Does Tourism Really Matter for Economic Growth? Evidence from Nepal

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Abstract

Tourism seems to be widely recognized as the one among a few sectors in Nepal which can be an engine of economic growth. However, there are few empirical studies about Nepalese tourism. This paper, thus, attempts to examine the impact of tourism and other related macroeconomic variables on the economic growth of Nepal by deriving tourism income multiplier from the Keynesian macroeconomic model. The three stage least square and seemingly unrelated regressions are the techniques employed for estimating the value of multiplier. The estimated value of multiplier based on regression results over thirty six year period from 1975 to 2010 is estimated at 1.21. In addition, Granger causality tests are used to confirm the direction of the impact of one variable on another variable, which reveals that there exists bi-directional impact in the case of tourism receipts and GDP. In addition, tourism receipts are found to have bi-directional relationship with some other variables such as GNI, exports, private consumption, imports and so on. Thus, tourism multiplier and the Granger causality tests show that tourism is important component for economic growth in Nepal.

JEL Classification: C13, L83, O47

Key words: Tourism receipts, tourism income multiplier, three stage least square

I. INTRODUCTION

Tourism is one of the biggest industries in the world which seems to have played a vital role in the process of the economic development of the several countries. Evidence from the past studies for other countries revealed that tourism can contribute to the economic growth and development of a country if it is properly planned and managed. Its contribution to the structural change of the economy from traditional farming to service is thus widely recognized. Tourism's help on solving the adverse balance of payments is a recent one. It is imperative that benefits are generated from tourism but its social and environmental costs including opportunity costs are also high on the other side. So, there has been growing awareness toward reducing the social costs accruing from tourism so that social benefits outweigh the social costs. It is understandable that travelling by a non-resident does not in itself result in benefits to local economies. It is the purchase of goods and services by the visitors which provide benefits to the local economy. Therefore, the use and supply of local commodities with good quality and hygiene in catering tourists is always more desirable

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than the supply of imported goods. The supply of locally produced goods has backward and forward linkages to other sectors of the economy that generate more income and employment, both direct and indirect. Tourists purchase transport services such as those from taxis, buses, railways, and aeroplanes and other transport services, and pay for entertainments, amenities such as hotels, resorts, bars and restaurants, sales of handicrafts and souvenirs, and so on. These expenditures by tourists become, at least in part, the incomes of local people leading to an increase in their incomes. English views, thus, that one person's enjoyment becomes the livelihood for others (English, 1986). This increase in income will make an upward shift in the demand curve of local people for goods such as food and clothing, because of the high income elasticity of demand for goods in a poor society such as Nepalese.

Nepal with its enormous potentiality for the tourism development has been effortful to develop the tourism sector. In this context, the government of Nepal itself invested for the tourism infrastructure development and institutional buildings and encouraged private sector to invest in this sector by ways of various policy intervention. Tourism not only contributes to the economic growth through multiplier effects but also supplies the foreign currency required for major investment, which is used to import much needed modern technology, machines/equipments and management/skills. The government, thus, has taken initiation and a lead role in investing in the development of tourism facilities and infrastructures which can be used by the other sectors of the economy. Government of Nepal has also received foreign aid from the Asian Development Bank for the up-gradation of Tribhuvan international airport and other tourism facilities and infrastructures. The high requirements of capital for the development of tourism infrastructures/facilities force the government in the destination to seek foreign capital. Some of the standard hotels and tourist enterprises are run by foreigners under foreign direct private investment. There are altogether 96 joint venture tourism enterprises currently operating in Nepal with Rs 6637.90 million project costs by mid April, 2009(FNICC, 2009: 61) and additional 113 tourism projects are under construction.

Constrained by underdevelopment of infrastructures, unskilled labour, traditional technology, energy shortage and small size of domestic market, Nepal's industrial products always lacked competitiveness in the international markets. For this reason, only a few entrepreneurs ventured manufacturing products and alternatively, unlike in other developing countries, a fair amount of private capital has been invested since the beginning. Bank and financial institutions have also been forced to invest in tourism by the lack of other big projects from the manufacturing, infrastructure and other sectors. Nepal Industrial Development Corporation (NIDC) had advanced a huge amount of long term loan (Rs 445.88 million in 2007) to the hotel sector from the very beginning, followed by short term loans by Nepal Bank Ltd and Nepal Rastria Banijya Bank.

Recently "Nepal Visit Year 2011" was observed as a joint initiation of the government and private sector. Tourism today in Nepal is widely viewed as one among the few that have greater development potentialities. In this backdrop, this paper aims to examine the relationship between tourism and economic growth in Nepal.

II. TOURISM RECEIPTS

Tourism receipts[1] today are viewed as major contributor in maintaining the balance of payments in developing countries such as Nepal. Tourism receipts in any country, primarily depends on its demand in the world tourism market. The demand for Nepalese tourism is governed by words of mouth, income, own price, and cross price variables in the long run, and words of mouth and instabilities in the short run (Paudyal, 1993, 2012). Tourism receipts not only one of the earners of foreign exchanges but also the contributor to the government exchequer. Tourism thus can have a major effect on a country's balance of payments, especially in a country like Nepal.

Tourism, thus, had increasingly contributed in the past to the foreign exchange earnings in Nepal, and thereby made substantial contribution to correct the adverse balance of payments. However, it has taken a different course in later years and the tourism contribution to total foreign exchange earnings in terms of percentage share in 2009/10 is still at the level of 2000/01. As a consequence, the tourism contribution to balance of payments via total foreign exchange earnings did not increase in the later years despite continued increments in tourism receipts. Nepal's huge trade deficit with India and overseas countries can be corrected by attracting more visitors and thereby make the overall balance of payments more favourable.

Table 1: Changing pattern of major contributors to foreign exchange earning
(in Rs 10 millions)

Fiscal years	Tourism receipts	Worker's remittance	Exports	Foreign exchange (forex)	Tourism receipts as a % forex	Workers' remittance as a % of forex	Exports as a % of forex
2000/01	1171.7	4721.61	6978.85	16663.80	7.03	28.33	41.88
2001/02	865.43	4753.63	5798.35	15164.90	5.71	31.35	38.24
2002/03	1174.77	5420.33	5076.07	15504.50	7.58	34.96	32.74
2003/04	1814.74	5858.76	5522.83	17900.60	10.14	32.73	30.85
2004/05	1046.38	6554.12	5995.61	18726.80	5.59	35.00	32.02
2005/06	955.58	9768.85	6148.24	21881.40	4.37	44.64	28.10
2006/07	1012.53	10014.48	6148.84	22676.40	4.47	44.16	27.12
2007/08	1865.31	14268.27	6197.11	28967.00	6.44	49.26	21.39
2008/09	2795.98	20969.85	6990.68	38019.80	7.35	55.16	18.39
2009/10	2813.86	23172.53	6317.75	40206.90	7.00	57.63	15.71

Source: HMG/N, Economic Survey, fiscal year 2010

[1] Tourism receipts are expenditures by international inbound visitors, including payments to national carriers for international transport.

Table 1 shows the changing pattern of major contributors of foreign exchange earnings. Workers' remittances (58%), merchandise exports (16%) and tourism receipts(7%) are the major sources of the foreign exchange earnings in the country which together made about 81% of total foreign exchange earnings in 2009/10. Tourism's contribution to the total foreign exchange earnings has remained almost at the same level in 2009/10 compared to 2000/01. But it is highly fluctuating over the years between the two points of time mentioned. Its share of foreign exchange shot up to 10% in 2003/04 but fell to 4% by 2005/06, which, compared to that of 1980/81-1984/85 (28.6%), was a big fall. However, some improvements in the percentage share of tourism receipts in foreign exchange earnings were witnessed in 2007/08, 2008/09 and 2009/10 (6.4%, 7.4% and 7.0% respectively), and as a consequence, the average share of tourism receipts for 2005/06-2009/10 came to 6.1% . However, tourism maintained third place after workers' remittances and merchandised exports over the period.

Table 2: Share of tourism receipts in foreign exchange earnings

Year	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
Current account balance	1816	1161	1460	1154	1422	-90	2368	4144	-2814
Trade balance	-7029	-7768	-8576	-11006	-12895	-15599	-20932	-30352	-20297
Exports	5798	5076	5523	5996	6148	6149	6197	6991	6318
Service net	394	705	907	-203	-682	-838	-1109	-1048	-1639
Service receipts	2351	2652	3432	2600	2647	3208	4224	5283	5112
Tourist expenditures	865	1175	1815	1046	956	1013	1865	2796	2814
Merchandise exports and services	8149	7728	8954	8596	8795	9357	10421	12274	11430
Balance of goods & services	-4942	-6324	-6861	-8780	-11688	-13733	-16708	-21980	-31990
Tourist expenditure/exports	15	23	33	17	16	16	30	40	45
Tourist expenditure/services	37	44	53	40	36	32	44	53	55
Tourist expenditure /goods + services	11	15	20	12	11	11	18	23	25
Tourist expenditure /trade balance	-12	-15	-21	-10	-7	-6	-9	-9	-14

Source: Author's calculation from MOF, GoN, Economic Survey, FY 2010/11, vol. II.

Table 2 presents that tourism is important in the current account in the balance of payments of the country since it contributed 45% of the merchandise exports, 55% of the service exports and 25% of the goods and service exports. So tourism so far one of the major contributors of the foreign exchange earnings in the country. It is interesting that tourism receipts comprises over the half of the service exports in the balance of payments of the country. Tourism expenditures are used for financing trade deficit in several countries including Nepal. The widening gap between exports and imports has been bridged by the tourism expenditures and remittances in the country. The tourist expenditure or receipts as a ratio of trade deficit accounted for 14% in 2009/10 for Nepal, which accounted for 40% in

1980 for Thailand (Harrison, 2001:196). So tourism receipts can contribute to various areas of an economy.

III. DATA USED AND METHODOLOGY

This paper used the time series data, from 1975 to 2010, for the quantitative analysis extracted from the Economic Survey, 2011 published by the government of Nepal. The following macro variables of the Nepalese economy are used for the regression analysis: gross national incomes, private consumption, private investment, total imports, total exports, government expenditure, direct taxes and tourism receipts.[2]

Tourism multiplier is an important tool to measure impact of tourism. Input-output framework is widely used for calculation of tourism multiplier. It is not possible here to go for such a broad based input output framework and thus, we attempted to calculate the value of the multiplier with the help of the Keynesian macroeconomic model. Various formulae to estimate the multiplier are used by the writers; a popular one of these is as follows:

Tm = (1-TPI) ⁄(MPS + MPI), where Tm=tourism multiplier, TPI = marginal propensity to imports for touristic goods, MPS=marginal propensity to save and MPI = marginal propensity to import. The tourism multiplier can be derived from the popular Keynesian model of income and employment as follows:

$$C = c_0 + c_1 Yd + € \quad \text{(i)}$$

$$I = i_0 + i_1 Y + € \quad \text{(ii)}$$

$$M = m_0 + m_1 Y + € \quad \text{(iii)}$$

$$T = t_0 + t_1 Y + € \quad \text{(iv)}$$

$$Yd = Y - T \quad \text{(v)}$$

$$Y = C + I + G + X + R_t - M \quad \text{(vi)}$$

Where C = consumption, I = investment, M= imports, X = exports, Yd = disposable income, T=taxes, Rt = tourism receipts. In these equations C, I, M, T are the endogenous variables and G, X and Rt are exogenous variables. Equations (v) and (vi) are identities defined by economic theory. Eq. (i) shows that consumption (C) is the function of marginal propensity to consume (c_1) and disposable income (Yd) whereas Eq. (ii) that is, investment function says investment (I) depends on marginal propensity to invest (i_1) and income (Y). Likewise, Eq. (iii) represents that imports (M) are the function of the marginal propensity to import

[2] As time series of macroeconomic variables were used in this paper for the analysis, unit root tests were carried out. Almost all series were found to be non-stationary at level and found to be stationary at first difference. The regression results passed all tests such as normality, Wald coefficient tests and so on in the majority cases.

(m1) and income (Y). Eq (iv) shows that taxes (T) depend on income(Y) and tax rate (t_1) where c_0, i_0, m_0 and t_0 are autonomous components of consumption, investment, imports and taxes respectively. €s is the error terms in the equations. In the system of equations, C, I, M and T are endogenous variables and G, X and Rt are the exogenous variables. Substitution from equation (i) to (vi) gives the following equation:

$$Y = \frac{A_0 + G + X + Rt + \varepsilon}{1 - c_1(1 - t_1) - i_1 + m_1} \qquad \text{(vii)}$$

Now, one can derive the tourism multiplier as follows:

$$\frac{\partial Y}{\partial \mathrm{Rt}} = \frac{1}{1 - c_1(1 - t_1) - i_1 + m_1} = \frac{1}{1 - c_1 + c_1 t_1 - i_1 + m_1}$$

The marginal propensities of consumption, investment, import and tax are defined as following:

$MPC = \delta C/\delta Y = c_1$ $\quad MPI = \delta I/\delta Y = i_1$ $\quad MPM = \delta M/\delta Y = m_1$
and $MPT = \delta T/\delta Y = t_1$

Marginal propensities can be calculated by the regression analysis of (i) to (iv).
Given the above Keynesian model, we used the technique of Three Stage Least Square Method[3] and Seemingly Unrelated Regression[4] for estimating tourism income multiplier for Nepal. Another common method widely used by the researchers for the impact analysis is the Granger causality test. We also used this technique for the analysis of the impact of tourism to the Nepalese economy in conjunction with multiplier.

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3 Three stage least square is a combination of two stage least squares and seemingly unrelated regression. It provides consistent estimates for linear regression models with explanatory variables correlated with the error term. It also extends ordinary least squares analysis to estimate system of linear equations with correlated error terms.

4 In a system of equations which consist of a set of endogenous variables considered as a group, error terms of two or more equations are correlated; in such case more efficient estimates can be obtained using seemingly unrelated method and other more sophisticated estimation techniques. (Zellner, 1062: 348-368; Ramanathan,1989:498; Chow, 1983:81, and Pinydick, 1991:298-308). SUR is appropriate when all the right-hand side regressors are assumed to be exogenous, and the errors are heteroskedastic and contemporaneously correlated.(Eviews5:699)

IV. CONCEPT OF TOURISM MULTIPLIER

As foresaid, tourism demand for goods and services can have much implication in a country such as Nepal. In the case of Nepal and other least developed countries, the increase in demand is satisfied by importing goods and services from abroad, benefitting local economy to a lesser degree. A big chunk of earnings from tourism are remitted abroad for importing goods. In such cases, net earnings of foreign currency may be very small compared to gross earnings. It is always desirable that an increase in demand for goods and services by tourists is met by domestic goods as far as possible. The larger the use of domestic goods in catering to the tourists, the greater is the contribution to the economy since it helps to retain the foreign exchange earnings in the economy. The supply of goods and services through imports from abroad is a leakage in the process of generating income. The higher the leakage such as imports the lower is the size of the multiplier and so obviously the process of increasing income becomes weaker. However, there is always value added in the import goods but they do not have the strong backward and forward linkages which are considered to be fundamental for making a greater contribution of tourism to the local economy.

The experience of Europe, North America and Japan indicates that tourism and economic developments are closely linked (Harrison, 2001:33). Tourism contributes to the growth of GDP and helps earn foreign exchange, both of which are directly or indirectly linked to employment generation, balance of payments, and poverty alleviation in the country. Tourism is further beneficial since it is regarded as smokeless labour intensive in nature. It is largely concerned with small and medium enterprises which are suitable for a small country like ours and forms the basis for the development of a market economy. It does not require a special type of infrastructure but utilizes the same infrastructure which is common to other sectors as well that are widely used by local people. Moreover, tourism is an export industry which is the least affected by the land-lockedness of the country, and does not generate terms of trade which remain always in favour of the developed countries and is not subject to packaging and transport costs.

Nonetheless, evidence from the experiences of Latin American, Caribbean and other countries shows that a significant contribution of the tourism industry can only be realized at the optimal level if the subsequent planning can reduce the disadvantages of international tourism by means of counter measures and efficient management of resources so as to meet the demands of tourism on a sustainable basis. In this context, it is worth quoting Lundberg (1995:44):

> *If the area being considered for tourism development has high unemployment, the virtues of tourism are more apparent. Tourism income, though perhaps less than from other sources, may be the best possible choice under existing conditions, serving to produce tax revenues, reduce unemployment, and enhance the quality of life for many residents. The opportunity cost of tourism under these circumstances is small or may not exist.*

Tourism impact on an economy is widely analyzed by multiplier effects, based on the input-output analysis. It determines the benefit to the economy for every unit of currency spent by

the tourist. Every unit of currency spent by the tourist creates primary and secondary effects. The primary (direct) expenditures of tourists create secondary effects of the multiplier such as indirect and induced expenditures. Direct effects are the production changes due to the immediate effects of the changes in tourism expenditures. For instance, an increase in the number of the tourist arrivals or in the length of stay in hotels leads to increased sales of hotels and thereby a rise in receipts of the hotels from tourists and payments into the wages, salaries, taxes and so on. In other words, an increase in the sales of the tourism industry is the direct effect of the tourism, which in turn resulted in the increase in incomes, jobs, wages, interest, rents and profits within the industry. While indirect effects of tourism are the increase in the sale in other backward linked industries such as suppliers of tourism goods and services.

Direct effect combined with indirect and induced effects are called the total effects of multipliers. In other words, the tourism multiplier implies that tourism spending by the visitors not only brings new dollars in a local economy, but that as new dollars are circulated their effect is multiplied (Lundberg, 1995: 137). So new money stimulates the economy not once but several times, and such an effect on the economy is popularly called a multiplier. So to capture all these economic impulses a well thought macroeconomic input-output model which includes inter-sectors backward and forward linkage in the economy is necessary.

Tourism contribution to gross domestic product is often measured with the help of satellite accounting but such an accounting system has yet to be developed in the country. So, the contribution is simply calculated as the ratio of tourism receipts to GDP, which is used as a proxy measure of tourism's contribution to the national economic growth and development. It is not the best measure of tourism's contribution to economic growth and the national economy. The satellite accounting system can examine the actual contribution of tourism and other sectoral contributions to the national economy. Nepal has yet to establish such an accounting system to measure the real contribution of each sector, such as tourism, to the national economy.

Tourism has been contributing to economic growth and thereby helping to raise the standard of living of the people. The correlation between tourist arrivals and per capita income is found to be high and positive. The granger causality test shows that the relationship between tourist arrivals and per capita income is unidirectional, i.e., from tourist arrival to per capita income. This implies that tourist arrivals in the country bring a positive impact on the per capita income (PCIN) of the people.

Tourism receipts, as aforementioned, can contribute to the national economic growth through backward and forward linkages. Tourism is service industry and receipts from it are payments to the people involved directly or indirectly in catering to the needs of visitors in various stages. It can have widespread and wide coverage and so results in a more equitable distribution of incomes and has multiple effects through which more and more incomes are generated in different sectors of the economy. Such effects are categorized as direct effects, indirect effects and induced effects. With several rounds, a rupee received from the tourists, if invested in the economy, can generate many more rupees within one year. Such a type of

behaviour of investment is called the multiplier effect, so a rupee income from a tourist is not only one rupee but it creates more incomes and jobs.

V. THE VALUE OF TOURISM MULTIPLIER AND IMPACT ANALYSIS

Nepal is, no doubt, one of the popular tourist destinations with full potentialities. However, with an underdevelopment of high value tourist products, Nepal is said to have been catered to mostly by budget tourists. The global spread of tourism in industrialised and developed states has produced economic and other benefits in many related sectors - from construction to agriculture to the telecommunication sector. The magnitude of multiplier depends on the higher earnings from tourism, retention of earnings, strong backward and forward interlinked among major sectors of an economy. Prior to the calculation of multiplier effects, unit root tests for individual series were performed and found to be stationary at first difference.

The value of tourism income multiplier for Nepal is estimated using following formula derived in the previous section.

$$\frac{\partial Y}{\partial \mathrm{Rt}} = \frac{1}{1 - \mathrm{c}_1(1 - \mathrm{t}_1) - \mathrm{i}_1 + \mathrm{m}_1} = \frac{1}{1 - c_1 + c_1 t_1 - i_1 + m_1}$$

To estimate the marginal propensities of consumption, investment, imports and tax rate, Three Stage Least Square Method was used and the regression results are displayed in Table 4.

$$\frac{\partial Y}{\partial \mathrm{Rt}} = \frac{1}{1 - \mathrm{c}_1 + \mathrm{c}_1\mathrm{t}_1 - \mathrm{i}_1 + \mathrm{m}_1} = \frac{1}{1 - 0.89 + 0.89 \times 0.04 - 0.12 + 0.48} = 1.21$$

The marginal propensities of consumption (0.89), investment (0.12), imports (0.48), and tax rate (0.04) were calculated with the help of the Keynesian model given above, which gave the 1.21 income multiplier for tourism. The values of marginal propensities reveal that there is positive effect of consumption, investment, imports and tax rates in gross domestic product. The value of marginal propensity to consume shows that an increase in GDP by one Rupee leads to a 89 paisa increase in consumption. So new money injected from exports, remittances and tourism has stimulated the consumption of imported goods. The value of marginal propensity to import tells that out of one Rupee increase in GDP, 48 paisa is spent for imports of goods and services. The greater effect of the high marginal propensity to import resulted in the lower value of the tourism multiplier. Taxes and imports are regarded as the leakages on the multiplier analysis.

Table 4: Regression results

C=--217.3456 +0.891308(GNP-Ty)***   (-1.331881) (27.96872)   Adj R^2 = 0.954987 DW=1.845299
I=-104.3308+ 0.125098GNP***   (1.306756)(8.357015)   Adj R^2 =0.6508730 DW=1.534223
M=--351.6505**+ 0.480666GNP***   (-2.502944)(18.24747)   Adj R^2 =0.900020 0 DW=1.858325
Ty=--48.59833***+ 0.045689 GNP***   (-3.211696)(16.10448)   Adj R^2 = 0.976768 DW=1.346513

The figures in parenthesis are t values and *** and **significant at 1% and 5% level respectively

Overall output multiplier for Nepalese tourism was calculated at 1.16 by another study (NRB, 1989: 263) which is comparable with 1.21 estimated by this study. The value of multiplier reported at 1.24 for tea shops along with the trekking routes followed by travel agencies (1.43) (NRB, 1989: 264). The values of multiplier are reported 2.5 for Canada, 1.96 for Turkey,1.73 for UK, Hong Kong(1.02), Egypt(1.23), and Iceland(0.64) (Lundberg, 1995: 137). Since intersectoral linkages are very strong in the developed countries, new money injected into local economy stimulates various sectors within a given period of time. As a consequence, the value of the multiplier is seen to be higher. On the other hand, such linkages are weaker in the case of small import based economies such as Nepal, and the value of multiplier is expected to be small. Thus, the low value of the multiplier estimated above for the Nepalese economy can be viewed as per our prior expectation. Marginal propensities of investment and tax revenue are weaker in case of Nepal, it is indicative that only a small portion of tourism revenue has been spent on investment. But a greater portion of such revenues was spent on imports of goods of tourist consumption and daily consumption goods of local residents. The higher values of marginal propensity to imports and consumption reveal this fact. Although gross tourism receipts have been substantial, the net retention of such earnings in the economy is very low. The growth of business of the domestic tourism sector (airlines, hotel, restaurants, travel and trekking agencies) generates more tourism receipts for the economy. However, that a large chunk of international airline business in Nepal has been captured by the foreign airlines is revealed by the reduced business of NAC, to about 5% of total arrivals of tourists by air, together with an increasing role of foreign tour-operators in bringing the foreign tourists to Nepal, indicates the low retention of net tourism receipts in the economy. The Seemingly Unrelated Regression (SUR) method was used for the reduced form of equations estimating consumption, investment, import and GDP as the function of exogenous variables such as government expenditure, exports and tourism receipts. However, government expenditure and tourism receipts were found highly correlated and so government expenditure variable was dropped from the equations. The regression results presented in Table 5 show that import and national income (GNI) in Nepal are highly affected by tourism receipts.

Table 5: Regression results

C=-335.5697 + 0.072461X + 0.501386R (1.109881) (0.793698) (0.826175) Adj R^2 = 0.157931 DW=2.172882
I = 79.42406 + 0.065134X -0.200899R (0.536712) (1.457658) (-0.676353) Adj R^2 = 0.030507 DW=2.065000
M = -121.9940 - 0.135818 X + 1.689568R*** (-0.415767) (-1.532957) (2.868748) Adj R^2 = 0.199363 DW=1.807265
GNI = 348.5771 -0.016885 X*** + 1.367208 R*** (1.432624) (-0.229829) (2.799457) Adj R^2 = 0.385591 DW=1.540584

The figures in parenthesis are t values and ***significant at 1% level.

Where C= private consumption, I = private investment, M = imports, X = exports, R = tourism receipts and GNI = gross national income.

Another important contribution of the tourism is to employment generation. As developing economies have pressing underemployment and unemployment problems, one of the major objectives of economic development is to find gainful employment for all people who are actively looking for jobs. It is said that labour requirements in the tourism industry are often suited to the conditions prevailing in developing countries. The ability of the tourism industry to use labour intensively from the labour market is an important virtue of this industry. Tourism contributes extensively to generating employment for different categories of people. Because of tourism, jobs are directly created in hotels and restaurants, travel/tour agencies, trekking and mountaineering agencies, airlines, museums, and in amusement parks. Moreover, many more jobs are generated by tourist service providers and intermediaries in both tourist destination and tourist generating countries. Airlines businesses are in rise because of tourists. They create thousands of jobs. Other means of transportation such as roads, railways, ropeways and waterways are also connected with tourism development. Tourism business is indirectly linked with the several other businesses in an economy such as the suppliers of intermediate goods used for the production of touristic goods and services. So, with an increase in the flow of tourists the demand for goods and services in the tourist consumption also increases, which in turn gives rise to the demand for intermediaries used for the production of the touristic goods: that is new jobs are generated directly in tourism business and indirectly in tourism intermediaries. So tourism not only creates jobs directly in its own but also induced other businesses and thereby generates jobs indirectly. Thus, it is a tradition to calculate the tourism multiplier.

Tourism is regarded as a labour intensive industry since it employed 127 million people around the world in 1996, that is one job created for every 15 tourists (Holloway, 1998: 41). One can estimate roughly the number of jobs generated by the tourism sector with the help of the above formula for calculation, dividing the total number of international arrivals in the country by fifteen, i.e., one job is created by every fifteen tourist arrival. Accordingly only about 34 thousand persons are directly employed in tourism sector of Nepal. However, NRB reports (NRB, 1989:200) that employment created per bed was higher (1.4) in five star

hotels, compared to four star hotels (1.3) and three star hotels (0.9). South Asia regional level committee reported 44 thousand persons were employed in 1996 (SARTHRDC, 1997). Moreover, the Ninth Plan of Nepal reported that tourism in the country generated 182 thousand direct and seasonal employments in 1997, of which 75 thousands are estimated to be direct employment. This implies that every 5.6 tourist arrivals create one direct employment in Nepal. By these counts, jobs created by Nepalese tourism can be estimated. Accordingly, over 91 thousand persons were directly employed by the tourism sector in 2009. The difference between two estimates is huge and hardly comparable. However, Three Years Plan (2010-13) reported that a 90, 000 people were directly employed by the tourism sector in 2010 (NPC, 2011: 132). The number of direct employment in the tourism sector is estimated at 90,000 jobs in mid-January, 2010 and 100, 000 jobs in mid-January 2011 (MoF, 2011: 144). This is very close to our estimation shown in the last column of Table 5.

As per NLFS (2008) report, a 6.7% of the labour force is time related unemployment. It is hard to estimate the exact numbers of employment generated by the tourism sector in the country. Employment by this sector is not simply the direct ones but also indirect employment and induced employment that are generated by the tourism activities.

Annex 1 presents direct employment generated by the tourism sector. Tourism all over the world is known for its seasonality nature and so employs many peoples in the tourist season only and is categorised as seasonal or temporary employment. Many tour guides, trekking guides, porters, and other associated are left unemployed in off tourist season. In addition, tourism provides jobs for skilled professionals in hotels, restaurants, travel and trekking agencies around the year.

Tourism has thus become one of the country's most important sources of employment, which increased with the increase in tourism activities. Given a drastic decline in international tourism volumes and values in recent years, it might reasonably be expected that the total receipts and employment opportunities have been reduced and continue to decline drastically.

Mountaineering and group trekking offer jobs for many porters, and in some routes such as Simikot to Hilsa in Humla district, and other parts of Karnali, mule transport is used for carrying the bag and baggage of tourists. One of the issues in the tourism sector is that mostly jobs are created for only the tourist season and in the off-season most of them are laid off. So, greater efforts toward creating more full time jobs are desirable from this point, which could be possible from the promotion of domestic tourism. Nepal is fortunate enough to receive overseas tourists and Indian visitors in alternative seasons, which help in smoothing out the seasonal variations and thereby generating more full time jobs in the tourism sector.

VI. THE GRANGER CAUSALITY TESTS AND IMPACT ANALYSIS

The Granger causality tests on several macro economic variables from the Nepalese economy are discussed in this section. This test could establish the direction of causality between two variables. Annex 2 presents the Granger causality tests on several macro economic variables from the Nepalese economy.

The Granger causality tests for tourism receipts and GNI show that there is bidirectional relationship between these two variables. Another measure of tourism activity is the influx of the tourist arrivals in the country. The Granger causality tests for tourist arrivals and per capita income (PCI) reveals that there is unidirectional relationship that is the former causes the latter. Similarly, the Granger causality tests between GDP and tourism were carried out to examine the directional relationship between two, which further confirm the relationship and linkage between the two was bidirectional since the Granger causality tests to GDP and tourism receipts show that both have impacted by each other. It seems logical that the more developed economy can attract the more up-market tourists and generate more receipts and revenue and vice-versa. Countries like Israel and Singapore are the good examples in this context. On the other hand, tourism receipts can generate funds for the development of finance and foreign exchange earnings for investment and development, so tourism receipts can affect positively the GDP. The Granger causality tests on GDP and tourist arrivals also confirm that tourism affects the GDP positively. So this is consistent with the causality tests between GDP and tourism receipts.

Tourism promotes exports of goods and services, because visitors purchase many goods and services in the destination country. A visitor in Nepal purchases services such as transport, hotel/restaurants, entertainment, trekking and mountaineering, and commodities such as carpets, *thankas*, handicrafts and others. It is also true the other way around in the case of tourism. There is some relationship between tourism receipts and export earnings. In addition, trade itself promotes tourism since frequent visits of business people between trade partner countries is a rule. The Granger causality test also confirms this type of bidirectional effects of exports and tourism.

Tourism receipts are important from the perspective of development and growth, because tourism activities cannot be grow without the government initiative for infrastructure development. International air linkage is the most important institution and infrastructure for the growth of tourism, for the reason, government investment in the manpower training for tourism has utmost importance. When tourism starts generating additional tax revenues, new jobs and incomes in the economy, then government expenditures on tourism can be encouraged. So there can be two ways relationships. It is examined here whether there is a causal relationship between tourism receipts and government expenditure. The Granger causality test on development expenditure of the government and tourism receipts reveals that the former is impacted by the latter. As 'tourism receipts do not Granger cause development expenditure' is accepted, but 'development expenditure do not Granger cause tourism receipts' is rejected. This indicates there is only a one-way directional relationship between the two.

Tourism does not seem to cause development expenditure. But government expenditure on the tourism sector can lead to the greater increase in tourism receipts. So as a priori expectation, a greater investment in tourism development infrastructures causes more tourism receipts. So with the better infrastructures, the quality of the tourist destination can be enhanced inducing more tourist arrivals or length of the stay. Moreover, the number of up-market tourists can increase with the better infrastructures, services, tourist goods, and environments. The Granger causality test on total government expenditure and tourist arrivals reveals that there is unidirectional impact. The direction is from tourist arrival to government expenditure. The latter is impacted by the former; the null hypothesis was rejected at 1%.

The Granger causality test on development expenditure of the government and tourist arrivals reveals that the two are impacted by each other. The null hypotheses are rejected at 5% in both cases. It implies that tourist arrivals lead to the development activities of the government, such as investment in airports, road, and communities and other infrastructure which is common to both locals and tourists. On the other hand, development activities of the government add to the attractions of the tourists and induce the number of visitors to the destination.

The Granger causality test between tourism receipts and regular expenditure of the government shows that there are two-ways relationships between the two. It appears logical on the ground that government expenditure on the securities and regulatory activities can enhance the quality of the tourism products and impact positively on tourism receipts. On the other hand, tourism receipts can increase the fund in the government treasury and so the former affects positively on the regular expenditure.

Tax revenue is one of the important segments of total revenue of the government. We examine the Granger causality in the case of tax revenue also to see whether the results are consistent or not. The results show that there is a positive correlation between tourist receipts and government tax revenues. The direction of causality is from tourist receipts to government tax revenue. The null hypothesis that tourism receipts do not the Granger cause tax revenue was rejected at the 1% level. So tourist receipts contribute to increase the government tax revenue of Nepal. The casual relationship between tourism receipts and tax revenues shows that two have bi-directional relationship. The contribution of the tourism receipts on tax revenues is understandable since a proportion of the tourism expenditure contributes to government tax revenue such as VAT, airport tax, air fuel tax and so on.

Similarly, the Granger causality tests confirm that direct taxes, private consumption, and imports are heavily affected by the tourism receipts and viceversa but in the case of private investment and tourism receipts direction of causality flows from the former to the latter and thus unidirectional relationship. It reveals that tourism receipts statistically do not affect private investment.

VII. CONCLUSION

Tourism has impacted the Nepalese economy by virtue of demand for goods and services, transportation and communication, purchase of handicrafts, trekking and mountaineering, rafting, sight-seeing, city tours and involving in varied other activities. This is reflected in the value of the tourism receipts multiplier calculated for Nepal, estimated at 1.21, which seems to be reasonable as compared to similar studies in the past. However, it is a rough estimate, since it is not based on broad based input output analysis. The multiplier formula was derived from the Keynesian model of income and employment. The techniques of Three Stage Least Square and Seemingly Unrelated Regression were applied for the estimation of value of multiplier. Because of the high import content in the touristic consumption of goods and services, the magnitude of the multiplier effects on the income and employment generation through the backward and forward linkages is gauged at less effective in making the economy vibrant than it might be. However, on the basis of the Granger causality tests tourism effects on exports, government revenue generation such as taxes and expenditure are a good indication that tourism can be an engine of growth in the country in the days ahead. In addition, the Ganger causality tests carried out between tourism receipts and GDP, per capita income, GNI, service, and so on also show the linkage and causal relationships between these variables. Tourism receipts and tourist arrivals both show that tourism has impacted positively on the Nepalese economy. So from the above discussion of multiplier and the Granger causality tests it can be concluded that tourism does really matter for the economic growth of Nepal.

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Annex 1: Direct employment generated by tourism sector
(in number)

Year	Total number of tourist	Direct employment (by 15:1 ratio)	Direct Employment (by 5.6:1 ratio)
1980	162,897	10,860	29,089
1985	180,989	12,066	32, 319
1990	254,885	16,992	45,515
1995	363,395	24,226	64,892
2000	463,646	30,910	82,794
2005	375,398	25,027	67,035
2008	500,277	33,352	89,335
2009	509,956	33,997	91,063

Source: Nepal Tourism Statistics, 2009 and other issues; NPC, Ninth Plan and Tenth Plan.

Annex 2: Granger causality tests

Null Hypothesis	F-Statistic	Decision
GNI does not Granger cause tourism receipts	6.32193***	Rejected
Tourism receipts do not Granger cause GNI	10.3359**	Rejected
PCI does not Granger cause total tourist arrivals	1.7135	Accepted
Total tourist arrivals does not Granger cause PCI	16.039***	Rejected
Tourism receipts do not Granger cause GDP	3.68859*	Rejected
GDP does not Granger cause tourism receipts	7.59335**	Rejected
GDP does not cause tourist arrivals	1.5593	Accepted
Tourist arrivals does not Granger cause GDP	26.6054***	Rejected
Tourism receipts do not Granger cause service receipts	13.4396***	Rejected
Service receipts do not Granger cause tourism receipts	3.76744**	Rejected
Exports do not Granger cause tourism receipts	6.00005***	Rejected
Tourism receipts do not Granger cause exports	6.66445***	Rejected
Exports do not Granger cause tourist arrivals	0.0249	Accepted
Tourist arrivals do not Granger cause exports	13.5136***	Rejected
Tourism receipts does not Granger cause development expenditure	1.3925	Accepted
Development expenditure does not Granger cause tourism receipts	18.3310***	Rejected
Tourist Arrival does not Granger Cause development expenditure	3.1249**	Rejected
Development expenditure does not Granger Cause tourist arrival	3.7404**	Rejected
Tourism receipts does not Granger cause regular expenditure	7.7297***	Rejected
Regular expenditure does not Granger cause tourism receipts	5.5429***	Rejected
Tourism receipts do not Granger cause tax revenues	22.60***	Rejected
Tax revenues does not Granger cause tourism receipts	9.57***	Rejected
Tourist receipts does not Granger cause private investment	0.87667	Accepted
Private investment does not Granger cause tourism receipts	8.66725***	Rejected
Tourist receipts does not Granger cause direct taxes	5.13350**	Rejected
Direct taxes does not Granger cause tourism receipts	5.90965***	Rejected
Tourist receipts does not Granger cause private consumption	9.82592***	Rejected
Private consumption does not Granger cause tourism receipts	5.60010***	Rejected
Tourism receipts do not Granger cause imports	8.34203***	Rejected
Imports do not Granger cause tourism receipts	6.33399***	Rejected

***, ** & * Rejected at 1, 5 and 10% level.