

TREND OF FOREIGN EXCHANGE EARNINGS BY THE VISITORS IN BANGLADESH

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ABSTRACT

This study was an attempt to know the trend of foreign exchange earnings by the visitors in Bangladesh. To estimate this trend, secondary data was used for the period 1986-2008. Different statistical techniques and trend models were used to perform the analysis. An upward trend of exchange earning has been observed over the study period. The semi-log trend model was found to be the best fitted model for the foreign exchange earnings. The results showed significantly upward trend with a growth rate 18.05 percent per year. Thus it is gratifying that the tourism industry of the country is expanding day by day and to increase the growth rate government and non-government organization need to take proper action for better economy.

Key words: Visitors, Trend, Foreign exchange, Tourism industry, Economy

INTRODUCTION

Tourism has become a very important sector in the developing countries. Its growth affects not only linked to the activities of the tourism industry but also other sectors. Bangladesh is a developing country in Asia, holding high potentiality for tourism. Bangladesh Parjatan Corporation (BPC) plays an important role for the development of this sector. For a long time, Bangladesh has been an attractive destination for tourists. But at present, its position is not significant in terms of the international tourism market. In the last few

decades, in particular, tourism has been developed by their integrated tourism planning (Buhalis, 1999; Butler, 2002; Vanhove, 2005).

In many countries, tourism is an industry for earnings revenues and foreign exchange (Hossain, 2007). Many businesses that grow concurrently with the development of tourism include airlines, shipping, hotels and restaurants, finance companies, tour operators, travel agents, car rental firms, caterers and retail establishments and together, they contribute significantly to the overall development of a country's economy and to its cultural diversification and adaptation (Islam, 2009). Tourism in its modern sense is a relatively recent phenomenon, and it has been begun in the present Bangladesh area only during the 1960s. Tourists from abroad came to see and enjoy the beaches, the scenic beauty of the landscape covered with lavish greens and the web of rivers, tribal culture, religious rituals, historical places, forests, wild life and hill resorts (Hasan, 2006). The private sector involvement in tourism in Bangladesh is still not adequate. However, the Bangladesh government has been taken remedial measures to encourage the private sector to play a positive role in the development and diversification of tourist facilities to promote domestic and international tourism in the country (Rahman, 2004). Tour operators have a significant role to play in tourism business. Over 40 private tour operators have already been engaged in tourism marketing in Bangladesh. Some of them conduct only domestic (inbound) tours while others offer both domestic and outbound tours (Bangladesh Monitor, 2007). Thirty two such private tour operators are members of an association named "Tours Operator Association of Bangladesh (TOAB)", formed to carry out their activities more efficiently, to lobby the BPC and the government for the realization of justified rights (Siddiqi, 2006), and to promote the country's tourism together. The natural beauty and panoramic views of Bangladesh is recognized worldwide to attract tourists. But due to lack of effective initiatives, proper management plan, quick and sincere effort of government this sector is not expanding up to the mark (Akther and Shelina, 2001). To take a proper decision for the betterment of this sector the level and nature of existing growth of foreign visitors should be addressed rigorously. So far our knowledge no study has been performed to measure the trend of foreign exchange earnings by the visitors in Bangladesh. Therefore, we aim to study the trend of foreign exchange earnings by the visitors in Bangladesh.

MATERIALS AND METHODS

Time series data on foreign exchange earning for the period (1986 – 2008) were collected from the publication of Bangladesh Parjatan Corporation (BPC). To carry out the objective of the study different statistical measures and trend models were used to analyze the data.

METHODS OF DETERMINING TREND

To search a suitable model of foreign exchange earnings the following trend models have been considered.

(a) Straight-line trend:
$$Y_t = \beta_0 + \beta_1 t$$

(b) Semi-log Trend/growth trend:
$$\log_e Y_t = \beta_0 + \beta_1 t$$

- (c) Exponential trend: $Y_t = \beta_0 \cdot e^{\beta_1 t}$
- (d) Semi-log parabolic Trend: $\log_e Y_t = \beta_0 + \beta_1 t + \beta_2 t^2$
- (e) Logarithmic trend: $Y_t = \beta_0 + \beta_1 \ln t$
- (f) Parabolic Trend/quadratic trend: $Y_t = \beta_0 + \beta_1 t + \beta_2 t^2$

Where, Y_t is the amount of foreign exchange earning by visitor in Bangladesh at time t (1986-2008).

These models are fitted separately to the annual data using regression analysis methodology. From these fitted models the most appropriate one is selected according to the following rule:

R^2 - Criteria: It is known that one of the measures of goodness of fit of a regression model is R^2 , which, is defined as:

$$R^2 = \frac{RSS}{TSS} = 1 - \frac{ESS}{TSS}$$

R^2 thus defined, of necessity lies between 0 and 1. The closer it is to 1, the better is the fit. But there are problems with R^2 . First, it measures in-sample goodness of fit in the sense of how close an estimated Y value is to its actual value in the given sample. There is no guarantee that it will forecast well out of sample observations. Second, in comparing two or more R^2 , the dependent variable, must be the same. Third, the more importantly, an R^2 can be increased when more explanatory variables are added to the model. Therefore, there is very temptation to play the game of "maximizing the R^2 " by simply adding more variables to the model. Of course, adding more variables to the model may increase R^2 but it may also increase the variance of forecast error.

Adjusted R^2 Criteria: Each additional regressor variable added to the model increases R^2 . Thus, since R^2 can be made larger simply by adding more predictor variables to the model, a modification of R^2 has been proposed. This adjusted R^2 does not automatically increase when new predictor variables are added to the model. In fact, the adjusted R^2 may actually decrease, because the decrease in ESS may be more than offset by the corresponding decrease in the error degrees of freedom.

$$\bar{R}^2 = 1 - \frac{ESS/(n-k)}{TSS/(n-1)}$$

Here, $\bar{R}^2 \leq R^2$, showing how the adjusted R^2 penalizes for adding more regressors. For comparative purposes, therefore, \bar{R}^2 is a better measure than R^2 .

RATE OF GROWTH OF EXCHANGE EARNINGS:

An exponential model (Jeromi and Ramanathan, 1993) was used to estimate growth rates for different segments of continuous time-series based on prior differentiation of rule-

periods. The rate of growth implicit in the semi-log trend is derived by the solving the following equation.

$$\log_e (1 + r) = \beta_1$$

Where, β_1 is the slope of the semi-log trend equation and r is the annual rate of growth.

RESULTS AND DISCUSSION

Trend in Foreign exchange earning by visitors

The trend models for the exchange earning in Bangladesh during the Year 1986-2008 was shown in Table-1.

Table 1: Trend models for the exchange earnings by the visitors

Types of Models	Estimated Coefficients			R ²	\bar{R}^2	F- Value
	β_0	β_1	β_2			
Linear	-1006.67 (251.757)	267.728* (18.361)		0.910	0.906	231.72*
Semi-log/growth Trend	5.173* (0.150)	0.166* (0.011)		0.917	0.913	231.03*
Logarithmic Trend	-1902.97 (726.85)	1831.31* (304.769)		0.632	0.615	36.11*
Semi-Log Parabolic Trend	4.965* (0.237)	0.216* (0.045)	-0.002 (0.002)	0.922	0.914	117.64*
Parabolic Trend (Quadratic Trend)	157.063 (235.417)	-11.569 (45.192)	11.637* (1.828)	0.970	0.967	326.59*

*Significant at 1% level.

Results showed that the value of \bar{R}^2 is the highest for parabolic trend model but the estimated co-efficient β_1 is not significant at 5% level. The second highest \bar{R}^2 value is 0.914 for the semi log parabolic trend model but β_2 is not significant at 5% level. Fulfilling all the criteria, the semi-log trend model appeared to be the most appropriate for the trend pattern of the series. Therefore the semi-trend model for the exchange earnings from the foreign tourist arrived in Bangladesh is

$$\log_e Y_t = 5.173 + 0.166t$$

Where, Y_t is the amount of exchange earnings (in million taka) in Bangladesh and t is time (in year).

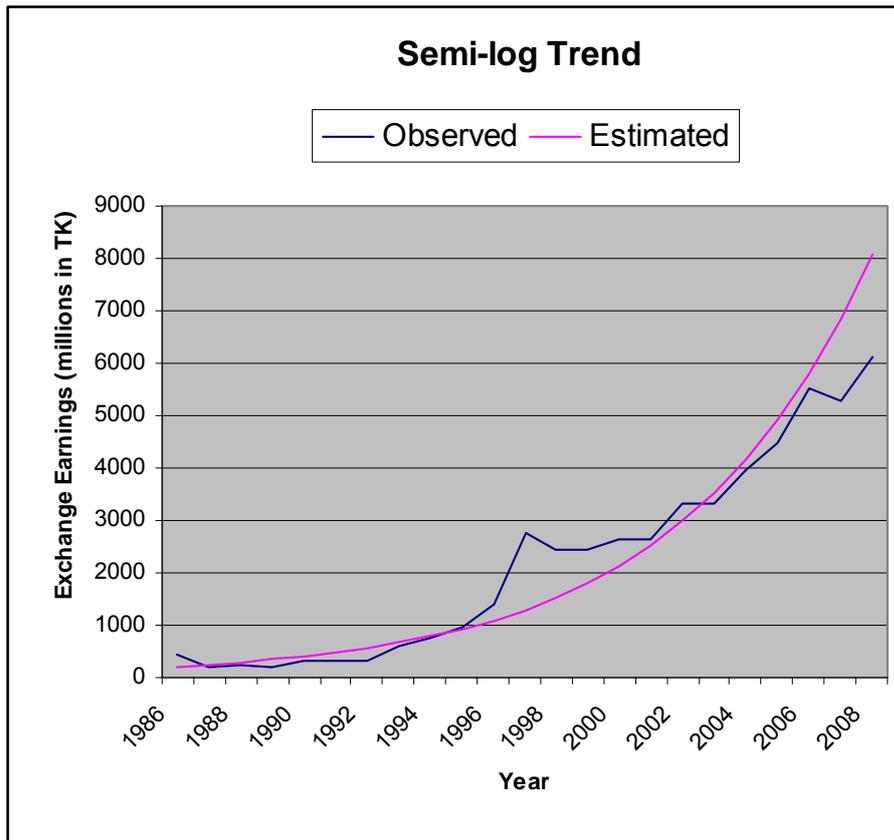


Figure 1: Semi log trend model of the exchange earnings by the visitors

From the above graph it is observed that the foreign exchange earning shows an upward trend during the study period. It is also observed that at the year 1986 the trend value was only 208.38 (millions TK) but after 23 years at the year 2008 the trend value is remarkable high and it is 8097.54 (millions TK). The above results of regression analysis clearly revealed that over the past 23 years the amount of exchange earnings in Bangladesh has trended up significantly.

Growth Rate of foreign exchange earnings

A study has been conducted to analyze the tourist profile and tourist expenditure pattern in Bangladesh between the period 1972-1990 by United Nations on 1993 (United Nations, 1993). Applying the descriptive analytical tools they found that international tourist arrivals in Bangladesh increased in absolute terms from 34,580 in 1972 to 115,369 in 1990 and the trend has fluctuated widely, recording even negative growth rates in some years. Another study has also been done to know the trend of foreign visitors in Bangladesh during the period 1976-2008 (Taj Uddin, 2012). They found that semi-log trend has been performed better with growth rate 5.97 percent per year. However, none study has been conducted to estimate the growth rate of foreign exchange earnings based on trend equations or models. Therefore, we tried to estimate the growth rate based on trend equations. We found that the rate of growth based on the semi-log trend (appropriate trend in this study) is 0.1805, indicated that the growth rate of the amount of exchange earnings from the foreign tourist arriving in Bangladesh between 1986 and 2008 had been 18.05 percent per year.

CONCLUSION

This study has investigated using the time series data to achieve its objective. The several trend models were used and found that the semi-log trend model was more suitable for foreign exchange earnings of Bangladesh. For the time period 1986-2008 it is found that the foreign exchange earning is significantly upward trend with a growth rate of 18.05 percent per year. Therefore, it can be recommended that the government, semi government and NGO's should take sufficient initiative to maintain this growth and further improvement of this sector for better economic development of the country. It is hopeful that the findings of this research may be considered by the government and private policy makers while formulating both short and long term policies for the development of tourism industry as well as the economy of Bangladesh.

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