bound international tourist receipts. It is hypothesised that the levels of per capita income for tourists' source countries, nominal exchange rate, the levels of investment in the tourism sector; and political and economic stability of Malawi and/or neighbouring countries in the sub-region might be the main determinants. For estimation, the paper considers data spanning from 1980 to 2013 for the above-named variables. Ordinary Least Squares method is employed to analyse the relationship between the four variables and the level of international tourist receipts, used as a dependent variable. Upon testing, co-integration was established amongst the variables, although individually, the variables portrayed varying levels of integration. This enabled the paper to analyse both short and long run relationships in the model.

The results show that in the short-run, all variables are insignificant save for political and economic instability, which shows a negative relationship to tourist receipts, though weakly significant. Nevertheless, the long run equilibrium relationship shows that a rise in per capita income for source countries has a significant positive impact on tourist receipts in Malawi. In addition, political instability has a long-run, significant negative impact on receipts. But exchange rate and investment coefficients portray no significant impact.

Keywords: co-integration, in-bound tourists, Ordinary Least Squares, tourism-led growth hypothesis.

1. INTRODUCTION

The economy of Malawi is predominantly anchored by the agriculture sector, with tobacco income contributing to about 83% of foreign exchange earnings (Chirwa et al, 2008). Despite the heavy reliance on the sector, not much corresponding investment has taken place in the sector with regard to technological improvements and irrigation such that agriculture still remains hugely rain-fed. This greatly exposes the economy to shocks in the event of poor rains. More importantly, the huge reliance on tobacco as a foreign exchange source has, of late, been threatened by dwindling incomes from the crop caused by anti-smoking campaigns in the main export markets of Europe and other developed countries (GoM, 2006). Due to these challenges, the Government of Malawi showed its intent to diversify its investment efforts to non-traditional sectors, one of which is tourism. In addition to diversifying the economy, tourism also offers a vehicle to redistribute income between rural and urban areas. This is on account of the fact that many tourist sites in Malawi, both developed and underdeveloped, are concentrated in the rural districts of the country. Developing these tourist sites, therefore, provides employment opportunities to the unemployed people from the surrounding communities thereby directly boosting their incomes and living standards.

From the foregoing, the benefits of developing the tourism sector to the economy of Malawi can be analysed from two fronts: firstly, domestic forward and backward linkages to the other sectors of the economy through their provision of supporting goods and services as well as infrastructure to the tourism sector as the other sectors respond to induced demand (hence generating more employment). Secondly, there is the foreign exchange earning aspect of tourism to replace tobacco in view of the current tobacco market uncertainties. The interest of this paper is on the latter aspect. For tourism to achieve its envisaged role as a foreign exchange earner, both the tourism-facilitating infrastructure and

enabling macroeconomic and political environment ought to be conducive enough to attract in-bound tourists. The creation of this conducive and attractive environment becomes even more pivotal to Malawi tourism's success given that the country has to compete with, not only other countries in the region with superior tourism infrastructure and marketing strategies, but also the rest of the world, for the available international tourists.

2. SITUATIONAL ANALYSIS OF THE TOURISM SECTOR IN MALAWI

Malawi is amongst the countries with rapidly growing vibrant tourism sectors in the Southern African Development Community (SADC) region. In 2012, the country attracted 770,341 tourists contributing K59.6 billion and the number of international tourists increased to over 800,000 in 2013 (Annual Economic Report, 2013). The figure has more than quadrupled from slightly below 200,000 tourists in 1995. The trend in tourist arrivals has largely been upward, though with insignificant fluctuations, implying an ever increasing interest for international tourists to visit the country. The resource base of tourism in Malawi includes scenic landscapes, national parks and wildlife reserves, national heritages as well as other natural attraction physical features such as lakes and rivers.

Despite the potential natural resources, the tourism industry is still in its infancy. Over the years, the industry has faced key constraints that threaten its growth potential. These include the unavailability of adequate infrastructure leading to inaccessibility of most tourist destinations in the rainy season, inadequate investment in the hotel industry leading to fewer hotels and lodges for accommodation that meet international standards along the shores of Lake Malawi, urban centers and major tourist centers. There is also lack of adequate investment incentives put in place by government to encourage investment in the sector as well as inadequate financing of marketing activities. The tourism sector also faces a shortage of adequately trained manpower to efficiently and effectively serve the tourism industry in the country.

As a way forward in countering the aforementioned challenges, the Government of Malawi developed the National Tourism Policy in 2006. Among the major objectives of the policy are the following: “

- a) *To ensure systematic and planned development of the (tourism) product*
- b) *To facilitate tourism development and lobby for public sector investment programmes towards addressing the needs*
- c) *To promote and facilitate both local and foreign investment in tourism facilities of international standards*
- d) *To support the conservation of natural resources including wildlife to promote more nature-based tourism in Malawi*
- e) *To highlight the quality and variety of Malawi's unique natural, historic, cultural and environmental attractions in order to attract more tourists” (GOM, 2006:8)*

The objectives espoused by the policy mainly focus on the re-organization of resources, creation of necessary incentives for investment and exploring the existing synergies with a view to promote investment in the tourism sector. However, apart from infrastructure, the potential role played by the macroeconomic environment in determining the expected successes cannot be ignored. Well-developed tourism infrastructure without a supportive macroeconomic environment might work counter to the expected objectives. The interest of this paper is, therefore, exploring the macroeconomic variables that may have an impact on the performance of tourism industry in Malawi.

3. STATEMENT OF THE PROBLEM

In recent years, the Government of Malawi realized that tourism has the potential to contribute significantly to economic growth and development and hence to the poverty alleviation agenda. This realization is underscored by the fact that tourism sector was taken on board as one of the priority sectors of the Government in the current Malawi Growth and Development Strategy (MGDS II). The MGDS II focuses on nine sectors which are believed to have direct and indirect linkages to other sectors and hence have the potential to drive economic growth. Since 2000, the contribution of tourism sector to total Gross Domestic Product has been growing at an average rate of 1.8% in real terms per annum (Annual Economic Report, 2013). This growth, though minimal but consistent, has generated interest and need from policy makers for the Government and private sector to invest more as the number of tourist arrivals keeps on increasing as presented in Table 1 in the preceding section.

It is also encouraging to notice that within the last five years, tourism developments have taken place at a faster pace in response to the growing number of tourist arrivals. These developments range from the construction of up-market eco-

lodges in protected areas to four-star city hotels. In addition, Malawi has witnessed a significant entry into the tourism sector of car hire companies, tour operators, travel agents as well as small and medium scale enterprises in the service and accommodation sector.

The importance of tourism to an economy in terms of its contribution to Gross Domestic Product (GDP), government revenue, unemployment, foreign exchange earnings and its indirect linkages to the other sectors brings into fore the need to investigate the determinants of tourism growth in Malawi. A known study on tourism was done by Magombo (2011). However, the focus of the study was the descriptive analysis of how the tourism and accommodation sector in Malawi has evolved and grown since independence in 1964, including the attendant challenges and opportunities that exist. Studying the determinants of the performance of the tourism sector in Malawi is crucial to guide policy makers as to which macroeconomic variables ought to be monitored so as to create an enabling environment for the growth of the sector and the economy in general. There is no study of this nature done in Malawi on tourism industry; hence this paper aims at filling the existing gap. In trying to investigate the determinants, the study will look at both domestic macroeconomic conditions and international factors that may affect tourism arrivals. For the purpose of this study, the performance of the tourism in relation to the determinants to be studied will be measured by total annual receipts generated from tourism.

Objectives and significance of the study:

The general objective of this study is to investigate the macroeconomic determinants of the performance of tourism sector in Malawi. Specifically, the study tries to investigate the impact of the following four variables on tourism sector performance: source countries' economies, exchange rate movements of the Malawi kwacha, levels of investment and economic stability.

As mentioned earlier, the economy of Malawi is generally dependent on agriculture as a source of raw materials for industry, source of staple food and a generator of foreign exchange. Specifically, tobacco contributes over 80% of foreign exchange earnings. This scenario puts the country at the risk arising from any shocks emanating either from the production side or the agricultural export market. In a bid to diversify, there is need for the Government to have relevant information for the alternative sectors of focus in order to come up with well-informed policy prescriptions. By exploring the determinants of tourism performance in Malawi, this study is significant in informing the design of policies that do not bring conflicts in the pursuance of macroeconomic objectives. Policies regarding foreign exchange, economic growth and inflation targets can better be conceived if relevant information on their effects on policy targets is made available through research.

4. LITERATURE REVIEW

There exists no unifying theoretical framework in tourism economics that clearly explains the determinants of tourism sector performance or demand for tourism products. As such, most empirical studies in the field have heavily relied on conventional neoclassical economic theory to investigate demand factors. In theory and empirical work, tourism services are considered to be normal goods and, therefore, the analysis of their demand is done under the classical utility maximizing theory. Economic theory predicts the demand for normal goods or services to be determined by, among other things, product's own price, price of substitute products, consumer's income and other related determinants. In line with economic theory and a body of empirical studies that have been done in tourism economics, this paper tries to present diverse factors that play a role in influencing demand for tourism services hence the performance of the tourism sectors in a particular economy. Finally, the study recognizes the diversity in the factors but the estimation of the model confines itself to the macroeconomic determinants.

Tourism-Led Growth (TLG) hypothesis:

Development practitioners have, for long, recognized that economic restructuring can be achieved by, among other strategies, moving labour force from the highly traditional sectors of the economy like agriculture to the service sectors. One such sector that can spur the movement is tourism. This recognition has led to a growing body of literature on the impact of tourism on economic growth. It is also recognised that, notwithstanding its contribution to the level of economic growth, tourism has strong linkages to other sectors of the economy which strengthen its role on growth. Tourism boosts other sectors namely construction, communications, entertainment, transport and the food and drinks sector as these sectors help to service the tourism industry. Empirical studies that have been conducted to analyse this relationship have

been termed as testing of the Tourism-Led Growth Hypothesis. A Tourism-Led Growth Hypothesis postulates that 'an expansion in tourism activities precedes economic growth' (Mahalia, 2012:15). The hypothesis was first validated by Balaguer and Cantavella (2002) where results portrayed tourism as a very strong ingredient to growth in Spain.

Because most of the earnings from tourism are in form of foreign exchange, the Tourism-Led Growth Hypothesis also argues that tourism leads to potential positive growth effects to all other sectors of the economy as the foreign exchange so earned can be used to import capital goods and services for further production. Since consumption is one of the main components of Gross Domestic Product (GDP), travel and tourism boosts the demand for goods and services and this is reflected by economic activities generated by such industries as airlines, hotels, travel agents as well as passenger transportation (WTTC, 2013). Tourism also boosts restaurants and leisure activities dealing directly with tourists, long to medium term tourism investments such as construction of hotels. It also induces government spending on tourism and travel in the form of tourism promotion and marketing efforts.

In-bound and out-bound tourism distinction:

Studies in the field of tourism often draw a distinction between in-bound and out-bound tourism. In studying factors determining in-bound tourism, an analyst looks at such factors as they affect decisions for tourists from the rest of the world to demand tourism services from the domestic economy. On the other hand, out-bound tourism looks at the demand by residents of a domestic economy for tourism services from other countries, other than their own tourism services. For the purpose of this study, an in-bound focus is adopted.

Song, Li and Fei (2010) argue that there are a wide range of factors that may affect demand for tourism. These include economic, attitudinal and political factors. On the economic front, they present that income and prices play a pivotal role in influencing demand for tourism. This view is supported by Crouch (2011) who contends that income is the most important of all the explanatory variables influencing tourism demand. He argues that income elasticity generally exceeds unity but is usually below two. The implication of the restriction of the elasticity to below two is that international travel is regarded as a luxury that can always be forgone when people's incomes decline. Crouch (2011) also posits that the price variable ought to include the prices of tourism products and services both for the destination and substitute destinations.

In a different paper, Song, Witt and Li (2009) recognises that according to demand theory, the most critical factors that shape a tourist's budget line are the prices of the tourism products/services and the incomes of the tourists. They argue that this theory is supported by empirical studies that have concluded that the income of origin country or region, the own price of a particular destination and the substitute prices of destinations deemed as alternatives to a tourist are the main determinants.

Ritchie and Crouch Model of Competitiveness:

The Ritchie and Crouch (2003) Model as quoted in Raffay and Papp (2011) is also one of the theories of competitiveness used to explain variations in tourism demand amongst various destinations over time and space. It is billed as the most detailed and comprehensive work developed so far in explaining the competitiveness dimension and provides the benchmark for many researchers in the tourism sector to develop and modify their models. Ritchie and Crouch lumped thirty six (36) determinants of competitiveness into five (5) broad components, namely: supporting factors and resources; core resources and attractors; destination management; destination policy, planning and development; and qualifying and amplifying determinants. The five broad components are analysed in the context of global or macro environment and competitive or micro environment of the tourism destinations. According to the framework, it is the differences in the preceding five components that lead to differences in attractiveness among competing tourism destinations.

The Ritchie and Crouch Model could be relevant in the case of Malawi as destination management and policy in terms of the macro economy might have a bearing on the performance of tourism sector. Destination policy management in this case includes how Malawi manages its macroeconomic policies, an element that might have an impact on tourism sector performance, hence the need to understand such macroeconomic policies.

Pull factors for international tourism arrivals:

Some authors have also analysed a number of pull factors that have a bearing on international tourist arrivals. These factors include nature, price level, safety, infrastructure and educational levels of a destination country. In addition,

entertainment activities and tourism sights in the country of destination play a crucial role in international tourism decision making. These include the quality of bars, beaches, sports facilities, quantity and quality of accommodation facilities, memorial sites and museums (Vietze, 2010). The levels of investment a particular country puts in the tourism sector will be a good proxy variable that can capture the quality and quantity of tourism infrastructure.

Papatheodorou (2001) as quoted in Giacomelli (2006) argues that a particular tourist destination's characteristics can be divided into two categories: attractions and facilities. Attractions include those characteristics whose amount depends on destination's natural and historical features. The facilities component encompasses characteristics originating from human action and effort (i.e. tourism infrastructure, entertainment services, etc.). Taking into account the role of these factors, it is concluded that "rational individuals are interested in maximising their tourism utility function defined in the characteristics space. Finally, individuals are constrained by budget considerations" (Giacomelli, 2006:15).

Empirical study findings:

Two broad categories of studies have been done in the tourism sector elsewhere. The first category tries to measure the impact of tourism receipts/ revenue or tourist arrivals on economic growth of individual or a group of countries, in line with the Tourism-Led Growth Hypothesis. The second category tries to investigate factors that determine the levels of demand for tourism services and products over time and space.

In a study of Tourism and Economic Growth in Africa, Kareem (2008), regressed economic growth on tourism expenditure and tourism receipts. The study covered 36 African countries using data from 1995 to 2004. The findings showed significant evidence that tourism expenditure in African destinations leads to economic growth.

Khalil et al (2009) and Georgantopoulous (2013) also undertook studies on the impact of tourist receipts on economic growth in Pakistan and India respectively. The findings all show overwhelming evidence in favour of the tourism-growth thesis.

A study by Tourism Research Australia (2011) tried to investigate factors affecting in-bound tourism in Australia with a special focus on the role, impact and implications of the Australia dollar. The study also included income as one of the key determinants of decision by tourists to travel, in addition to exchange rate. The findings of the study showed that in the short run, 'income is responsible for the strongest causality in relation to tourism demand' (TRA, 2011: v). Specifically, a one percent increase in in-bound source market incomes leads to tourism demand increase of 0.8%. In the long term, the causality was even found to be stronger. A 1% increase in in-bound source market incomes increases tourism demand by 1.3%, indicating a positive movement from inelasticity in the short run to elasticity in the long run. The study also concluded that exchange rate volatility has an impact on Australia's in-bound tourism. There is a negative relationship between the strength of the Australian dollar and the demand for in-bound tourism. The appreciation of the Australian dollar against the currencies of the source markets for in-bound tourists entails that tourists have either to spend more on their tourism budgets or reduce the number of days of the visits.

Closer to Malawi, Simuchimba (2010) also carried out a study on the demand determinants of tourism in Zambia. His findings show that the number of airlines servicing Zambia, transportation costs, levels of incomes and the cost of living have significant impacts on the levels of tourism services demanded.

5. RESEARCH METHODS AND METHODOLOGY

The study employs a quantitative approach. Time series econometrics diagnostic and estimation procedures are applied to analyse the macroeconomic determinants of tourism performance in Malawi.

In the study, performance of the tourism sector is measured by the levels of demand for tourism services in a particular year. Such demand levels are reflected in the amount of receipts generated from the tourism sector through tourist arrivals. Kim (1998) as quoted in Song, Li and Fei (2010) categorised the measurement criteria for tourism demand, and hence the performance of tourism, into four groups. The first is the *doer criterion* which uses the number of tourist arrivals, the number of tourist visits and the visit rate. The second is the *pecuniary criterion* which uses the level of tourist receipts or share of tourist receipts in income. The third one is the *time consumed* criterion which employs tourist days or tourist nights as a measurement criterion. The fourth one is the *distance travelled* criterion that considers the distance travelled by tourists in kilometres. However, Song, Li and Fei (2010) argue that of the four criteria, the *doer criterion* and the *pecuniary criterion* are the most used due to the consistency in the availability of their data. This implies that tourism

arrivals and tourism receipts (expenditures) are the mostly widely used measurement criteria in empirical studies on the performance and demand for tourism goods and services. These receipts include payments made by in-bound tourists to airlines for their international travel and any other payments made for consumption of goods and services in the destination country.

To measure tourism expenditures, two sources of data have been recommended in empirical studies: expenditure figures available from source countries; and receipts generated and available in destination countries. But Divisekera (2003) points out that a judgment needs to be made by the researcher between the two sources because expenditure figures from source countries represent the planned spending by those travelling abroad as recorded at the point of departure in their respective countries. On the other hand, receipts correspond to the actual expenditure by tourists in the destination country or “destination-specific spending on tourism goods and services” (Divisekera, 2003:6). She, therefore, seems to recommend the use of receipts in modeling since actual spending is what counts in destination country’s tourism as opposed to the planned spending in the tourist’s country of origin.

The study, therefore, employs regression analysis using Ordinary Least Squares (OLS) procedure to estimate the relationship between tourist receipts and the hypothesised explanatory variables. Unit root tests (Augmented Dickey-Fuller test) are applied to ensure that the series eventually used for estimation are stationary so as to avoid the risk of running a spurious regression. In addition, Breusch-Pagan/Cook-Weisberg and Variance-Inflating Factor (VIF) tests for heteroscedasticity and multicollinearity, respectively, were conducted.

The study uses annual time series secondary data spanning 1980 to 2013. Various sources were consulted for the data as follows: Exchange rate and inflation data was sourced from World Bank National Accounts Data, real per capita income data was sourced from World Development Indicators (July, 2014), data on annual tourist receipts was sourced from the Yearbook of Tourism Statistics compiled by the World Tourism Organisation (WTO) as well as compilation from the Malawi Ministry of Finance as well as the National Statistical Office publications. The model is estimated in Stata version 12.

Model specification:

As argued by Song, Li and Fei (2010), there are a wide range of factors that affect tourism demand. The factors can be economic, attitudinal and cultural. However, the interest of this paper is to explore the macroeconomic determinants of tourism performance which are part of economic factors within the broader framework of determinants.

Most of the literature analysing the performance of in-bound tourism points to the fact that incomes and prices are the major factors. Being a discretionary good, a rise in real incomes of individuals is more likely to lead to increase in demand for tourism and hence increased receipts for the destination country. Conversely, an increase in the prices of goods and services in the destination country is more likely to have a negative impact on tourism as it erodes the purchasing power of in-bound tourists.

For the purpose of this study, tourism receipts are predicted to be determined by the following macroeconomic variables: per capita income levels of source countries, exchange rate and level of investment in the sector as well as political and economic stability. Exchange rate is introduced to capture the relative prices of goods and services between Malawi and source countries for international tourists.

The study recognises the role played by political and economic stability in the tourists’ decision making equation with regard to the destination selection process. More importantly, when most in-bound tourists are making a decision to visit Malawi, they normally have to travel to more than one country within Malawi’s neighbouring countries in a single trip. For instance, a tourist would visit Mozambique, Malawi, Zimbabwe and Zambia in a single trip that includes visits to major tourist attraction sites like the Victoria Falls in Zambia/Zimbabwe; over and above visiting Malawi. This implies that any disturbance in the political and economic stability for Malawi’s neighbouring economies would sway potential tourists’ decisions, who aim to maximise the number of tourist sites visited per trip, to a particular region. This results in the introduction in the model, of a dummy variable for political and economic instability.

In the model, income level is expressed in terms of per capita GDP, resulting into the model:

$$L_{tour} = \beta + \delta L_{percap}_{eu} + \rho exch + \lambda L_{inv} + \uparrow regst + \mu$$

where: tour is the amount of annual tourist receipts used as an indicator for tourism sector performance in the model, **percap_{eu}** is the annual per capita income of European countries. Statistics from the Department of Tourism in Malawi shows that annually, over 67% of total in-bound tourists visiting Malawi come from Europe. The main purpose of their visits is to spend their holidays. The United Kingdom alone account for, on average, 14.4% of the annual total in-bound tourist arrivals. In addition, 9% of tourists from this region come to Malawi for the purposes of visiting families and friends (GoM, 2010). Europe is, therefore, used as a source region for in-bound tourists for the purposes of determining the income effect. Apriori, theory should predict that a growth in Europe's per capita income should lead to an increase in in-bound tourist receipts as people have, on average, more disposable income, hence an increased share of their income to spend on tourism as well as increased number of days of stay per visit.

exch is defined as the price of the tourist generating countries' currency in terms of the Malawi kwacha, **inv** is the level of investment in the sector. Levels of investment are assumed to have a bearing on the quality of tourism infrastructure hence the attractiveness of a destination. A positive sign is expected from this coefficient; and **regst** is a dummy variable for political and economic instability in Malawi's neighbouring states. In the study, the Mozambican civil war that spanned from 1979 to 1992 and the severe macroeconomic challenges experienced by the Zimbabwe economy in the 2000s have been considered as the major disturbances to political and economic stability for the sub-region in the period under study. Therefore, the dummy variable assumes the value of 1 for years of instability and 0 otherwise.

6. MODEL ESTIMATION AND EMPIRICAL RESULTS

Before conducting the regression analysis, statistical properties of the time series variables to be used in the estimation process are established.

Unit root tests:

Unit root tests are carried out on individual series, with a view to determine whether the variables are stationary or not. The motivation behind conducting stationarity tests is that most macroeconomic data tend to possess stochastic trends that can be removed by differencing the variables. Augmented Dickey-Fuller test is employed to determine the existence or non-existence of unit roots in the individual series, except for the dummy variable. Table 1 below summarises the tests:

Table 1: Unit root test results

Variable	Levels	First difference	Second difference	Order of integration
Ltour	-0.944	-6.611		I (1)
Lpercap _{eu}	-4.081	-		I (0)
Linv	-1.295	-5.491		I (1)
exch	4.786	0.792	-4.689	I (2)
regst	n/a	n/a		n/a

N.B: Conclusions are based on critical values of **-2.978** at 5% level of significance in levels, **-2.980** and **-2.983** after first and second differencing respectively.

Based on the results from Table 1 above, it can be seen that **Lpercap_{eu}** is stationary in levels I(0), while **Ltour** and **Linv** are non-stationary in levels but become stationary after taking their first differences, I(1) and **exch** is stationary after second difference.

Testing for co-integration:

According to Gujarati (2009), subjecting individual time series to unit root tests leads to establishment of conclusions about the existence of stochastic trends in the variables resulting in their non-stationarity. However, empirical econometric studies have also established that most macroeconomic time series share the common trend such that the regression of a non-stationary series on other non-stationary series gives consistent estimates of a regression model. If such a scenario is established, it is said that the variables are co-integrated, implying that they have a long run or equilibrium relationship amongst themselves.

Stationarity of the linear combination of the variables is investigated by testing the residuals of the regression model in levels and Table 2 below summarises the results. The Augmented Dickey-Fuller test is also employed here

Table 2: Co-integration test results

Variable	Observed test statistic	Critical value at 5% level of significance
Residuals	-3.108	-2.978

The results from Table 2 show that the residuals are stationary at 5% level of significance; hence the null hypothesis of non-stationarity is rejected.

Having established the existence of a long run relationship in the equation, there is need to investigate the number of co-integrating equations. This is done by employing the Johansen test for co-integration. The results are presented in Table 3 below:

Table 3: Johansen test for co-integration

Rank	Eigenvalue	Trace statistic	Critical value at 5% level of significance
$r = 0$	-	54.1075	47.21
$r = 1$	0.57762	28.2516**	29.68
$r = 2$	0.42652	11.5707	15.41
$r = 3$	0.31610	0.1723	3.76
$r = 4$	0.00573	-	-

From the results, the trace statistic at $r = 0$ of 54.1075 exceeds its critical value of 47.21. This implies that the null hypothesis of no co-integrating equation in the model is rejected. The result is in line with the Augmented Dickey-Fuller test on residuals which also confirms the existence of long run relationship. Further, the trace statistic at $r = 1$ of 28.2516 is less than its critical value of 29.68; hence we fail to reject the null hypothesis that there is one or fewer co-integrating equations in the model. We are, therefore, compelled to accept 1 as the number of co-integrating equations in the model because Johansen's method for estimating r is to accept the first r for which the null hypothesis is not rejected. This effectively points to the existence of only one co-integrating equation as specified in the study

Tests for multicollinearity and heteroscedasticity:

Table 4: Variance-inflating Factor test for multicollinearity

Variable	VIF
percap_eu	4.02
exch	3.95
inv	3.12
regst	2.31
mean	3.35

The results in Table 4 above show that the individual values of VIF are below 5, indicating the absence of multicollinearity. Any VIF value of above 5 indicates the presence of multicollinearity. Further, results of the Breusch-Pagan/Cook Weisburg test for heteroscedasticity show a p-value of 0.6991. This p-value is greater than the significance level of 0.05. We, therefore, fail to reject the null hypothesis of homoscedasticity. Any observed p-value greater than the level of significance implies the existence of heteroscedasticity

Short-run and long-run results of the estimated model:

Having established co-integration and the number of co-integrating equations, both short- and long run estimations of the model are done. In the short run model, an error correction term is introduced to explain the adjustment process towards the equilibrium state. Both short- and long-run results are presented below:

Table 5: Short-run estimated results

Dependent variable: DLtour

Variable	Coefficient	Standard error	t-ratio
Lpercap_eu	0.0052226	0.1159492	0.05
DLinv	0.0701851	0.0656935	1.07
D2exch	-0.0015903	0.0028075	-0.57
regst	-0.1189821	0.0880333	-1.35*
ECT	-0.486263	0.1451905	-3.35**
Constant	0.0930209	1.146828	0.08

Number of observations: 32

 $R^2 = 0.37$ **Table 6: Long-run equilibrium results**

Dependent variable: Ltour

Variable	Coefficient	Standard error	t-ratio
Lpercap_eu	1.755394	0.2785639	6.30**
Linv	0.0839889	0.074061	1.13
exch	0.0002388	0.0013585	0.18
regst	-0.4804596	0.1894355	-2.54**
constant	-1.074255	2.567461	-0.42

Number of observations: 34

 $R^2 = 0.88$

7. INTERPRETATION OF RESULTS AND DISCUSSION

The short run model shows that almost all the coefficients are insignificant in the short run. The coefficient for regional economic and political instability is closer to significance at 10% level, but insignificant at both 5% and 1% levels. The error correction term (ECT) is very significant with the expected negative sign. Specifically, the error correction term indicates that about 49% of disequilibrium in the short run is corrected within a year. The weaker R-squared of 0.37 implies that in the short run, the performance of the source countries' economies of in-bound tourists, the exchange rate depreciation or devaluation, the level of investment in the tourism sector in Malawi as well as political and economic stability in the sub-region only explain 37% of in-bound tourist receipt performance. Thus, in the short-run, there are many other different sets of factors explaining tourist receipts other than the ones being investigated in this study.

However, since the coefficient for political and economic instability for Malawi or its neighbouring countries is weakly significant at 10% and bearing the expected negative sign, it can be concluded that instability can be the only factor that might lead to tourists to withhold their decisions to visit Malawi and opt for other destinations in the short-run. This makes logical sense as under normal circumstances, tourists coming from as far as Europe should withhold their long trips to as far as Malawi in the short run until they get correct information about the actual levels of instability and assurances of their personal security before they embark on such trips. The insignificance of the coefficients for source countries' incomes, exchange rate and investment might explain the fact that in the short run, in-bound tourists might have already made their travel plans and budgets prior to the unanticipated changes in Malawi's macroeconomic factors to the extent that any such short-term changes in the environment, other than political instability, might not have any effect on their decisions to travel to Malawi.

On the other hand, the long run model shows that per capita income of source countries, exchange rate, investment levels and political and economic stability explain 88% of the determinants of tourism sector performance in Malawi. All the variables bear the expected signs. Per capita income of source countries as well as political and economic stability are

significantly related to long-run performance of tourism sector, while the coefficients for investment and exchange rate are insignificant at all conventional levels of significance.

Specifically, the results show that a 1% increase in per capita income of source countries is likely to lead to an increase of about 1.8% in tourist receipts for Malawi. The income coefficient is highly significant at 10%, 5% and 1% levels. This result is in line with propositions by Crouch (2011) who contended that income elasticity of tourism demand generally exceeds unity but is usually below 2. He also argued that income is the most important of all the explanatory variables influencing tourism demand. In agreement with the proposition, the long-run study findings from Table 6 above show that income is the most significant of all explanatory variables in the model. Crouch (2011) justified the restriction of the elasticity to below 2 by arguing that international travel is regarded as a luxury, hence it can always be forgone when people's incomes decline significantly. Similar studies done across time and space have also yielded identical results. These studies include Australian Tourism Research (2010) and Divisekera (2003) both done in Australia; Yang, Liu and Qi (2014) done in China; Okech (2010) in Canada and Giacomelli (2006) in Japan.

Political and economic instability is predicted to lead, on average, to a decline in tourist receipts of about 0.5%. This result is also in conformity with the observed trend that most in-bound tourists from Europe usually visit more than one destination when coming to Malawi. Therefore, a sustained period of political instability in neighbouring Mozambique between 1978 and 1992 as well as the heightened economic instability in Zimbabwe had a dampening effect on the levels of tourist receipts in Malawi through reductions in international tourist arrivals. Some tourists would rather postpone the trip altogether rather than undertaking it only to visit Malawi without passing through other famous tourist attraction sites like Caborabassa in Mozambique and Victoria Falls in Zimbabwe, among others. This is in line with the behaviour of any consumer who would like to maximise utility with little resources, in this case, maximising the number of tourist site visits within the sub-region per single trip and air travel costs.

Possible explanation for the insignificance of the investment coefficient can be associated with the fact that data for private investment in the tourism sector was hard to come by. As such, only public investment expenditure figures were used for estimation. With high levels of inefficiencies in public finance management in Malawi, rent seeking behaviour by some officers entrusted to handle public sector investment projects as well as inherent intra-sectoral diversions of resources during budget implementation; it is highly likely that there are substantial leakages of resources away from tourism to other sectors. This eventually reduces the resultant impact of the planned tourism sector investment. It is also important to acknowledge that other than providing facilitating infrastructure, the role of the government in tourism investment is very remote. Actual tourism infrastructure namely hotels, lodges, etc. is provided by the private sector. This is an area where further research might be needed to analyse the impact of private investment in tourism distinctly.

Lastly, the regression results show that the undertaking to free the Malawi kwacha over the years has not yielded significant long-run impact on tourism sector, although the same policy might have possibly yielded positive expected outcomes in respect of international merchandise trading for the country.

8. CONCLUSION

In conclusion, this study has tried to investigate the macroeconomic determinants of tourism sector performance in Malawi. The focus of the study was on the amount of tourist receipts realised from in-bound tourism. Both short-run and long-run regressions were run since existence of a long-run equilibrium relationship was established amongst the variables. In general, the study has established that macroeconomic variables impacting on the amount of in-bound tourist receipts are external, just as the tourists themselves: they are beyond the control of Malawi. The results show that the performance of source countries' economies and political and economic stability within the sub-region are the only factors having a significant impact on tourism sector performance. Exchange rate devaluation or depreciation has not had any significant impact on receipts from in-bound tourists. Similarly, the level of investment in the tourism sector has not had any significant impact both in the short- and long-run. However, it has been recognised that the non-significance of the latter might be attributed to the fact that only public sector investment expenditures in the sector were considered in the study at the expense of the most critical and influential private sector that invests heavily in the tourism. This was due to unavailability of private sector expenditure data, and this might be an exciting area for further research on the topic

REFERENCES

- [1] Belaguer, J., Cantavella, M., 2002. Tourism as a long run economic growth factor: the Spain case. *Applied Economics*, Vol. 34, No. 7, pp 877-884
- [2] Chirwa, E., Kumwenda, I., Jumbe, C., Chilonda, C., Minde, I., 2008. Agricultural growth and poverty reduction in Malawi, ReSAKKS Working Paper, No. 8
- [3] Crouch, G., 2011. Destination competitiveness: An analysis of determinant attributes, *Journal of Travel Research*, Vol.50, No.1, pp27-45
- [4] Divisekera, S., 2003. A model of demand for international tourism, *Annals of Tourism Research*, Vol. 30, No. 1, pp 31-49
- [5] Georgantopoulos, A., 2013. Tourism expansion and economic development: VAR/ECM analysis and review for India. *Asian Economic and Financial Review*. Vol. 3, No. 4, pp 464-482
- [6] Giacomelli, A., 2006. Tourism demand. Thesis (PhD). The University of Insubria
- [7] Government of Malawi, 2013. Annual economic report, Lilongwe: Ministry of Economic Planning and Development.
- [8] Government of Malawi, 2006. National Tourism Policy, Lilongwe: Ministry of Tourism, Wildlife and Culture.
- [9] Government of Malawi, 2010. Tourism Annual Reports (various issues), Lilongwe: Ministry of Tourism, Wildlife and Culture
- [10] Gujarati, D., Porter, D., Gunasekar, S., 2009. Basic Econometrics, New Delhi: McGraw Hill Education Inc.
- [11] Kareem, O., 2008. Tourism export and economic growth in Africa. Paper presented at the 13th African Econometrics Society (AES) Conference, Pretoria, July, 2008
- [12] Khalil, S., 2009. The role of tourism in economic growth: Empirical evidence from Pakistan economy
- [13] Magombo, A., 2011. The development of tourism and the accommodation sector in Malawi since independence. Thesis (MA). University of Witwatersrand
- [14] Mahalia, J., 2012. Revisiting the tourism-led growth hypothesis for Barbados: A disaggregated market approach. *Regional and Sectoral Economic Studies*, Vol. 12, No 2, pp 15-26
- [15] Okech, R., 2010. Tourism development in Africa: Focus on poverty alleviation *The Journal of Tourism and Peace Research*, Vol. 1, No. 1
- [16] Raffay, A., Papp, Z., 2011. Factors influencing the tourism competitiveness of former socialist countries. *Journal of Studies and Research in Human Geography*, Vol. 5, No. 2, pp21-30
- [17] Simuchimba, B., 2010. An analysis of the determinants of tourist arrivals in Zambia (1999-2008). Dissertation (MA). University of Zambia
- [18] Song, H., Li, G., Fei, B., 2010. Tourism demand modeling and forecasting: How should demand be measured? *Tourism Economics*, Vol. 16, No. 1, pp16-81
- [19] Song, H., Witt, S., Li, G., 2009. The advanced econometrics of tourism demand. London: Routledge.
- [20] Tourism Research Australia, 2011. Factors affecting the in-bound tourism sector- the impact and implications of the Australian Dollar, Canberra: Department of Resources, Energy and Tourism
- [21] Vietze, von D., 2010. Determinants of tourism and its potential for sustainable economic development: Empirical evidence. Thesis (PhD). Friedrich- Schiller- Universitat Jena
- [22] World Travel and Tourism Council, 2013. Methodology for producing the 2013 WTCC/ Oxford Economics Travel and Tourism Economic Impact Research. Available at www.wttc.org.
- [23] Yang, Y., Liu, Z., Qi, Q., 2014. Domestic tourism demand of urban and rural residents in China: Does relative income matter? *Tourism Management*, Vol. 40, pp 192-203.