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TOURISM EMPLOYMENT
An Analysis of Foreign Tourism in India

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Abstract

Foreign tourism is one of the largest industries in the world today. While foreign tourism has been growing steadily in India, it still has a large unexploited potential for further growth. Tourism growth has implications for employment, as tourism generates employment at all skill levels. This paper attempts to estimate total direct employment generated in India by foreign tourism. Estimating employment or output of the tourism sector is complicated by the fact that tourism is a composite sector. Further, since the same sectors and sub-sectors cater to tourists and non-tourists there is the problem of apportionment of estimates between the two. This paper uses a simple and innovative method of employment coefficients to arrive at estimates of employment generated foreign tourism in India.

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Employment, Tourism, Services Trade

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CONTENTS

<i>Abstract</i>	<i>i</i>
<i>Acknowledgements</i>	<i>ii</i>
<i>Contents</i>	<i>iii</i>
I. Introduction	1
II. Estimating Employment in Tourism: Approaches, Methods and Data	3
Past studies	3
Methodology	6
Definition of employment coefficient	6
Main assumptions	7
The Data	8
III. Estimation of Employment Coefficients for the Years 1993–94 and 1999–2000	8
IV. Estimation of Total Employment generated by Foreign Tourism	10
V. Future of Tourism Employment	12
VI. Main Findings and Conclusion	14
References	16

List of Appendices

<i>Appendix I</i>	Statistical Appendix	18
<i>Appendix II</i>	Time series forecasting of foreign tourism receipts in India	25

List of Tables

<i>Table 1</i>	Foreign tourist arrivals in India, 1991–2004	2
<i>Table 2</i>	Foreign exchange earnings from tourism, India, 1991–2004	3
<i>Table 3</i>	Estimates of employment coefficient for foreign tourism, India, 1993–94 and 1999–00	10
<i>Table 4</i>	Estimates of employment coefficient for foreign tourism, India, 2000–01 to 2004–05	10
<i>Table 5</i>	Estimates of employment in the tourism sector in India, 1993–94 and 1999–2000 to 2004–05 (lakhs)	12
<i>Table A1</i>	Pattern of expenditure of foreign tourists, 2003	18
<i>Table A2</i>	Concordance between 2- and 3-digit level of NIC-98 and NIC-87 for tourism-associated sectors	19
<i>Table A3</i>	Number of workers per crore/million of value added in Tourism related sectors in India, 1993–94 and 1999–2000	20
<i>Table A4</i>	Aggregate employment coefficient for foreign tourism in India, 1993–94 and 1999–2000	22
<i>Table A5</i>	Estimation of employment coefficient for 2004–2005 based on employment coefficient for 1993–94 and 1999–2000	23
<i>Table A6</i>	Indices of rate of inflation, India, 1993–94, and 1999–00 to 2004–05 (base 93–94 = 100)	24
<i>Table B1</i>	Estimation results	26
<i>Table B2</i>	Forecasts of revenue receipts due to foreign tourism, India, 2005–06 to 2014–15	27

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*Jesim Pais**

I. Introduction

Tourism has emerged as one of the largest industries both in terms of gross domestic product (GDP) and employment in the world today (ESCAP 1999; WTTC 2004b). In 2006 tourism GDP is likely to account for about 10 per cent of world GDP (WTTC 2006). India also has a large unexploited potential for foreign tourism (GOI 2001). Foreign tourism has been steadily increasing in India. In terms of number of tourist arrivals to the country in the last decade and a half, the number of tourists of foreign nationality visiting India increased from about 16.8 lakhs in 1991 to about 33.7 lakhs in 2004 (Table 1). Thus, the average annual growth rate of tourism in terms of foreign tourist arrivals was about 5.1 per cent in this period.

The importance of tourism as a source of foreign exchange for India cannot be ignored. The total foreign exchange earnings from tourism increased from about USD 1861 million in 1991 to about USD 4810 million in 2004 (Table 2). Thus, tourism receipts recorded an average annual growth rate of about 7.02 per cent between 1991 and 2004. In 2004, it accounted for about 12.1 per cent of total services exports from India. Its share in total exports (of goods and services) in the same year was 4.2 per cent.

Apart from the contribution for foreign exchange earnings, the importance of tourism industry can be measured in terms of its contribution to the national income (as measured by the tourism GDP) and employment. The nature of tourism industry, however, makes estimation of these parameters difficult. Tourism is a composite sector. It generates income in a large number of activities that feature as sectors and sub-sectors in the classificatory scheme of the National Accounts Statistics (NAS). Important among them are (i) Hotels and other accommodation units; (ii) Restaurants; (iii) Travel agents and tour operators; (iv) Transport services; (v) Tourist resorts and complexes; (vi)

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Entertainment facilities; (vii) Shopping facilities including sales outlets for curios, handicrafts, souvenirs, etc.; (viii) Conference and Convention facilities; (ix) Adventure and recreational sports facilities; and (x) Guide services. These activities provide goods and services to both the local population and tourists and therefore there is the problem of apportionment of output between tourism and non-tourism components and further, within tourism, between that generated by domestic and foreign tourism.

Tourism is widely recognised as a labour-intensive service sector. In addition, the nature of the sector is such that the multiplier and spill over effects are generally expected to be higher than other sectors. Tourism also generates employment for workers at all levels of skill (ESCAP 1996). But, for the reasons given above in respect of income and output no direct estimates of employment in tourism are possible on the basis of the prevalent scheme of generating statistics at the sectoral and sub-sectoral levels. An attempt has been made in this paper to estimate trends in employment generated by foreign tourism in India applying an alternative methodology that uses derived coefficients from available data.

Table 1
Foreign tourist arrivals in India, 1991–2004

<i>Year</i>	<i>Arrivals (in lakhs)</i>	<i>Percentage change</i>
1991	16.8	
1992	18.7	11.3
1993	17.6	-5.9
1994	18.9	7.4
1995	21.2	12.2
1996	22.9	8.0
1997	23.7	3.5
1998	23.6	-0.4
1999	24.8	5.1
2000	26.5	6.9
2001	25.4	-4.2
2002	23.8	-6.3
2003	27.3	14.7
2004	33.7	23.4

Source: Ministry of Tourism

Table 2
Foreign exchange earnings from tourism, India, 1991–2004

<i>Year</i>	<i>Amount (Rs crore)</i>	<i>Amount (USD million)</i>
1991	4318	1861
1992	5951	2126
1993	6611	2124
1994	7129	2272
1995	8430	2583
1996	10046	2832
1997	10511	2889
1998	12150	2948
1999	12951	3009
2000	14238	3168
2001	14344	3042
2002	14195	2923
2003	16429	3533
2004	21828	4810

Source: Ministry of Tourism

II. Estimating Employment in Tourism: Approaches, Methods and Data

Past studies

Three different approaches have generally been used for estimating employment in the tourism sector. They are (i) employment coefficient approach, (ii) input-output analysis approach, and (iii) computational general equilibrium analysis approach (CGE). Each of these approaches has its own advantages and limitations. The employment coefficient is the ratio of employment (number of jobs) to output. In the case of tourism, employment coefficient is derived as the weighted average of the coefficients of sectors and sub-sectors in which employment gets generated as a result of tourism. Estimating employment with the use of coefficients is straight forward provided data on output or income are available for the sectors concerned.

The input-output analysis has been popular among scholars, institutions and government agencies estimating the employment impacts of tourism (Dwyer and Forsyth 1998; Styne 2001). In the input-output method, estimates for industry output for

different sectors are estimated for a given aggregate tourism expenditure. Aggregate tourism-generated employment is then estimated by multiplying the tourism related output of each industry by employment coefficient (employment to output ratio) for that industry and summing estimates across industries (Dwyer and Forsyth 1998 and ESCAP 1990). Input-output method is, however, criticised for its unrealistic assumptions and inflexibility as far as changes in prices and technology are concerned.¹

The World Travel and Tourism Council (WTTC) estimates employment generated by Travel and Tourism Industry and Travel and Tourism Economy for various countries using the Tourism Satellite Accounts (TSA) methodology that is based on input-output tables.² In India, a recent study has attempted to estimate total employment and output generated by the tourism sector using the TSA methodology (NCAER 2006).

The computable general equilibrium (CGE) analysis can be described as an improvement over the input-output method. The CGE method does not suffer from some of the inadequacies of the input-output method (Dwyer and Forsyth 1998). CGE models allow for detailed analysis of inter-industry links together with price variations and supply constraints. However, setup costs of a CGE model are high in terms of hardware, software and data requirements. Thus, analysis based on CGE models is generally undertaken by large agencies such as the government and institutions that have a long-term interest in monitoring an economy or specific sectors of the economy.³

There have been some earlier attempts to estimate total employment due to tourism in India without distinguishing between employment effects of domestic and foreign tourism. The United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) estimated the direct and indirect employment generated by tourism in India for a few years till 1989–90. The National Council of applied Economic Research (NCAER) has recently developed the first ever Tourism Satellite Account for India (NCAER 2006).

¹ For a detailed criticism of the input-output analysis approach in general and specifically its use to estimate employment estimates for tourism see Dwyer and Forsyth (1998); Blake *et al* (2001); and Stynes (2001).

² Since the demand generated by tourism encompasses a great variety of goods and services, the idea behind construction of a tourism satellite account is to analyse in detail all the aspects of demand for goods and services that might be associated with tourism within the economy, to observe the operational interface with the supply of such goods and services within the same economy, and to describe how this supply interacts with other economic activities. For more on the TSA and its methodological framework see WTO (2001).

³ For more on CGE models to estimate effects of tourism in an economy see Dwyer and Forsyth (1998); Blake *et al* (2001); and Blake (2004).

This provides estimates of total output and employment generated by tourism in India again without distinguishing between domestic and foreign tourism. The TSA estimates are based on surveys on tourist expenditure pattern conducted in 2002–03 and input-output tables of 1998–99.⁴ The WTTC has been estimating country-wise annual data on employment generated in the tourism sector since 1998.⁵ Based on TSA methodology, the WTTC provides estimates of employment generated by tourism at two levels: the travel and tourism industry and the travel and tourism economy. While the former captures direct employment due to tourism, the latter includes indirect employment in the economy due to tourism.

The nature of foreign tourism is very different from that of domestic tourism and therefore its effects, on the economy, in general, and specifically on employment, is likely to be different from that of domestic tourism. We have not come across any recent study that has attempted to estimate employment generated by foreign tourism in India.⁶ The present study, attempts to estimate the size of the employment generated by foreign tourists visiting India, using more recent data and some improvements in methodologies used in earlier studies.

A foreign tourist is defined in line with the UN/WTO tourism statistics as any person normally living outside India (with an Indian or foreign nationality) and travelling to India for less than 12 months and “whose main purpose of the trip is other than the exercise of an activity remunerated from within the place visited.”⁷ Therefore foreign tourists include foreign nationals as well as non-resident Indian nationals (NRI).

The present paper is an attempt to estimate direct employment generated by foreign tourism in India in recent years. The paper also attempts some projections for the next five years. It does not estimate employment in all—domestic and foreign tourism, nor does it venture into estimating indirect employment generated by tourism through intersectoral linkages.

⁴ For more details on the surveys see NCAER (2005) and MOT (2006).

⁵ See the Annual Reports and Country Reports of the WTTC (For example, WTTC 2004a; 2004b).

⁶ The latest estimates of employment generated by foreign tourism are for the year 1989–90 by ESCAP. These estimates are based on the input-output tables from 1983–84 (ESCAP 1992)

⁷ It should be noted that this definition of a foreign tourist is different from the definitions followed in India by the Ministry of Tourism. In the Indian definitions, only foreign tourist holding foreign passports are included. Thus NRI tourists who account for a substantial share of foreign tourists (38 per cent in 2003) are excluded among foreign tourists in the convention Indian definition.

Methodology

In the estimation of employment due to foreign tourists in India, we have used the employment coefficient approach. The employment coefficients are computed for such sectors and sub-sectors that provide goods and services to foreign tourists as hotels and restaurants, transport and travel services, cultural and recreational services, trade (retail trade of food products, trade in products such as handicrafts, textiles and so on) and manufacture (food products, textiles, gems and jewellery, handicraft and so on).

Definition of employment coefficient

Employment coefficient measures the ratio between employment and output/value added in a sector/economy, and can be expressed in several ways. In this exercise we define employment coefficient for a sector as the number of workers employed in that sector for a crore of rupees of value added in that sector.⁸ If the currency used in the computation of the employment coefficient is the US dollar, the corresponding definition of employment coefficient is given as the number of workers employed for every million US dollar worth of value added that is generated. The aggregate employment coefficient for the economy or for a composite sector such as the tourism sector is given by the weighted average of the employment coefficients of the different sub-sectors that form the economy or composite sector. The estimate of total employment in the composite sector is given by the product of the total expenditure in the composite sector and aggregate employment coefficient for the composite sector.

Thus, if n_i is the number of workers employed in sector i , and if v_i is the value added in that sector then the employment coefficient for the sector i is given by

$$ec_i = \frac{n_i}{v_i} \dots\dots\dots 1$$

The aggregate employment coefficient is then given by

$$EC = \sum_{i=1..m} w_i ec_i \dots\dots\dots 2$$

OR

$$EC = \sum_{i=1..m} w_i \frac{n_i}{v_i}$$

⁸ When the employment coefficient is based on total output, it is also referred to as tourism employment multiplier (Wiersma et al 2004; Ennew 2004).

Where m is the total number of sub-sectors that form the economy or composite sector and w_i is the weight of sector i and depends on its size or some other feature. In case of a composite sector such as tourism, weight w of each of the sub-sectors is derived from the expenditure pattern of tourists.

Total employment in the economy or composite sector is given by

$$Employment = EC \times GDP_c \quad \dots\dots\dots 3$$

Where GDP_c is the domestic product in the economy or the composite sector. In case of a composite sector such as tourism, the tourism GDP can be estimated from the demand side as the sum total of all expenditures by tourists. It should be noted that the term employment or number of jobs here refers to number of man-years employment.

Main assumptions

Our estimation involves the following main assumptions arising primarily from the limitations of data availability.

1. *There is no leakage due to imports.* It is assumed that all goods and services provided to foreign tourists in India are produced within the country and not imported. This assumption could have been avoided if data on the amount or share of imports in tourists' consumption were available.⁹
2. *The employment coefficient for all firms is equal.* It is assumed that the labour productivity of all firms within a sector associated with tourism is equal.¹⁰ In other words, we assume that labour productivity in restaurants that cater to

⁹ Leakages of foreign exchange earnings could be a major obstacle in the contribution of tourism to economic development (Benavides 2001; Unctad 1998). We do not have data on the import content of tourists' consumption for recent years. In an earlier study for the year 1978, it is reported that the import content of tourism consumption in India was about 12 per cent (Chattopadhyaya 1995). More recently, a figure of between 10 and 20 per cent leakage has been quoted "for most advanced and diversified developing countries" (Benavides 2001). A recent study on the import intensity of Indian industry shows that the import content for hotels and restaurants was about 5 per cent of total sales in 1998–99 (ISID 2006). The corresponding share in other sectors related to tourism was 9 per cent for Tobacco products, 11 per cent for Beverages and between 4 and 10 per cent for Food Products including sugars, edible oils, tea and coffee (ISID 2006).

¹⁰ For example, it is assumed that the labour productivity in all restaurants in the hotel and restaurants sector is the same and equal to the average labour productivity for the sector.

tourists and non-tourists is equal. This assumption may not hold as it is known that certain firms specialise in servicing tourists (as against non-tourists) and that this could lead to a different labour productivity in such firms.

3. *The expenditure pattern of foreign tourists remains stable.* As in the case of previous assumption, due to lack of data, we have assumed that the pattern of expenditure of foreign tourists remains constant over the period of our estimation. Thus, the sub-sectors that are identified as being part of the composite tourism sector remain and their relative weights remain constant for our estimation period. This could be an unrealistic assumption as it is seen from the earlier studies that the expenditure pattern indeed changes over time.¹¹

The Data

For the estimation of the employment coefficients, we have used data on value added at the 2-digit level for the years 1993–94, 1999–2000 and later from National Account Statistics of the Central Statistical Organisation (CSO 2005). Data on employment at the 2- and 3-digit levels for 1993–94 and 1999–2000 are from the 50th and 55th rounds of the National Sample Surveys on Employment and Unemployment conducted by the National Sample Survey Organisation (NSSO 1997; 2001). The Reserve Bank of India provides data on total expenditure by foreign tourists under the larger head of invisibles in the balance of payment statistics (RBI 2005). We have used these data for the years 1993–94, 1999–2000 to 2004–05. Data on the pattern of foreign tourists' expenditure are computed from the survey of foreign tourists conducted by the Ministry of Tourism in 2003 (MOT 2006).

III. Estimation of Employment Coefficients for the Years 1993–94 and 1999–2000

Any attempt to estimate employment due to tourism would have to take into account that several sectors or sub-sectors are related to tourism and that not all goods and services produced in these sectors are wholly consumed by tourism. Further, the relative contribution of these sectors will have to be determined. A survey to determine the pattern of expenditure of foreign tourists in India was conducted in 2003 on behalf of the Ministry of Tourism (MOT 2006). Apart from identifying sectors that are associated with tourism, the study also provides with information to arrive at the sectoral distribution of tourism expenditure by foreign tourists. The details of the pattern of foreign tourists'

¹¹ ESCAP conducted surveys of foreign tourists in the years 1982–83 and again in 1988–89. The results of the surveys show that expenditure pattern of tourists indeed changes over time (ESCAP 1992).

expenditure in India are given in Table A1 in the statistical appendix. The share of each sub-sector in the expenditure of tourists has been used as weight for that sub-sector in the estimation of aggregate employment coefficient.

Sector-wise data on employment are available only from the large sample surveys of the NSS for the years 1993–94 and 1999–2000.¹² We have therefore used these employment data for our estimations. Data on sector-wise value-added and employment at the NIC 2- and 3-digit levels have been used to compute estimates of the aggregate employment coefficient for the tourism sector for the years 1993–94 and 1999–2000. In the absence of data on sector-wise employment in 2004–2005, the corresponding estimates of employment coefficient are derived using coefficients for 1993–94 and 1999–2000 and the change between these two years.

First, based on existing literature and the survey of foreign tourists conducted by the Ministry of Tourism, we have identified such sub-sectors or activities, services and products, at 2- and 3-digit levels of industrial classification that can be associated with foreign tourism in India. Data on value added for these sub-sectors for 1993–94 and 1999–2000 were obtained from the CSO. Data on value added provided by the CSO are based on National Industrial Classification 1987 (NIC 87), while data on employment from the NSSO for 1993–94 are in NIC (1987) and for 1999–2000 in NIC (1998). Correspondence between the two have been ensured on the basis of concordance between 2- and 3-digit levels of NIC-87 and NIC-98 for the sectors tourism-associated sectors.¹³

Estimates of aggregate employment coefficient for India's foreign tourism sector are given in Table 3.¹⁴ It is evident from the table that the aggregate employment coefficient per crore of rupees declined from 584 in 1993–94 to 466 in 1999–2000. The corresponding estimates per million dollars of value added similarly declined from 1832 in 1993–94 to 1370 in 1999–2000. This decline in the employment coefficient between 1993–94 and 1999–2000 could be explained by many reasons. Such a decline has been noticed in other sectors of the economy due to technological and structural changes that have led to an increase in labour productivity. A part of the decline may also be because inflation is not

¹² The next such large sample survey was conducted by the NSS in 2004–05, the results of which are expected in July 2006.

¹³ For details see Table A2 in the statistical appendix.

¹⁴ Detailed estimation of employment coefficient and aggregate employment coefficient is given in Tables A3–A5 in the statistical appendix.

fully captured by the deflator used. Similar reduction in the employment coefficient for the tourism sector over time has also been found in other countries.¹⁵

Table 3
Estimates of employment coefficient for foreign tourism, India, 1993–94 and 1999–00

<i>Year</i>	<i>Workers / Rs crore</i>	<i>Workers / Million USD</i>
1993–94	584	1832
1999–00	466	1370

Since data on sector-wise employment for the year 2004–2005 are not available, we have used an indirect method to arrive at the employment coefficients. First we have estimated the compound annual growth rate (CAGR) for the sector-wise employment coefficients between 1993–94 and 1999–2000. Using these sector-wise CAGR estimates, corresponding sector-wise employment coefficients for the years 2000–01 to 2004–2005 were then calculated. The weighted average of the sector-wise employment coefficients for 2004–2005 gives the aggregate employment coefficient for 2004–2005. The results are reported in Table 4. Not surprisingly, the employment coefficient for 2004–2005, 393, is lower than that for 1999–2000.

Table 4
Estimates of employment coefficient for foreign tourism, India, 2000–01 to 2004–05

<i>Year</i>	<i>Workers / Rs crore</i>	<i>Workers / Million USD</i>
2000–01	449	1310
2001–02	434	1255
2002–03	420	1203
2003–04	406	1155
2004–05	393	1110

IV. Estimation of Total Employment generated by Foreign Tourism

The total estimated employment generated in the economy due to foreign tourism is given by the product of the aggregate employment coefficient for the tourism sector estimated in the previous steps and the total foreign exchange receipts from foreign tourists. Estimates of total employment in the tourism sector may vary depending on whether the components used in its estimation are in current prices, constant prices or in

¹⁵ See, for example, Table 1 in Dwyer and Forsyth (1998).

US dollars. The difference is mainly due to differing rates of inflation. Current price estimates are likely to give an underestimate of the actual employment as inflation leads to lower estimates of employment coefficient (Dwyer and Forsyth 1998). Hence there is a need to deflate current price values of using appropriate deflators.

Accounting for inflation in the tourism sector is, however, not a straight forward task. In the estimation of the employment coefficient, one can use data on value added at constant prices (say 1993–94 prices) as given by the CSO. However, when it comes to normalising the foreign exchange receipts for inflation, it can be done either by using figures in constant rupees or in US dollars. For obtaining tourism receipts at constant prices, we can either use the overall GDP deflator, or the deflator specific to component-sectors of tourism (tourism deflator). A further improvement on the tourism deflator would be the weighted tourism deflator. Estimation of employment can also be done by using the 1993–94 exchange rate on the tourism receipts that are in US dollars. It should be noted that since four different measures of inflation discussed above vary differently over time, corresponding estimates of employment are bound to vary accordingly. Table A6 in the appendix gives indices of inflation by the 4 different measures.

On the one hand, the computation of total employment generated by tourism based on the value of tourism receipts in US dollars is straight forward but is likely to underestimate employment figures as the rupee-dollar movement has not been in line with the rate of inflation within the economy. On the other hand, computation at 1993–94 rupee-US dollar exchange rate is highly sensitive to one data point (exchange rate in 1993–94) and in the present case is likely to overestimate employment for later years.

Table 5 gives the estimates of direct employment in the tourism sector using constant rupee prices, at 1993–94 exchange rates and in US dollars, for the years 1993–94, 1999–2000 and 2004–05. 1993–94 being the base year for all calculations, all estimates for the year 1993–94 remain identical at 40.7 lakhs workers. Our estimates show that tourism employment remained somewhat unchanged between 1993–94 and 1999–2000 reaching a figure that was between 41 and 44 lakhs in 1999–2000. The estimates using US dollars are lower than the estimates using constant rupees for 1999–2000 and 2004–05 because of the difference in the rate of inflation in the economy and in the foreign exchange markets. In light of the above discussion on appropriate method for deflating estimates, it can be concluded that direct employment generated in the economy due to expenditure of foreign tourists ranged between 47.6 and 52.5 lakhs in 2003–04 and between 56 lakhs and 62 lakhs in 2004–05.

During 1993–94 and 1999–2000 (for which estimates of total employment are available) employment generated by foreign tourism accounted for about 1.18 and 1.15 per cent of the total employment. The total number of foreign visitors to India in 2003 was about 43 lakhs (26 lakh foreign nationals and 17 lakh NRIs) and the average duration of their stay was about 23 days. Thus, our estimates show that an average foreign tourist visit to India of 23 days generates a little more than 1 man-year of employment in the country. It should be noted that our estimates are only for foreign tourists and do not include employment generated by domestic tourists. It should be also noted that these estimates are for direct employment and do not include indirect employment or multiplier effects that may be caused by foreign tourism.

Table 5
Estimates of employment in the tourism sector in India,
1993–94 and 1999–2000 to 2004–05 (lakhs)

Sl. No.	Description	1993–94	1999–00	2000–01	2001–02	2002–03	2003–04	2004–05
1	Tourism employment coefficients in constant prices and tourism receipts deflated by							
a	<i>GDP deflator</i>	40.7	40.1	41.1	39.6	39.2	43.4	47.8
b	<i>tourism GDP deflator</i>	40.7	41.4	41.6	40.4	40.6	44.4	51.4
c	<i>93–94 exchange rates</i>	40.7	44.4	49.3	42.8	43.6	52.5	62.0
2	Tourism employment coefficients and tourism receipts							
	in US dollars	40.7	41.6	45.8	39.4	39.9	47.6	55.8

V. Future of Tourism Employment

A simple five-year projection of the estimates of employment coefficient and tourism receipts based on data from the last decade and a half show that employment generated by foreign tourism in 2010 could be between 77 and 89 lakhs.¹⁶ In other words, foreign tourism may generate between 21 lakh and 27 lakh additional jobs in the period from 2004–05 to 2010.

A more complex exercise of forecasting the expected tourism receipts in 2010 using time series data from 1950–51 to 2004–05 give us alternate estimates. Details of the time series forecasting are given in Appendix II. Our time series analysis forecasts show that if foreign tourism receipts grew at a rate similar to that in the past, the estimated foreign tourism receipts in 2009–10 would be about USD 11,892 million. The projected employment coefficient for the year 2009–10 based on the estimates for 1993–94 and

¹⁶ These estimates are based on the assumption that tourism growth in the period between 2005 and 2010 will be similar to the growth of tourism in the period between 2000 and 2005.

1999–2000 is about 900 workers per USD million. Using these two, we have estimated the total direct employment likely to be generated by foreign tourism in India in 2009–10 to be about 107 lakh jobs.

The growth of foreign tourism in any country depends on a number of factors, including factors that are external to the individual country. The events on September 11, 2001 and thereafter, led to a global slump in tourism for over three years. In a fast globalising world, India's tourism industry has to face the consequences of such events. In India, foreign tourism saw an absolute fall, both in terms of tourism receipts and tourist arrivals, in the early 2000s before recovering in 2003–04. Among others, the "Incredible India" campaign by the Ministry of Tourism is credited with the recovery in the growth of tourism. Any attempt, therefore, at projecting the potential of tourism will have to take into account the various factors that might influence tourism arrivals to the country and note that the effects of campaigns such as the "Incredible India" campaign are likely to taper off in the years to come.

Apart from conventional tourism, which has grown substantially in recent years, there are indications that travel for business (business tourism) and for health (health tourism) are likely to account for a larger share in tourism in India in the near future. An unprecedented growth in services exports, mainly information technology (IT) and information technology enabled services (ITeS), in the last decade, has led to a boom in business travel to India. In 2003, about 9 lakh foreign tourists visited India for business and professional reasons accounting for about 22 per cent of all foreign tourists visiting India in that year (MOT 2006).

There are no reliable data on healthcare tourism in India. However, some estimates point to the growing importance of this segment of tourism. According to the Confederation of Indian Industries' estimates, 150,000 foreign patients came to India for treatment in 2004. About 2.2 lakh tourists, accounting for 5 per cent of the all tourists interviewed in a 2003 survey of foreign tourists reported "health and treatment" as a main purpose for visiting India. McKinsey & Co., the international consulting firm, estimates outsourced medical care could bring India USD 2.2 billion a year by 2012.

Thus, there is no doubt that business and health tourism are likely to play an important role in driving growth of tourism in India in the next few years. The potential of both business tourism as well as health tourism may not be realised if factors such as infrastructure and healthcare facilities are not able to keep pace with tourism demand. For example, the availability of hotel rooms and the average rents give an indication of the strain on business hospitality infrastructure in the IT centres. Bangalore, without

doubt, the software capital of the country tops the list with highest occupancy rates as well as abnormally high average room rents (ARR). In 2004–2005, the average room rental in Bangalore was Rs 6,762 per day when compared with Rs 4,307 for Mumbai, Rs 5,498 for Delhi, Rs 2,384 for Chennai and Rs 2,729 for Hyderabad. Similarly, the occupancy rates in these cities in 2004–05 were 75 per cent and above with Bangalore having an occupancy rate of about 80 per cent.

The potential for healthcare tourism is in the midst of a situation where a large segment of India's population has no access to affordable basic health facilities. Therefore, the sustainability of India as a large-scale healthcare tourism destination is doubtful unless major initiatives are undertaken to meet the challenges posed by needs of healthcare in the country.

Thus, growing business and healthcare tourism may lead to a situation of a shortage in general infrastructure and specifically of tourism infrastructure such as hotel rooms and transport facilities, and on the health tourism front, of healthcare infrastructure. And, unless the government and respective industries undertake concrete steps to meet the challenges arising out of the increasing tourism demand, it will be difficult for the tourism industry to grow at levels as in the recent past.

VI. Main Findings and Conclusion

Foreign tourists visiting India in 2004–05 contributed to about USD 5029 million in foreign exchange. In this paper, we have attempted to examine the employment implications of foreign tourism in India. We have used the employment coefficient method to arrive at estimates of employment in the tourism sector. Though we have arrived at estimates of employment generated by foreign tourism, the paper is as much about the estimates as it is about the methodology that we have used in arriving at these estimates for tourism which is a composite sector.

Employment coefficients for the tourism sector in India are estimated to be 584 in 1993–94 and 393 in 2004–05. That is, the number of jobs created for one crore rupees of foreign tourist expenditure (at constant 1993–94 prices) in India in 2004–05 was 393. We note that the employment coefficient for foreign tourism has declined over the years from 1993–94 to 1999–2000. But an increase in the tourist inflow and expenditure has led to an increase in total employment generated.

Our estimates show that direct employment generated in the Indian economy in 1993–94 due to foreign tourism was at about 40.7 lakhs. Thereafter the tourism led employment

stagnated and is estimated at about 44.4 lakhs in 1999–2000. This increased to about 62 lakhs in 2004–05. Our estimates for tourism generated employment suggest that on an average, the visit of every foreign tourist generates about one job (one man-year of employment) in India. Based on our methodology and extending it to the year 2010, our simple projection shows that direct employment generated by foreign tourists in 2010 may be around 79 lakhs, thus creating up to 23 lakh additional jobs between 2004–05 and 2010. A more complex time-series analysis of the tourism receipts and subsequent employment estimates suggest that employment generated by foreign tourism in 2010 could reach a figure of about 107 lakhs.

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Appendix I

Statistical Appendix

Table A1
Pattern of expenditure of foreign tourists, 2003

Sl. No.	Item of expenditure	Share of expenditure (%)		
		NRI tourists	Other foreign tourists	All tourists
(1)	(2)	(3)	(4)	(5)
1	Accommodation	5.5	18.2	13.7
2	Food and Beverages	6.0	15.3	11.9
3	Internal transport	11.1	16.5	14.6
4	Travel services	4.4	9.6	7.7
5	Cultural & Recreational Services	7.5	6.6	6.9
6	Other connected Services	19.9	3.3	9.2
7	Shopping	45.5	30.6	36.0
	<i>of which</i>			
7.1	Textiles (including carpets)	10.1	9.1	9.5
7.2	Gems and jewellery and handicrafts (incl. diamonds)	15.0	13.0	13.7
7.3	Books and reading material	1.9	0.7	1.1
7.4	Personal goods	9.2	6.9	7.7
7.5	Others	9.2	0.9	3.9
	Total	100.0	100.0	100.0

Source: Computed from results of the International Passenger Survey, 2003 (MOT 2006).

Table A2

Concordance between 2- and 3-digit level of NIC-98 and NIC-87 for tourism-associated sectors

Sl. No.	Sub-sectors in tourism sector based on tourists expenditure pattern	Corresponding industrial categories according to National Industrial Classification		
		NIC code (1998)	NIC code (1987)	Description of NIC code
(1)	(2)	(3)	(4)	(5)
1	Accommodation	55	69	Hotels and restaurants
2	Food and Beverages	155+151+152 +153+154+16	20+21+22	Mfg of food and food products + tobacco and beverages
3	Inland transport	60 + 61 + 62	70+71+72	Railways and other internal transport by land, water and air
4	Travel services	630	73+74	Supporting and auxiliary transport activities; activities of travel agencies
5	Cultural & Recreational Services	92	95	Recreational, cultural and sporting activities
6	Other connected services	93+ 95	96+99	Personal services
7	Retail trade (shopping)	50 + 51 + 52	60-68 + 84	Retail trade (shopping)
<i>of which major manufactured items are</i>				
7.1	Textiles and carpets	17	23+24+25+ 26	Manufacture of textiles and products
7.2	Jewellery, Gems and Precious stones	33 + 369	38	Mfg of jewellery, precious stones, diamond cutting, handicrafts and so on
7.3	Books and reading material	21+ 22	28	Manufacture of Paper, Printing and Publishing
7.4	Personal goods (soaps, cosmetics)	24	30	Manufacture of chemical and chemical products

Table A3
Number of workers per crore/million of value added in Tourism related sectors in India, 1993–94 and 1999–2000

Sl. No.	Broad sectors associated with tourism expenditure	Corresponding industrial categories according to National Industrial Classification	Employment in these sectors (lakhs)		Value added in each sector (constant Rs crore)		Value added in each sector (million US dollars)		No. of workers per crore of value added (constant Rs)		No. of workers per million of value added (US dollars)	
			1993–94	1999–2000	1993–94	1999–2000	1993–94	1999–2000	1993–94	1999–2000	1993–94	1999–2000
			(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Accommodation	Hotels and restaurants	29.1	40.1	6163	11571	1963	3928	472	346	1481	1020
2	Food and Beverages	Mfg of food and food products + tobacco and beverages	80.7	93.8	17378	25731	5534	9731	464	364	1457	964
3	Internal transport	Railways and other internal transport by land, water and air	81.4	113.6	38884	57725	12383	21129	209	197	657	537
4	Travel services	Supporting and auxiliary transport activities; activities of travel agencies	2.0	3.2	2193	3481	698	1349	92	91	288	234
5	Cultural & Recreational Services	Recreational, cultural and sporting activities	6.6	6.8	559	662	178	209	1184	1028	3718	3262
6	Other connected Services	Personal services	98.2	85.0	8282	12046	2638	4495	1185	705	3722	1891

Table A3 Continued

Sl. No.	Broad sectors associated with tourism expenditure	Corresponding industrial categories according to National Industrial Classification	Employment in these sectors (lakhs)		Value added in each sector (constant Rs crore)		Value added in each sector (million US dollars)		No. of workers per crore of value added (constant Rs)		No. of workers per million of value added (US dollars)	
			1993–94	1999–2000	1993–94	1999–2000	1993–94	1999–2000	1993–94	1999–2000	1993–94	1999–2000
			(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
7	Shopping	Retail trade (shopping)	213.3	318.1	93206	156628	29683	52807	229	203	719	602
	<i>of which</i>		0.0	0.0								
7.1	Textiles (<i>incl. carpets</i>)	Manufacture of textiles and products	88.4	116.6	20465	26481	6518	8044	432	440	1356	1450
7.2	Gems and jewellery and handicrafts (<i>incl. diamonds</i>)	Mfg of jewellery, precious stones, diamond cutting, handicrafts and so on	17.8	22.0	7542	11854	2402	3761	237	186	743	585
7.3	Books and reading material	Paper, printing and publishing	14.6	16.0	18500	31347	5892	11219	79	51	247	142
7.4	Personal goods	Manufacture of chemical and chemical products	8.6	10.7	5275	6819	1680	2348	164	158	514	458
7.5	Others	Others	129.4	165.4	51782	76501	16491	25371	250	216	785	652
8	Total		770.1	991.2	270229	420846	86060	144389	285	236	895	686

Note: The category 7.5 "Others" is defined to have a value that is an average of all goods in the list above.

Table A4
Aggregate employment coefficient for foreign tourism in India, 1993–94 and 1999–2000

Sl. No.	Broad sectors associated with tourism expenditure	No. of workers per crore of value added (constant Rs)		No. of workers per million of value added (US dollars)		Weights	Weighted employment coeff. ¹		Weighted employment coeff. ²	
		1993–94	1999–2000	1993–94	1999–2000		(3)*(7)	(4)*(7)	(5)*(7)	(6)*(7)
		(3)	(4)	(5)	(6)		(7)	(8)	(9)	(10)
1	Accommodation	472	346	1481	1020	0.26	120.7	88.6	379.0	260.9
2	Food and Beverages	464	364	1457	964	0.12	55.3	43.5	173.7	114.9
3	Internal transport	209	197	657	537	0.15	30.5	28.6	95.6	78.2
4	Travel services	92	91	288	234	0.08	7.1	7.0	22.3	18.1
5	Cultural & Recreational Services	1184	1028	3718	3262	0.07	82.1	71.3	257.8	226.1
6	Other connected Services	1185	705	3722	1891	0.09	109.3	65.0	343.1	174.3
7	Shopping	229	203	719	602	0.36	82.3	73.1	258.5	216.8
	<i>of which</i>									
7.1	Textiles (<i>incl. carpets</i>)	432	440	1356	1450	0.09	40.9	41.8	128.6	137.5
7.2	Gems and jewellery and handicrafts (<i>incl. diamonds</i>)	237	186	743	585	0.14	32.5	25.5	102.1	80.4
7.3	Books and reading material	79	51	247	142	0.01	0.9	0.6	2.8	1.6
7.4	Personal goods	164	158	514	458	0.08	12.7	12.2	39.7	35.4
7.5	Others	250	216	785	652	0.04	9.7	8.4	30.6	25.4
8	Aggregate employment coefficient for the tourism sector as a whole						584	466	1834	1370

Note: 1. Employment coefficient is the ratio of workers employed per rupee crore of value added. 2. Employment coefficient is the ratio of workers employed per million dollars of value added. See also notes in Table A3.

Table A5
Estimation of employment coefficient for 2004–2005 based on employment coefficient for 1993–94 and 1999–2000

Sl. No.	Broad sectors associated with tourism expenditure	No. of workers per crore of value added (constant Rs)		No. of workers per million of value added (US dollars)		Change from 1993–94 to 1999–2000 (CAGR)		Estimate for 2004–2005		Weights	Employment coeff. (2004–2005)	
		1993–94	1999–2000	1993–94	1999–2000	Const Rs.	US dollars	Const Rs	US dollars		(9)*	(10)*
											(11)	(11)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1	Accommodation	472	346	1481	1020	-5.0	-6.0	267	747	0.26	68.4	191.3
2	Food and Beverages	464	364	1457	964	-3.9	-6.7	298	683	0.12	35.5	81.5
3	Internal transport	209	197	657	537	-1.0	-3.3	187	455	0.15	27.2	66.2
4	Travel services	92	91	288	234	-0.2	-3.4	90	197	0.08	6.9	15.2
5	Cultural & Recreational Services	1184	1028	3718	3262	-2.3	-2.2	914	2925	0.07	63.4	202.9
6	Other connected Services	1185	705	3722	1891	-8.3	-10.7	458	1075			
7	Shopping	229	203	719	602	-2.0	-2.9	184	520	0.09	42.2	99.2
	<i>of which</i>											
7.1	Textiles (incl. carpets)	432	440	1356	1450	0.3	1.1	448	1534	0.36	66.2	187.3
7.2	Gems and jewellery and handicrafts (incl. diamonds)	237	186	743	585	-4.0	-3.9	152	479	0.09	42.5	145.5
7.3	Books & reading material	79	51	247	142	-7.0	-8.8	35	90	0.14	20.8	65.9
7.4	Personal goods	164	158	514	458	-0.6	-1.9	153	416	0.01	0.4	1.0
7.5	Others	250	216	785	652	-2.4	-3.0	192	558	0.08	11.8	32.2
8	Aggregate employment coefficient for the tourism sector as a whole										393	1095

Note: See notes in Table A3 and A4

Table A6
Indices of rate of inflation, India, 1993–94, and 1999–00 to 2004–05 (base 93–94 = 100)

Sl. No.	Sector	1993–94	1999–00	2000–01	2001–02	2002–03	2003–04	2004–05
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	The economy in general (<i>gap deflator</i>)	100	153	159	164	171	176	185
2	The value of the rupee <i>vis-à-vis</i> the US dollar	100	138	146	152	154	147	143
3	The sub-sectors that together form the tourism sector	100	148	157	161	165	172	172*
4	The sub-sectors that together form the tourism sector (<i>not weighted</i>)	100	149	158	163	168	175	175*

Source: Author's estimates based on CSO data.

Note: * Sectoral data on value added for 2004–05 are not available, hence the inflation in tourism and related sectors for 2004–05 is assumed to be same as in 2003–04.

Appendix II

Time series forecasting of foreign tourism receipts in India

In this appendix we describe a time series analysis of foreign tourism receipts in India, by using annual data from 1950–51 till 2004–05. The data are from RBI.

We fit a deterministic time trend (DTT) model to the natural logarithm of revenue receipt. The model is

$$Y_t = \alpha_0 + \alpha_1 t + v_t$$

where v_t is a stationary ARMA process, in this case found to be an AR(2) process given by

$$v_t = \beta_0 + \beta_1 v_t + \beta_2 v_{t-1} + \varepsilon_t$$

where ε_t is white noise.

The estimation of the above model is carried out in the following steps:

1. Estimation of the time trend: First the trend component is estimated by standard OLS technique. The estimated parameters along with their standard errors are given in Panel A of Table B1.
2. Once the trend component is estimated, the series is de-trended by subtracting the trend component from the original series. This gives the v_t series.
3. Time series specification of v_t : Standard Ljung-Box test of the v_t series indicates existence of significant autocorrelation in the de-trended v_t series. Existence of significant autocorrelation and partial autocorrelation can also be ascertained from the plots of sample autocorrelation function (ACF) and partial autocorrelation function (PACF).

A specification search in terms of Akaike Information Criterion (AIC) and Schwartz Bayesian Criterion (SBC) of the de-trended series has led us to an AR(2) process as the most appropriate specification of the de-trended series. The estimates of the AR(2) parameters, along with their corresponding standard errors are given in Panel B of Table B1.

The residuals extracted from the AR(2) fit of the de-trended series is found to be white noise, as shown by the insignificant ACF and PACF. The Ljung-Box

statistic also rejects the existence of significant autocorrelation in the residual series. Thus, the AR(2) fit seems to be able to fit the time series dynamics of the de-trended v_t series.

Table B1
Estimation results

<i>Parameter</i>	<i>Estimates</i>	<i>SE</i>	<i>t-Value</i>	<i>p-value</i>
Panel A: The trend equation				
α_0	2.12	0.14	14.87	0.00
α_1	0.12	0.00	27.85	0.00
Panel B: The AR (2) equation for the de-trended series				
β_0	-0.04	0.20	-0.17	0.86
β_1	1.29	0.12	10.35	0.00
β_2	-0.40	0.13	-3.17	0.00

4. Forecasting: The one-period ahead forecast of the log revenue is given by using the estimated model as

$$y_{\hat{t}+1} = \hat{\alpha}_0 + \hat{\alpha}_1(t+1) + \hat{v}_t$$

This forecast is used to make the forecast of the second period; the second period forecast is used to forecast the third period and so on. Thus, successive forecasts are used recursively to arrive at the forecast for the year 2010.

The forecasts for the revenue receipts are made by taking exponential of the forecasted log revenues:

$$x_{t+s} = e^{y_{t+s}}$$

The successive forecasts, along with their forecast errors are given in Table B2.

Table B2
Forecasts of revenue receipts due to foreign tourism, India, 2005–06 to 2014–15

<i>Year</i>	<i>Forecasted Revenue (million USD)</i>	<i>Forecast error</i>
2005–06	6094	0.182
2006–07	7309	0.296
2007–08	8674	0.374
2008–09	10197	0.424
2009–10	11892	0.456
2010–11	13778	0.476
2011–12	15881	0.489
2012–13	18229	0.496
2013–14	20857	0.501
2014–15	23803	0.503

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The Institute for Studies in Industrial Development (ISID), successor to the Corporate Studies Group (CSG), is a national-level policy research organization in the public domain and is affiliated to the Indian Council of Social Science Research (ICSSR). Developing on the initial strength of studying India's industrial regulations, ISID has gained varied expertise in the analysis of the issues thrown up by the changing policy environment. The Institute's research and academic activities are organized under the following broad thematic areas:

Industrial Development: Complementarity and performance of different sectors (public, private, FDI, cooperative, SMEs, etc.); trends, structures and performance of Indian industries in the context of globalisation; locational aspects of industry in the context of balanced regional development.

Corporate Sector: Ownership structures; finance; mergers and acquisitions; efficacy of regulatory systems and other means of policy intervention; trends and changes in the Indian corporate sector in the background of global developments in corporate governance, integration and competitiveness.

Trade, Investment and Technology: Trade policy reforms, WTO, composition and direction of trade, import intensity of exports, regional and bilateral trade, foreign investment, technology imports, R&D and patents.

Employment, Labour and Social Sector: Growth and structure of employment; impact of economic reforms and globalisation; trade and employment, labour regulation, social protection, health, education, etc.

Media Studies: Use of modern multimedia techniques for effective, wider and focused dissemination of social science research and promote public debates.

ISID has developed databases on various aspects of the Indian economy, particularly concerning industry and the corporate sector. It has created On-line Indexes of Indian Social Science Journals (OLI) and Press Clippings on diverse social science subjects. These have been widely acclaimed as valuable sources of information for researchers studying India's socio-economic development.

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