THE DETERMINANTS OF HOTEL OCCUPANCY IN JAMAICA 2000 – 2006

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ABSTRACT

The aim of this paper is to establish the primary determinants of hotel occupancy in Jamaica for the period January 2000 to December 2006. The rationale is to help practitioners of Tourism and Hospitality management identify the determinants that have the biggest impact on hotel occupancy. The empirical results showed that stopovers and events such Jamaica Jazz & Blues festival and Raggae Sumfest are the main economic factors affecting occupancy levels. Other variables such as adverse weather conditions, exchange rate, crime and length of stay while exhibiting some influence are not statistically significant. The study, also, seeks to establish the exact nature of the influence exerted by the annual Jazz and Reggae Sumfest festivals on hotel occupancy. Given the importance of tourism development to the Jamaican economy, this paper helps to establish the argument that as government expansionary room policy continues, at a level ahead of current stopover demand, hoteliers will in the near future be forced to reduce prices, in order to sell excess room capacity.

Key Words: hotel occupancy, stopover, regression, Jazz & Blues Festival, Sumfest

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1. Introduction

Jamaica attracted approximately 0.004% of international tourist guests in 2006 (WTO) and was ranked 89 (out of 176 countries) in absolute size within the world travel and tourism industry but is placed 19 in terms of relative contribution to the national economy (World Travel and Tourism Council-TSA Report, 2008). Tourism brings to the economy several important benefits/ contributions. The two most critical are the earning of much needed foreign exchange and the creation of jobs. During the 1996-2006 period international tourism receipts almost doubled jumping from US$1 b to US $1.9 b (Bank of Jamaica, 2007). Today, the industry's earning represents some 17% of the country's GDP and 37% of total export activities. (Bank of Jamaica, 2007) thus, making the industry the leading source of foreign exchange inflows into the country's balance of payments. Even though the industry is not the largest contributor to real GDP it is now recognized as the leading architect of jobs creation currently accounting for some 80,000 direct and 180,000 indirect jobs at the end of 2007(Global Travel & Tourism Partnership, 2008) while at the same time the industry is projected to generate, both directly and indirectly, 1 in every 3.7 jobs by 2008 (WTTC). Published data (Bank of Jamaica, 2007) show that tourism is not only the fastest growing economic sector but has emerged as the most dominant form of economic activity within the Jamaican economy over the last decade. In spite of operating in a stagnating macro economy which grew, on average, at 1.27 percent per annum over the period 1997-2006, tourism recorded growth rates in excess of 5% per annum with arrivals moving from 1.2 to 1.7 million, over the same period.

In spite of the apparent sturdy growth in arrivals and gross international receipts the industry is consistently plagued with excess room capacity which limits its ability to make a greater contribution to the national economy. This point is underscored when a comparison is made of the industry's occupancy level with those of its major competitors in the region. At the end of 2006 Jamaica with a hotel room stock of 24,947 managed to achieve an occupancy rate of 61.4% thus suggesting that the industry has some 9,630 excess rooms or 38.9% unused capacity (Jamaica Tourist Board, 2007). In contrast other tourism jurisdictions, such as Aruba, British Virgin Islands Dominican Republic, and Mexico (Cancun) which are in close proximity and are perceived as Jamaica's principal competitors have rates of 80.7%, 83.4%, 74.24% and 76.4%,

respectively (Caribbean Tourism Organization, 2004) which are significantly higher than that achieved by the Jamaican industry. High occupancy levels not only make a location desirable but can induce investors to maintain or even increase their investments. Identifying and, understanding the factors that influence hotel occupancy will, also, facilitate the strategic planning and augment the decision making process of hotel management.

The challenge to maintain or even improve occupancy level in the industry will become even more critical if the planned targets, as set out in the tourism master plan (2000) which requires room stock to move from 24,947 to 35,000 units by 2010, were to be achieved. For this reason the main research focus of the paper is to identify some of the critical factors that influence the rate of occupancy in the Jamaican hotel industry. The paper, however, begins with an analysis of trade liberalization in tourism services and its impact on the sector followed by a discussion of the fiscal incentives extended to the sector. In the next two sections the empirical framework, sources of data and methodology are examined. The results of the main research question, the impact of Jazz and Blues and Sumfest and the conclusion are discussed in the last three sections of the paper.

2. Liberalization in Tourism Services

The service sector, broadly defined to include a diverse collection of non material producing industries such as telecommunication, transportation, retail trade, banking and tourism, has emerged, as an important earner of foreign exchange and a major contributor to GDP for many countries. Between, 1990-1999, the world market for services registered phenomenal growth of 7% per annum (WTO, 1999) while accounting for 63% of world GDP in 1995 (Andrew, 2000). The picture surfacing for the tourism subsector is not dissimilar as its size and growth which are reflected in the industry gross earnings jumped from US$264 billion in 1995 to US$401 billion in 2000 or averaging about 10.4% per annum (Eilat and Einav, 2003).

Unfortunately, the benefits accruing from tourism is unevenly distributed and to a large extent reflects the dominance of the industry by the industrialized world. The extent of this dominance

is mirrored in the distribution of tourism receipts of which developing nations are recipients of only 30.5% of international tourism earnings in 1997 while developed countries received 63.8% (Sharpley, 2003). It is not surprising, therefore, that there has been a growing interest on the part of developed countries to push for the liberalization of trade in services.

In spite of their initial reluctance most Caribbean governments have come to realize the critical role that trade in services, and in particular trade in tourism related services plays in their economic landscape (OAS, 2001). As a consequence, this brought about a change in attitude which significantly increased their level of participation in the 'General Agreement on Trade in Services (GATS)' discussions. There is a prevailing view, however, that the region needs to respond cautiously to full liberalization because the key to effective liberalization is market access and freedom from discretionary regulations (Hayle, 2007). This position is advanced because GATS imposes serious restrictions on the ability of governments to regulate in the national interest (Jules, 2005).

Today, most Caribbean countries have GATS commitments in the ' Tourism and Travel Related Services sector ' which is disaggregated into, the hotel and restaurants, travel and tour operators, tourist guide services and others, subsectors (Velde and Nair, 2005). Within the Caribbean, Jamaica, the Dominican Republic and Suriname are the only countries that offer a full liberalized trade regime in hotel management, restaurant management, hotel and resort construction while no registration/ licensing is required for travel agencies and tour operator services (ACP.org, 2008).

The apparent liberalization of the tourism sector seemed to have provided the impetus needed to stimulate FDI inflows into the Jamaica tourism sector and, in particular, the accommodation subsector. Investment from several international hotel chains including Spain's RIU group, AM resorts, Grupo Pinero and Ibero Star have increased the hotel inventory by more than 5,000 rooms (Caribbean Tourism Conference, 2006). The actual supply of room stock is increased further when investment by local entrepreneurs in hotels, such as, Sandals Whitehouse, Sunset Jamaica Grande and Rooms on the Beach are taken into consideration. Given the rapid growth in the hotel sector it is obvious that the sustainability of the industry will depend on the

occupancy level that the industry is able to achieve in the near future. Higher occupancy rate will be contingent on the ability of the destination to drastically increase stop over arrivals way beyond the 1.7 million mark which was achieved in 2007.

3. Fiscal Incentives

Jamaica, currently, offers a remarkable assortment of tourist accommodations varying from ultra modern all-inclusive resorts, medium and small sized hotels, villas, guest houses and apartments. By far hotels dominate the sector. There are currently 169 hotels comprising 38 "all inclusive", and 131 on European plan. In 2004, the hotel sector supplied approximately 70% of rooms to the tourist market while the remainder is supplied by guest houses, villas and apartments (Jamaica Tourist Board, 2005).

The spectacular growth in hotel rooms, over the last decade, is attributable to several fiscal factors including several Double Taxation Treaties, the Hotel Incentives Act and the Resort Cottages Act, that provided and continues to provide an enabling environment for investment in the hotel subsector. The Jamaican Government currently has in place double taxation treaties with 12 developed countries from which some of the major hotel chains investing in Jamaica originated (PA Consulting Group, 2006). The signing of these treaties provided investors from these jurisdictions significant benefits resulting from favourable income tax treatment.

The Hotel Incentives Act (1990) provides ten years tax relief (income and General Consumption Tax) and duty free concessions on building materials and fixtures. These concessions are granted to, new hotels, existing hotels adding a minimum of ten rooms or thirty percent of the existing number of rooms or existing hotels that plan to undertake extensive structural alterations. Convention hotels with 350 rooms or more rooms are exempted from income tax and import duty for a period ranging from eleven to fifteen years (Jampro, 1990). The resort cottage incentives act was enacted to encourage resort cottage- not less than two furnished bedrooms and attendant facilities by providing exemption from income tax for seven years.

Evidently these fiscal incentives had managed to stimulate investors' interest in the sector. In 2006 and 2007 investment in hotel construction reached J$9.8 and J$10.8 billion, respectively (Planning Institute of Jamaica, 2007). It is projected that new investment into the sector will reach some US$2 billion over the next three years as several new properties will come on stream(US State Department, 2006)

4. Empirical Framework

Modeling hotel occupancy with econometric techniques has received little attention in the tourism literature. Hotel occupancy rates, undoubtedly, are influenced by a variety of economic and non-economic factors. Several researchers, including Dolnicar and Otter ((2003), Weaver and Oh(1993) and Lockyer (2005), identified a range of non economic attributes, such as, past experience, image, hotel rating, location, market segment, needs of travelers, room availability and cleanliness, to varying degrees act as triggers of choices among potential hotel guests.

A comprehensive search of the literature will reveal that hotel occupancy is influenced by a variety of economic factors, as well. This paper will focus on the economic factors only. Generally, the literature advances four generic economic variables, i.e, stopover tourists, real exchange rate, domestic price level (CPI), and average length of stay, that are normally expected to impact on hotel occupancy rates (TSE, 2001).

Following a common practice among tourism researchers the model will, also, incorporate three dummy variables to gauge the effects of adverse weather conditions, in particular Hurricane,(D_1), the Jazz and Blues Festival (D_2), and sumfest(D_3), on occupancy levels. In addition, there is the prevailing view among stakeholders in the industry that crime and especially the consistently high murder rate recorded over the years, had served to keep tourists away from the destination. To complete the model the decision was taken to include the murder rate as one of the explanatory variables.

The following double log regression model is used to explain hotel occupancy, i.e.,

Ln (Occupancy rate) $= C_1 + C_2$ ln (Stop Over) $+ C_3$ ln (length of Stay)$+ C_4$ ln (murder rate)$+ C_5$ ln (D_1- Hurricane) $+ C_6$ (D_2 - Jazz & Blues) $+ C_7$ (Sumfest - D_3) $+ C_8$ (Real Exchange Rate –JA/US)

Where, $C_2 > 0$; $C_3 > 0$; $C_4 < 0$; $C_5 < 0$; $C_6 > 0$; $C_7 > 0$: and $C_8 < 0$

The Real Exchange rate is estimated as, $(CPI_{JA} / CPI_{us}) \times$ Exchange Rate $_{JA/US,}$, and is used as a proxy to capture the impact of price/ cost of tourism at the destination. The base year of the Jamaican and US consumer price indices is set at 2000:1 = 100.

A question arising from the model specification is whether the real exchange rate (between the Jamaican and the US dollar) and the consumer price index should both be included as explanatory variables? Salman(2003) citing Lathiras & Siriopoulous (1998) and Witt & Martin (1987) argued that both variables or either one may be used as proxy(ies) to represent the cost of tourism at the destination. The decision is taken to include only the real exchange rate between the US and Jamaican because the USA has been and continues to be is the main source market of visitors to Jamaica.

5. Data and Estimation Methodology

Quarterly data for the period 2000:1 to 2006:4 or 192 data points were used in the time series model. The quarterly time series on occupancy rates, tourist arrivals and length of stay were sourced from the Jamaica Tourist Board. The remaining macro economic data, except for the Jamaica- US dollar exchange rate which was provided by the Central Bank of Jamaica, were obtained from the International Financial Statistics, an International Monetary Fund publication.

All the variables outlined in the model were transformed to logarithms and the estimation of the equation was carried out using the EVIEWS 6.0 econometric software programme. The first step in the methodology was to check for stationary using the Augmented Dickey-Fuller (ADF)

statistic. The results of these tests indicated that the variables were integrated of the first order I(1) ….. All the terms in the equation were brought to a stationary term I (0) by [Δy and its lags, Δz and its lags and the residuals (e) …..]

The residuals (e) were tested to ensure that there was no evidence of serially correlated errors…

$$Y = \beta_{0+} \beta z + e$$

6. Empirical Findings

Table I list the outcomes of the least squares regression analysis. Overall the results show that the model performs quite satisfactory with some 98% of the total variation in hotel occupancy rates explained by the explanatory variables. All the variables in the model have the expected signs but only three, stopover (C2), and the two seasonal dummies, Jazz & Blues (C6) and Sumfest (C7) are statistically significant at the 0.0000%, 0,0008% and 0.0223%, respectively, thus, suggesting that hotel occupancy is not only influenced by the number of visitors arriving at the destination but by events, as well. Evidently, the result for the weather dummy seems to suggest that hotel occupancy was not very sensitive to adverse weather conditions, such as hurricane.

Table I

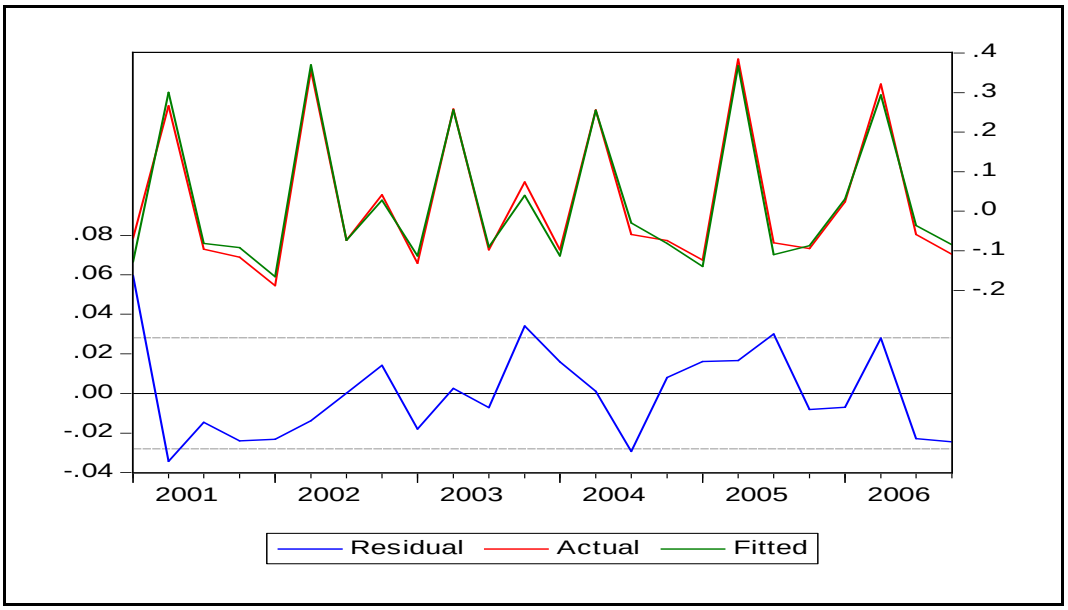
Dependent Variable: HOTEL_OCCUPANCY(-1)
Method: Least Squares
Date: 06/23/08 Time: 11:06
Sample (adjusted): 2001Q1 2006Q4
Included observations: 192 after adjustments
(HOTEL_OCCUPANCY)=C(1)+C(2)*(STOPOVER)+C(3)
*(LENGTH_OF_STAY)+

C(4)*(MURDER)+C(5)*(D_HURRICANE) +C(6)*(D_JAZZ)+C(7)*(D_SUMFES
T
+C(8)*(E_JA_US)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-0.059309	0.010758	-5.513038	0.0000
C(2)	0.786431	0.095353	8.247622	0.0000
C(3)	0.292682	0.220345	1.328294	0.2027
C(4)	-0.039209	0.036116	-1.085628	0.2937
C(5)	-0.033389	0.024768	-1.348081	0.1964
C(6)	0.187157	0.045625	4.102067	0.0008
C(7)	0.111453	0.044055	2.529844	0.0223
C(8)	-0.142622	0.275957	-0.516827	0.6123

R-squared	0.982859	Mean dependent var	0.021534
Adjusted R-squared	0.975360	S.D. dependent var	0.178930
S.E. of regression	0.028087	Akaike info criterion	-4.045813
Sum squared resid	0.012622	Schwarz criterion	-3.653129
Log likelihood	56.54976	Hannan-Quinn criter.	-3.941634
F-statistic	131.0609	Durbin-Watson stat	1.696830
Prob(F-statistic)	0.000000		

Actual and Forecasted results



The result of the real exchange rate, a proxy that represents relative cost of tourism at the destination, does not seem to exert any significant negative influences on occupancy levels. It is of interest that the crime and length of stay variables have the expected signs but their impacts on the demand for hotel rooms are inconsequential, as well.

At a very broad level the elasticity for each of the explanatory variable is very small. A 1% increase in stopover visitors, average length of stay, Jazz & Blues festival and Sumfest will generate a 0.78%, 0.29%, 0.19% and 0.11% increase in hotel occupancy, respectively, while a 1% increase in the crime rate, exchange rate, adverse weather will lead to a contraction in occupancy rate by 0.04%, 0.14%, and 0.03%, respectively. These results clearly indicate that the occupancy rate is inelastic across all explanatory variables.

Impact of Jazz and Blues and Sumfest

Given that Jazz & Blues and Sumfest have been identified as significant contributors to hotel occupancy rates the study now seeks to establish the exact mechanism through which these events stimulate the demand for hotel rooms. Or, put differently, do these events influence the flow of international inbound tourists to the destination or are they mainly for domestic

consumption. In an effort to answer this question the study uses a double log origin-destination model as set out below. The equation, in addition to the Jazz & Blues and Sumfest dummies, incorporates a set of three explanatory variables which are used extensively in the literature to explain international tourism demand (Lim & McAleer (2001); Kulendran (1966).

Ln (Stopover) = C(1) + C(2) Ln (PER CAPITA_ US) + (C3) Ln (Length of Stay) + (C4) Ln (D_ Jazz & Blues) + (C5) Ln (D _ Sumfest) + (C6) Ln (CPI _ JA)

Where the a priori expectations pertaining to the regression coefficients are: C2 > 0, C3 > 0; C4 > 0; C5 > 0 and C6 < 0

The results of the regression equation are displayed in table II. The adjusted R- squared value of 0.76% indicates that the explanatory variables represent a reasonably good fit as a high percentage of the variation in the independent variable is explained. In addition, all the coefficients in model have the expected signs. The results support the view that stopover visitors to the destination has a significant and positive relationship with US GDP Per Capita, Length of Stay and Jazz & Blues Festival variables at the 4%, 5% and 0% levels, respectively. The estimated coefficients for Sumfest and the Consumer Price Index, however, are statistically insignificant. Further, the results suggest that stopover is elastic with regards to US GDP per Capita and the Consumer Price Index while inelastic with respect to Length of Stay, Jazz & Blues and Sumfest.

Table II

Dependent Variable: STOPOVER
Method: Least Squares
Date: 06/25/08 Time: 12:52
Sample (adjusted): 2000Q3 2006Q4
Included observations: 124 after adjustments
(STOPOVER)=C(1)+C(2)*(GDP_US)+C(3)*(LENGTH_OF_STAY)
+C(4)*(D_JAZZ)+C(5)*(D_SUMFEST)+C(6)*(CPI_JA)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-0.073628	0.030910	-2.381978	0.0273
C(2)	5.401225	2.470742	2.186074	0.0409
C(3)	0.202407	0.097913	2.067210	0.0519
C(4)	0.182927	0.032436	5.639581	0.0000
C(5)	0.004304	0.027690	0.155443	0.8780
C(6)	-1.145709	0.875431	-1.308738	0.2055

R-squared	0.804875	Mean dependent var	0.012303
Adjusted R-squared	0.756094	S.D. dependent var	0.115057
S.E. of regression	0.056823	Akaike info criterion	-2.698573
Sum squared resid	0.064577	Schwarz criterion	-2.408243
Log likelihood	41.08145	Hannan-Quinn criter.	-2.614969
F-statistic	16.49967	Durbin-Watson stat	2.080703
Prob(F-statistic)	0.000002		

Stopover ‘ residuals (2001 -2006)

7. Conclusion

Tourism is an important industry to the Jamaican economy. The ability of the industry to continue its contribution to the Jamaican economy is largely dependent on the capacity of the hotel subsector to improve its occupancy level. The study using a double log single equation model identifies, the number of stopover visitors, Jazz and Blues and Sumfest as key determinants of hotel occupancy levels in Jamaica. Other socio-economic variables, such as length of stay, murder rate and the real exchange between the Jamaican and US currencies and the Consumer Price Index were found to be insignificant.

The apparent non-responsiveness of hotel occupancy to critical economic factors combined with the small values of the elasticity across variables seems to suggest that Jamaica's tourism is at the mature stage of the industry product life cycle. A significant increase in room stock, in a maturing industry, points to the need for stopover arrivals to increase significantly above existing level if current occupancy rate is to be maintained. To achieve this objective not only must the product offering be diversified but new source markets must be tapped into with great urgency. Failure to do so will precipitate a possible price war among major hotel chains to the detriment of the industry.

In spite of the differences in performance the role of tourism related events, such as Jazz & Blues and Sumfest, are critical to the tourism equation. Of the two events, the study shows that Jazz and Blues is a superior tourist attraction. This outcome is supported by survey results published by the Jamaica Tourist Board for both events in 2007. The data showed that Sumfest attracted some 5000 international visitors to the island while generating approximately US$5 million in revenue. In contrast it was estimated that some 11,300 foreign visitors attended Jazz and Blues and spent an estimated US$11.7 million (Jamaica Tourist Board, 2007). Evidently, there is the need to reposition Sumfest if it to emerge as a major tourist attraction.

Given the strategic importance of tourism to the Jamaican economy the ultimate objective must be to develop an industry that can attract larger inflows of stopover arrivals. To achieve this objective one of the strategies tourism planners may adopt is to broaden the industry to include

more cultural activities and events (defined broadly to include festivals, events, historic sites, natural assets, architecture, heritage sites, etc.,) as part of the industry's product offerings.

Although the consumption of cultural goods and services is not a new occurrence, Mcdonald (1999) argued that the extent of cultural tourism consumption and the many forms of cultures being consumed today, have transformed the industry from a tangential attraction into a prime catalyst for the modern travel experience. As suggested by Leidner (2004) this trend has emerged because more and more tourists are opting for a mixture of culture and leisure during a visit to a particular destination. Published data from a survey conducted by the European Commission showed that 30% of European destinations are selected because of the availability of heritage sites while the ratio jumped to 45-50% when festivals and significant cultural events are included (Klein, 2001) In 2002, the American Travel Association estimated that some 81% or 118 million of American travellers visited historic and cultural sites and spent, on average, US$623 per trip (The Historic/Cultural Traveller. 2003).

The cultural sector is the fastest growing segment of the industry with an estimated economic value of approximately 7% of the world gross domestic product (Inter- American Development Bank, 2008). For the period, 1994-2002, global trade in core cultural goods and services jumped from US$38b to US$60b (Chaitoo, 2007). In spite of the size of the cultural market and the apparent comparative advantage enjoyed by Jamaica, it remains a marginal player in the trading of cultural products (UNCTAD, 2004).

The expansion of the industry to include cultural expression can create a new industrial framework that would promote the production and consumption of a broader range of local inputs, including social and institutional capital. But as Boxill (2000) and Hayle (2000) argue, for these cultural articulations to succeed it will be necessary for policy makers to create the economic and social spaces necessary to stimulate and facilitate local communities to service the value chain of these market niches from domestic resources. This approach to tourism development will not only foster the creation of economic linkages but will, also, produce a greater multiplier effect on the economies of the local communities. Such an approach will not

only ensure a broader distribution of tourism benefits but will establish the organic link needed to connect the people with the industry (Boxill, 2004).

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