SPATIAL DISTRIBUTION OF TOURISM IN CHINA: A TIME SERIES ANALYSIS

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Abstract

The spatial distribution of economic activity has been an important area of research. It was revealed that the economic inequality in China has increased since China began its economic reforms in 1978. Economic activity has become increasingly more skewed towards China’s coastal areas and overall regional economic inequality has increased with economic growth in China. International tourism in China has been growing rapidly since 1979. While tourism is expected to play a leading role in regional development, the fact is, nevertheless, that spatial inequality of inbound tourism from 1980s to mid 1990s was much greater than for that of the socio-economic variables, and international tourism appeared to reinforce the regional inequalities, and was in fact contributing to greater economic disparity between coastal and inland China. With increasing significance of tourism in China, its impacts on the regional economic inequality need even more attention today. This paper aims to analyze the regional and provincial distribution of international tourism in 2004, and investigate the changes in the spatial distribution of international tourism in China from 1986 to 2012. Gini coefficients for major tourist indicators are applied to test the characteristics of tourism distribution. Distributional shifts within both inland and coastal areas are discussed separately in order to consider forces reinforcing or reducing regional inequalities in China’s tourism industry. Factors contributing to regional convergence in the distribution of international tourism are also discussed. Gini coefficients for major tourist indicators are applied to test the characteristics of tourism distribution. The paper confirms that although international tourism is still heavily concentrated on the coastal areas in China, inland areas are gradually improving their share over the years, leading to a slow but noticeable reduction in the regional disparity of international tourism distribution. This is a desirable change in a country with severe economic inequality across regions. The convergence of international tourism as compared to the economic divergence between coastal and interior China may reinforce the prospects of tourism growth in reducing regional inequality in China.

Keywords: China, inbound tourism, inequality, Spatial distribution
1. INTRODUCTION

It has been well documented that Chinese economic power is heavily concentrated in the coastal region, and with the progress of economic growth since 1978, there has been increasing disparity between the coastal and inland areas in almost all the major economic indicators (Chai, 1994; Jian et al, 1996; Pedroni and Yao, 2006).

International tourism arrivals in China continue to grow after the Open Door policy was implemented in 1979. From 1980 to 2014, China’s inbound tourist arrivals and tourism receipts grew at an average annual rate of 9.6 and 11 per cent respectively (calculated from data in NTA, 2002 to 2015). Currently ranking as the sixth most popular tourist destination, China is expected to attract 130 million tourists annually by the year 2020, making it the world’s top tourist destination (WTO, 2002).

The spatial distribution of tourism may impact on how different regions in such a vast country benefit from tourism, it has been important to evaluate the distribution patterns of inbound tourism in China, in order to understand how growing international tourism is influencing the expanding regional economic inequality in China.

In this research, ‘China’ refers to the Mainland China, excluding Hong Kong, Macao, and Taiwan. ‘Tourist arrivals’ or ‘overseas tourists’ coincides with the concept of ‘arrivals of tourists from abroad’ (WTO, 1992), includes foreigners, overseas Chinese who hold Chinese passports, and compatriots who live in Hong Kong, Macao and Taiwan. ‘International tourism’ is used as equivalent of ‘inbound tourism’. In addition, Chongqing is regarded as part of Sichuan Province in this paper for data consistency, although it was designated as the fourth municipality in 1997.

This paper provides an overview of economic disparity in China across regions. In addition, by the calculation of Gini coefficients for major tourist indicators, the spatial distribution of inbound tourism is examined. Furthermore, factors related to regional disparity of inbound tourism and strategies to reduce regional inequity are addressed.

2. REGIONAL ECONOMIC DISPARITY IN CHINA

With the progress of economic growth since 1978, there has been increasing disparity between the coastal and inland areas in almost all the major economic indicators, including GDP per capita, real per capita incomes, and household income (Chai, 1994; Pedroni and Yao, 2006).

According to common practice, China’s coastal area covers three municipalities and nine provinces, namely Liaoning, Hebei, Beijing, Tianjin, Shandong, Jiangsu, Shanghai, Zhejiang, Fujian, Guangdong, Guangxi and Hainan. The remaining 19 localities are categorized as the ‘inland’ or ‘non-coastal’ area. The coastal area supports around 49 percent of China’s population and produces over 64 percent of its national income on 14 percent of the nation’s land area (SSB, 2008). In 2008,
the total GDP of this coastal area was 68 per cent of the national total (based on figures in SSB, 2009). From 1978 to 2009, the proportion of the East coastal areas in China’s total GDP has grown by 13.2 per cent, and gap between the East coast and Inland is still increasing (SSB, 1992 to 2015).

It has been well recognized that Chinese economic power is heavily concentrated in the coastal region. Cai (1994) claimed that there was conditional convergence of per capita production across China from 1978 to 1993. Convergence is conditional on physical investment shares, employment growth, human-capital investment, foreign direct investment and coastal location. Other research suggests that regional income in China converged from 1978 to 1984 with the rise in rural productivity, but started to diverge again from around 1984 onward, because the coastal areas grew much faster than the interior, even though the convergence continued within the coastal localities (Jian et al, 1996).

The Gini ratio, as proposed by Gini in 1912 in French, measures the relative degree of departure of a population from the state of perfect equality. It has a value of zero for absolute equality and unity for complete inequality. The greater the degree of inequality the larger is the Gini coefficient. The Gini coefficient can be used to measure the degree of inequality in the regional distribution of tourism. They are calculated using the formula provided by the Macmillan Dictionary of Modern Economics (Pearce 1992: 172):

\[
G = 1 + \frac{1}{n} - \frac{2}{n \times y_0} \times (y_1 + 2y_2 + 3y_3 + \ldots + ny_n)
\]

where G represents the Gini coefficient, n is the number of observations, y0 is the mean of observations, and y1, y2, ... yn represent individual observations in decreasing order of size of the relevant variable, y.

On a global scale gini coefficient is found to have increased from 0.609 in 1993 to 0.628 in 2001, reflecting an increased between-plus within country inequality, excluding China (Edward, 2006). This means the rich countries have been growing richer and the poor ones are relatively poorer. During the same time, Gini for China rose substantially from 0.396 to 0.457 (Edward, 2006). The overall Gini for China’s household income was 0.46 in 2005, which is very high in the world (Ministry of Finance of China, 2006). Relatively lower Gini have been observed in the distribution of general economic indicators within a smaller study group, including household income. The Gini coefficients for income at urban and rural areas were a lot lower, at 0.34 and 0.37 respectively (Ministry of Finance of China, 2006), as a result of huge urban and rural disparity. Increasing regional disparity was identified in other areas such as health, because the regional discrepancies in health increased with the development of per capita GDP (Fang et al, 2010).

Regional economic disparity has become a threat to the social stability of China, and the country is seeking measures to reduce the expanding gap between the coastal and inland areas.
The increase of Gini and regional divergence could lead to social instability, inequality in the opportunity in the access to health care, and education. The existence of some monopoly industries, such as public utilities, and the presence of corruption, have further worsened Gini ratios for China (Ministry of Finance of China, 2006).

3. REGIONAL DISTRIBUTION OF TOURISM

Debates exist in the literature about whether tourism development promotes centralisation or decentralisation of economic activity. Christaller (1963) argued that it is likely to be a decentralising force whereas McKee and Tisdell (1990) hypothesised that it is likely to add to central economic development tendencies. Research by Opperman (1992 and 1994) gave some support for the latter hypothesis. Research by Wen and Tisdell (2001) and Wen and Sinha (2009) in relation to tourism development in China confirmed that inbound tourism is contributing to expanding regional disparity. The relative dominance of coastal areas in Chinese tourism has varied over the years. Table 1 shows the proportion of major tourist variables accounted for by 12 coastal areas from 1986 to 2012.

<table>
<thead>
<tr>
<th>Year</th>
<th>Receipts</th>
<th>Tourist arrivals</th>
<th>Hotel employees</th>
<th>Hotel rooms</th>
</tr>
</thead>
<tbody>
<tr>
<td>1986</td>
<td>93.5</td>
<td>85.7</td>
<td>83.3</td>
<td>78.1</td>
</tr>
<tr>
<td>1988</td>
<td>87.3</td>
<td>89.1</td>
<td>78.3</td>
<td>79.0</td>
</tr>
<tr>
<td>1990</td>
<td>89.2</td>
<td>88.4</td>
<td>77.6</td>
<td>70.8</td>
</tr>
<tr>
<td>1992</td>
<td>89.5</td>
<td>84.0</td>
<td>77.4</td>
<td>71.2</td>
</tr>
<tr>
<td>1994</td>
<td>89.3</td>
<td>81.4</td>
<td>76.9</td>
<td>71.5</td>
</tr>
<tr>
<td>1996</td>
<td>85.6</td>
<td>78.6</td>
<td>72.7</td>
<td>70.1</td>
</tr>
<tr>
<td>1998</td>
<td>84.8</td>
<td>78.9</td>
<td>72.9</td>
<td>70.2</td>
</tr>
<tr>
<td>2000</td>
<td>84.5</td>
<td>77.4</td>
<td>68</td>
<td>65.4</td>
</tr>
<tr>
<td>2002</td>
<td>83.6</td>
<td>75.9</td>
<td>54</td>
<td>61</td>
</tr>
<tr>
<td>2004</td>
<td>85.1</td>
<td>80</td>
<td>59</td>
<td>59.1</td>
</tr>
<tr>
<td>2006</td>
<td>84.7</td>
<td>79</td>
<td>58</td>
<td>59.6</td>
</tr>
<tr>
<td>2008</td>
<td>85.2</td>
<td>79.4</td>
<td>59</td>
<td>58.8</td>
</tr>
<tr>
<td>2010</td>
<td>83.7</td>
<td>78.2</td>
<td>60.1</td>
<td>57.3</td>
</tr>
<tr>
<td>2012</td>
<td>83.1</td>
<td>79.1</td>
<td>60.2</td>
<td>56.7</td>
</tr>
</tbody>
</table>

Source: Calculated from data in NTA (1987-2014)

The dominance of coastal areas in China’s inbound tourism is unquestionable as indicated in Table 1. Disparity of inbound tourism in its regional distribution is much greater than the general economy. In the meantime, an overall downward trend for the proportion of 12 coastal areas in China from 1986 to 2012 in main tourist indicators is apparent in Table 1.
4. GINI COEFFICIENTS AND SPATIAL DISTRIBUTION OF INBOUND TOURISM IN CHINA

Table 2 Gini Coefficients for Major International Tourism Indicators in China

<table>
<thead>
<tr>
<th>Year</th>
<th>Receipts</th>
<th>Tourist arrivals</th>
<th>Number of hotel employees</th>
<th>Number of hotel rooms</th>
</tr>
</thead>
<tbody>
<tr>
<td>1986</td>
<td>0.8374</td>
<td>0.7577</td>
<td>0.7344</td>
<td>0.6344</td>
</tr>
<tr>
<td>1988</td>
<td>0.7297</td>
<td>0.7276</td>
<td>0.5766</td>
<td>0.5978</td>
</tr>
<tr>
<td>1990</td>
<td>0.7988</td>
<td>0.7412</td>
<td>0.5941</td>
<td>0.5236</td>
</tr>
<tr>
<td>1992</td>
<td>0.7472</td>
<td>0.7049</td>
<td>0.6090</td>
<td>0.5361</td>
</tr>
<tr>
<td>1994</td>
<td>0.7446</td>
<td>0.6706</td>
<td>0.5815</td>
<td>0.5208</td>
</tr>
<tr>
<td>1996</td>
<td>0.7443</td>
<td>0.6701</td>
<td>0.5812</td>
<td>0.5203</td>
</tr>
<tr>
<td>1998</td>
<td>0.6903</td>
<td>0.6428</td>
<td>0.5810</td>
<td>0.5128</td>
</tr>
<tr>
<td>2000</td>
<td>0.6881</td>
<td>0.6387</td>
<td>0.4432</td>
<td>0.4667</td>
</tr>
<tr>
<td>2002</td>
<td>0.6728</td>
<td>0.6361</td>
<td>0.3957</td>
<td>0.3956</td>
</tr>
<tr>
<td>2004</td>
<td>0.6635</td>
<td>0.6277</td>
<td>0.3897</td>
<td>0.3901</td>
</tr>
<tr>
<td>2006</td>
<td>0.6631</td>
<td>0.628</td>
<td>0.382</td>
<td>0.382</td>
</tr>
<tr>
<td>2008</td>
<td>0.6636</td>
<td>0.626</td>
<td>0.385</td>
<td>0.383</td>
</tr>
<tr>
<td>2010</td>
<td>0.671</td>
<td>0.624</td>
<td>0.382</td>
<td>0.378</td>
</tr>
<tr>
<td>2012</td>
<td>0.668</td>
<td>0.625</td>
<td>0.383</td>
<td>0.381</td>
</tr>
</tbody>
</table>

Source: Calculated from data of NTA, various years

While it may not be convincing by using percentage calculation only to determine regional disparity, Gini coefficients are regarded as a powerful tool to identify regional disparity. Calculation of Gini coefficients was conducted with the help of Excel software by listing groups of data for 30 localities in descending order before multiplying them by corresponding weights valued from 1 to 30. Cross-sectional data and time-series are examined to see if any trends are apparent in the regional distribution of tourism in China. Following sections provide an analysis of Gini coefficients for all thirty localities, Gini coefficients for coastal and then inland China, to examine the potential trend from 1986 to 2010.

Most of these Gini coefficients for tourism are extremely high, indicating a severe disparity in the distribution of international tourism. They are also higher than most Gini coefficients for the spatial distribution of general economic indicators in China (Ministry of Finance of China, 2006; Wen and Sinha, 2009).

However, there is a general reduction in the value of Gini coefficients for all the four tourist indicators for China from 1986 to 2008, as reflected in Table 2, indicating a gradual reduction in the spatial concentration of tourism. The distribution of hotel rooms has become more dispersed, corresponding to the effort of all localities to expand hotel supply in the hope of promoting tourism (Wen and Tisdell, 2001). Concentration in tourism demand on the coast,
as depicted by high Gini ratios, has been higher than the supply of tourism facilities, perhaps mainly as a consequence of expansion in supply of tourist facilities and services in some inland areas without adequate consideration of demand (Wen and Tisdell, 2001), or in the hope of attracting more tourists by increasing supply of tourist facilities.

Gini coefficients for the whole of China reflect only the systemic inequality. Hence, detailed analysis of changes in inequality within the coastal and inland areas is a necessary step to describing more accurately the change in both inter- and intra-regional inequality in tourism in order to understand regional dynamics. Gini coefficients for major international tourism indicators in the coastal areas and inland areas over years are calculated separately in order to understand the trend of international tourism distribution within coastal China.

Gini coefficients for major tourist indicators within the coastal area are much lower in general than those for the whole of China as indicated in Table 2, implying a much more even distribution of tourism within coastal areas than that for China as a whole. Even lower Gini coefficients exist within the inland areas, implying relatively even provincial distribution in this area. The generally declining Gini ratios from 1986 to 2010 indicate that international tourism distribution within coastal and inland China is becoming more dispersed over the years.

5. OVERALL REDUCTION IN THE CONCENTRATION OF INBOUND TOURISM IN CHINA

Although inbound tourism is still skewed towards the coastal areas, the reduction in the concentration on the coastal areas of China since the mid 1980s is encouraging. International tourists were only free to visit designated places open for foreigners in China in the late 1970s and early 1980s, and there were considerable restrictions on foreigners visiting some parts of China, mainly in the interior. Entry permits were issued by the government, after careful checking, in order to control tourist inflow to areas that were regarded by the Chinese government as unsuitable for foreign tourists (Wen and Sinha, 2009). This type of entry control prevented many foreigners visiting the interior. However, with the progress of China’s opening up, restrictions have gradually decreased. Entry ports to China were less than 50 in the early 1980s, with the majority of them located in the coastal areas, but more than 200 border points all over China were open in 1995, allowing easier entry to the interior (NTA, 1996). Today in fact tourists can travel freely in China. The proportion of foreigners visiting the interior among all the tourist arrivals in China increased from 11 per cent in 1988 to 20 per cent in 1995, and over 37 per cent in 2008 (NTA, various years). This process of opening the interior to tourism undoubtedly has contributed to the increasing visitation to the inland.

Growth in nature based and rural tourism may have also promoted inland China. It has been mentioned that tourists are seeking travel alternatives and are prepared to pay extra to obtain the desired ‘green’ travel experience (Millman, 1989). Nature-based tourism was growing by up to 30 per cent whilst general tourism increased at an average annual rate of 4 per cent (Lindberg, 1991). Ecotourism has the potential in providing opportunities for rural areas to achieve sustainable development (Wearing and Neil, 1999: 136), but may also damage
vulnerable peripheral areas (Hall and Boyd, 2005). Abundant nature based tourism resources are located mainly in the inland areas of China.

A stable decline of Gini coefficient indicates a reduction in regional concentration and convergence of economic power. On the contrary, increasing Gini attributes to expanding regional disparity and divergence of economic capacity. It is crucial to discuss whether there is any indication for convergence in the sector of international tourism in China, as China is making a great effort to reduce its regional disparity. In contrast to divergence in the general economy, convergence is observed in Chinese tourism over the period 1986-2010. A general decline of Gini coefficient for major tourism indicators is attributed to a reduction in regional concentration of international tourism. Among the Gini ratios for four different tourist indicators for the entire China, coastal and inland areas, those for the entire China are generally the highest while those for the interior the lowest, leading to the conclusion that the disparity between coastal and interior China is the major cause of regional inequality in Chinese tourism. As a fast growing industry with high multiplier effect, tourism may have the capacity to influence the regional distribution of the general economy. In addition, in inland regions, divergence in economic indicators has occurred but convergence in tourism indicators is present. There is less inequality in tourism in this area than other economic indicators. Hence international tourism in the inland seems to have moderated regional inequality.

6. HOW TO CONTINUE TO DECENTRALISE TOURISM

The trend of convergence in the regional distribution of international tourism is significant in the sense that it defies the hypothesis that tourism has added to the economic disparity between coastal and inland China. Otherwise, the higher concentration of tourism in the coastal areas than that of the general economy, as indicated by higher Gini ratios for tourist indicators than those for the general economy (Wen and Tisdell, 2001), may well lead to the conclusion that tourism has added to regional disparity instead of fulfilling the goal of promoting economic growth in the inland area. If expanding economic divergence across regions has become a threat to national stability in China (Ministry of Finance of China, 2006), it seems pertinent to understand what contribution the tourism industry, as a sector that is growing quickly with high multiplier effects, may make in reducing regional disparity.

Many countries have expressed their interest, in principle, in decentralizing economic development regionally, and have considered the decentralization of tourism as a possible step in that direction. In principle, there are two ways in which tourism can become geographically more dispersed. First, individual inbound travelers can disperse more widely from given initial entry points; and secondly, although the dispersal indicator for each traveler remains the same, entry points can be increasingly scattered so more geographically varied starting points occur, and itineraries can be developed to cover more varied locations as between travelers or groups of travelers (Wen and Tisdell, 2001).

The type of dispersal indices mentioned above concentrate only on the first factor. For
example, since it is found that longer staying tourists disperse more widely as do tourists from particular countries, the policy suggestion is that the government adopts tourism promotion policies which encourage visits by such groups. Opperman (1992) found that longer staying tourists in Malaysia exhibited greater dispersion than shorter staying visitors and that Europeans had a greater dispersal index than Asians. This suggests that encouraging European tourists to visit Malaysia, rather than Asian tourists, would result in a greater regional scatter of tourism in Malaysia.

Another possibility would be to have shorter staying tourists or those showing little dispersal to visit more varied locations, e.g., arrive at more scattered entry points and have greater variety in the locations visited by different tourists. To promote such a policy, the government needs to provide a variety of locations, foster diverse international entry points and promote not just a few key tourist destinations in the country, especially tourist destinations in less well known places. The diversifying strategies with a high dispersal index, rather than the strategy of concentration on inbound tourists, seem to have been increasingly favored by China in encouraging tourism development in inland China. Nevertheless, developments have occurred which makes for greater dispersal of individual travelers to China. The proportion of inbound travelers who are independent travelers has risen and so has the proportion of travelers coming to China for purposes other than visiting friends and relatives. A further global trend favoring more dispersal of inbound travelers to China has been a decline in the appeal of mass tourism and greater interest in ecotourism and cultural tourism (Novelli, 2005).

Few countries have completely clarified their plans for decentralizing tourism development. But given that tourism is skewed in favor of cities and the main centers of economic development, there is an urgent need for governments to consider policies to promote decentralization of tourism. This is especially so for peripheral areas because they have limited economic opportunities for industrial development, but possess rich tourism resources.

7. CONCLUSION

With increasing significance of tourism in China, its impacts on the regional economic inequality need even more attention. While tourism is expected to play a leading role in regional development, spatial inequality of inbound tourism from 1980s to 2010 was much greater than for that of the socio-economic variables, and international tourism appeared to reinforce the regional inequalities (Wen and Tisdell, 2001), and was in fact contributing to greater economic disparity between coastal and inland China (Wen and Sinha, 2009).

Although international tourism is still heavily concentrated on the coastal areas in China, and its concentration has exceeded that of the general economy, inland areas are gradually improving their share over the years, leading to a slow but noticeable reduction in the regional disparity of international tourism distribution. Inland China is endowed with resource advantages for ecotourism compared with the coastal areas where mass tourism is more significant. The fact
that the share of tourism for non-coastal areas is on the increase in China along with growth in aggregate tourism demand for the whole country implies that greater spatial dispersal of tourism development is occurring. This is a desirable change in a country with severe economic inequality across regions. The convergence of international tourism as compared to the lack of economic convergence between coastal and interior China, combined with the potential of tourism as a growth pole, reinforces the prospects of tourism growth in reducing regional inequality in China.

The trend of convergence in the tourist industry between coastal and inland China is an encouraging phenomenon, because it shows the potential for international tourism to counteract regional economic disparity in China. Therefore factors contributing to the trend in regional convergence of tourism require more attention in order to identify ways in which the tourism industry can make a larger contribution to reducing regional economic divergence in China.

Policies for attracting tourists to neglected tourist locations, which may be rich in tourist resources but not well known and off the beaten track, are needed. If such locations are to attract tourists they have to be appropriately promoted and adequate transport and infrastructure provided for visiting them. Improved transport and communications between varied centers can do much to help promote the dispersal of tourists.

Due to the limitation of available statistics, the paper analyses only the spatial distribution of international tourism. Considering the growing significance of domestic tourism in China, and the general tendency for domestic tourists to be more dispersed than international visitors (Seckelmann, 2002), the regional distribution of domestic tourism may have been a lot less concentrated along the coastal area. More data is needed to validate this assumption.

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