



Revisiting Economic Benefits of  
Tourism for Hong Kong:  
Comparisons for Mainland vs.  
Non-Mainland, and Overnight vs.  
Same-day Visitors



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# **Revisiting Economic Benefits of Tourism for Hong Kong: Comparisons for Mainland vs. Non-Mainland, and Overnight vs. Same-day Visitors**

Yun-wing SUNG

## **Abstract**

The inauguration of the Individual Visit Scheme (IVS) in 2003, led to a surge of Mainland visitors, many of whom were Same-day visitors as the flexibility of IVS (as opposed to group tours) enabled Mainlanders in nearby areas to visit Hong Kong on frequent same-day trips, avoiding hotel costs. This depressed per capita visitor's expenditure in Hong Kong. The surge also led to overcrowding and conflicts with locals. As a result, the government has tried to attract more Non-Mainland and Overnight visitors to avoid over dependence on the Mainland market.

Analysis of the economic benefits of tourism is important for policy making. Though official estimates of value added and employment generated by inbound tourism are available, the breakdown of these benefits into those of different types of visitors (Mainland vs. Non-Mainland, Overnight vs. Same-day), are not available. This paper estimates the breakdowns by types of visitors and also by the five sub-industries of tourism, namely, Retail Trade, Accommodation, Food Services, Cross-boundary Transportation, and Others. The results enable us to compare the contributions to value added and employment by types of visitors and by sub-industries.

Our estimations support the government's focus on attracting Non-Mainland and Overnight visitors. To optimize the limited capacity to receive tourists in Hong Kong, it is rational to substitute high value-added visitors for low value-added ones.

This paper concludes with applying the above estimates by types of visitors to two simple policy exercises: The economic loss from the suspension of Multiple Entry Permits for Mainland visitors in April 2015, and the economic gains from easing Covid travel restrictions that would increase Non-Mainland visitors relative to Mainland visitors as few Mainlanders are allowed to leave the Mainland due to China's strict Covid controls.

# 香港旅遊業再探：比較內地與非內地、 過夜與不過夜旅客的經濟貢獻

宋恩榮

## 摘 要

2003 年創始的自由行放寬了內地遊客來港的限制，引致內地旅客，特別是不過夜旅客的爆炸性增長。自由行遠比參加旅行團靈活及便利，容許鄰近地區的內地旅客以多次「一日遊」的形式訪港，節省住宿酒店的費用；結果是降低了旅客的人均消費，也造成擠塞及與本地居民的衝突。為了避免過度依賴內地旅客，香港政府一直致力吸引更多非內地旅客及過夜旅客訪港。

分析旅遊業的經濟貢獻對香港甚為重要。政府雖然提供了旅遊業每年產生的經濟利益（增加值及就業）的估計，卻沒有提供旅客的主要群組（內地與非內地、過夜與不過夜）的經濟利益的完整估計。本文把 2007 年至 2019 年的官方估計按上述群組細分，亦把每一個群組產生的經濟利益按不同行業（酒店、餐飲、零售、跨境運輸及其他）進一步細分，讓我們得以清楚比較不同旅客群組對不同行業在創造增加值及就業兩方面的經濟貢獻。

本文對旅客的經濟貢獻的分析的結果，證明香港政府努力吸引非內地旅客及過夜旅客的政策有客觀根據。香港旅客容量有限，需要以高增值旅客替代低增值旅客，來優化旅客結構。

最後本文把估算結果應用於兩個政策演練之中：（1）估計政府在 2015 年 4 月暫停「一簽多行」帶來的經濟損失；（2）因為內地的嚴格防疫措施，香港放寬防疫限制，將增加非內地旅客對內地旅客的比例。本文的分析結果，正可以用來估計香港放寬旅客防疫限制帶來的經濟利益。

# 1. Introduction

In view of its importance to the Hong Kong economy, tourism is officially designated as one of Hong Kong's "Four Key Industries" along with "Financial Services", "Trading and Logistics", and "Professional Services and Other Producer Services".

Tourism includes both inbound and outbound tourism. In terms of contributions to GDP and employment, inbound tourism is more than four times as large as outbound tourism. This article, as with the majority of studies on Hong Kong tourism, covers only inbound tourism due to its economic importance. Henceforth, unless specified otherwise, tourism will refer to inbound tourism only.

Inbound tourism includes two groups of international passengers, namely, visitors and non-visitors. Visitors refer to a non-resident visiting Hong Kong for any reason other than following an occupation remunerated in Hong Kong. Non-visitors include servicemen, aircrew, and transit/transfer passengers. Transfer passengers change plane at the airport, while transit passengers continue their flight in the same plane. As will be seen later, visitors account for the bulk of tourist expenditure and value added.

After reaching a peak in 2018, Hong Kong visitor arrivals and expenditure declined respectively by 14% and 25% in 2019 due to unrests associated with the anti-extradition protests. Tourism has been nearly wiped out since 2020 due to the Covid epidemic, and it has not yet recovered due to stringent Covid quarantine requirements on entry into Hong Kong. In 2021, the number of incoming visitors was only 0.14% (0.16%) of that of 2018 (2019).

This article thus focuses on the period up to 2019. In the peak year of 2018, Hong Kong's inbound tourism accounted for 3.6% of GDP and 5.8% of employment in Hong Kong. With the inevitable phasing out of stringent Covid controls on entry in the future, tourism should thrive again as Hong Kong has inherent strengths as a tourist and business hub. Though tourism is presently at a low ebb, the study of tourism in the pre-epidemic period should have significant policy relevance for the future.

In the 3-year long Covid era from 2020 to 2022, many important statistics on tourism, including statistics on tourist expenditure and its distribution on different economic sectors, were not compiled because tourism was nearly wiped out. This poses problems for the study of economic losses in tourism due to Covid, or for the estimation of gains in tourism arising from relaxations in Covid travel restrictions. However, this paper will quantify the economic benefits of different types of visitors up to 2019, and these estimates will help us gauge the economic losses in tourism due to Covid, and the likely economic gains from tourism in the post-Covid era.

## **1.1. Historical development of Hong Kong tourism**

Hong Kong has long been a very popular tourist destination because of its status as a business and transportation hub in Asia-Pacific. Hong Kong had been the top tourist destination in terms of tourist expenditure in the Far East and Pacific Region in 1958 and in 1979 (Lin & Sung 1983: Table 5). Growth continued to be robust in the 1980's and 1990's due to the surge of tourists from Japan, and then from ASEAN and from Taiwan. Starting around 2000, tourists from the Mainland soared due to its rapid economic growth and subsequent liberalization of outbound tourism.

A key milestone in liberalization was the institution of the Individual Visit Scheme (IVS) in mid-2003, which allowed Mainlanders to visit Hong Kong and Macau in their individual capacity instead of joining group tours. IVS tourists have been the fastest growing component of Hong Kong tourism. Many IVS tourists came to Hong Kong for shopping. They buy not only luxury goods but also daily items such as infant formula and over-the-counter drugs, as they have more confidence in quality of goods in Hong Kong. Due to the surge of Mainland visitors, Hong Kong was ranked as the world's most visited city for eight successive years from 2011 to 2018 in the Euromonitor International's annual survey.<sup>1</sup>

Unfortunately, the very rapid growth of Mainland visitors led to severe overcrowding, generating a lot of social conflicts between Mainlanders and locals, who tend to regard mainland visitors as country bumpkins. These social and cultural conflicts have been a popular research topic.<sup>2</sup>

Figure 1 shows the number of visitors from the Mainland and also from all countries. Mainland visitors grew from 3.8 million in 2000 to over 47 million in 2014, growing 12.5 times. In the same period, its share of total visitor arrivals grew from 29% to over 78%.

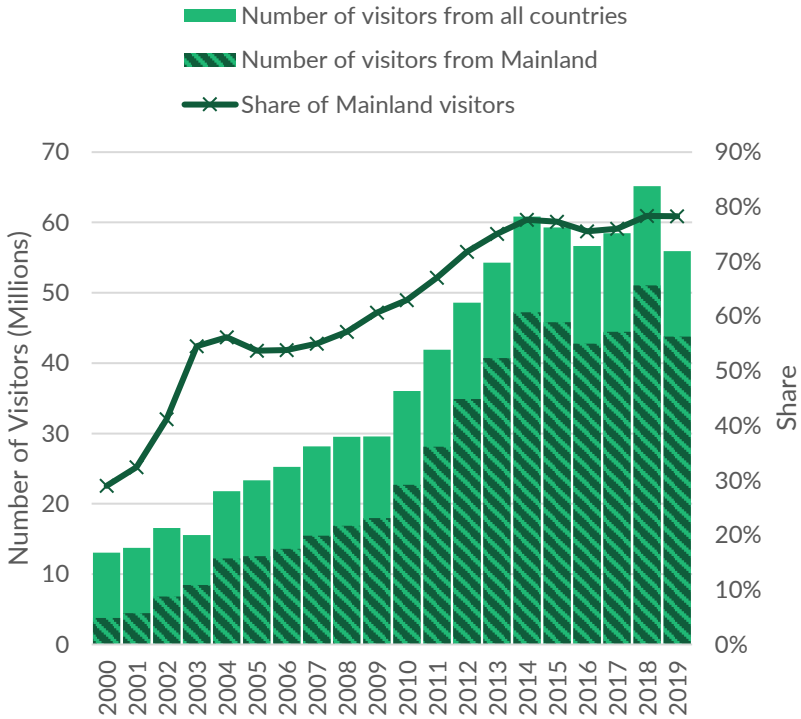
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<sup>1</sup> <https://www.scmp.com/magazines/style/travel-food/article/2181005/hong-kong-tops-worlds-most-visited-cities-2018-which>

<sup>2</sup> See, for example, Tolkach, D., Pratt, S., & Zeng, C. Y. (2017), Zhang, C. X., Decosta, P. L. E., & McKercher, B. (2015), Piuchan, M., Chan, C. W., & Kaale, J. (2018), and Shen, H., Li, X., Luo, J. M., & Chau, K. Y. (2017).



Figure 1: Number of visitors: From Mainland and from all countries (2000 to 2019)



Source: *A Statistical Review of Hong Kong Tourism 2019*, Hong Kong Tourism Board.

The rapid growth of Mainland visitors was interrupted after 2014. There were two years of negative growth in 2015, and 2016, followed by a recovery in 2017 and 2018. Though the number of Mainland visitors reached a record high of 51 million in 2018, surpassing the 2014 peak, their total expenditure in 2018 was still less than that in 2014. The 2018 recovery was halted by the 2019 protests in Hong Kong and the subsequent Covid epidemic.

The decline of Mainland visitors from 2014 to 2017 can be attributed to three factors. First, severe social tensions between Mainland visitors and local residents tarnished the attractiveness of Hong Kong. Second, in

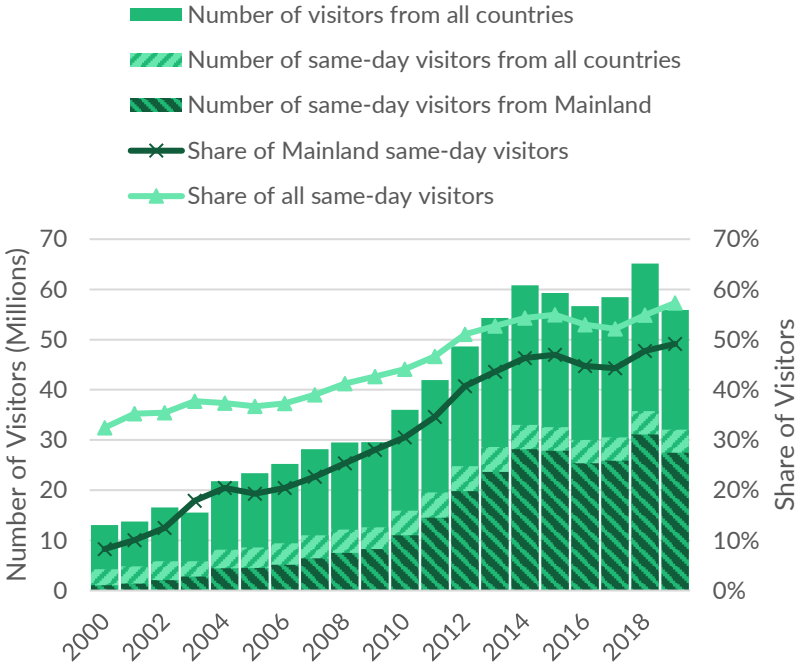
response to overcrowding and escalating tensions, Mainland authorities partially tightened its exit restrictions on visits to Hong Kong: Starting April 13, 2015, Shenzhen's 'M-Permit' (Multiple Entry Individual Visit Endorsements) that had allowed its permanent residents to visit Hong Kong for an unlimited number of times were superseded by "one trip per week" Individual Visit Endorsements. Third, the depreciation of the *Renminbi* and the slowdown of the Mainland economy since 2015 adversely affected Mainland's outgoing tourism.

## **1.2. Rise of same-day visitors**

The flexibility of IVS (as opposed to group tours) enabled many mainlanders who reside in areas near Hong Kong to come to Hong Kong for frequent same-day shopping trips, avoiding the high cost of staying in Hong Kong hotels. With the surge of IVS tourists, the share of Mainland Same-day visitors in total visitor arrival rose from 13% in 2000 to 49% in 2019. The rising proportion of same-day visitors tend to depress per capita visitor spending as same-day visitors usually spend less than overnight visitors.

Figure 2 shows that, from 2000 to 2014, the number of Mainland Same-day visitors grew from 1.1 million, or 8% of visitor arrivals to 28.2 million, or 46% of visitor arrivals, growing 26 times. In the same period, Non-Mainland Same-day visitors only grew slowly from 3.2 million to 5.1 million. In 2014, Same-day visitors from all countries were 33 million or 54% of all visitor arrivals. After 2014, the growth of Mainland Same-day visitors exhibited similar vicissitudes as that of Mainland visitors.

Figure 2: Number of visitors: Mainland Same-day visitors, all Same-day visitors, and all visitors (2000 to 2019)



Source: A Statistical Review of Hong Kong Tourism 2019, Hong Kong Tourism Board.

### 1.3. Purpose of this paper

Common measures of the economic benefits of tourism include tourist expenditure, value added, and employment generated. Table 1 shows official figures on tourist expenditure, and the contributions to value added and employment of inbound tourism annually since 2000. These three measures rose rapidly from 2003 to 2014 due to the explosive growth of visitors from the Mainland. In 2014, the share of inbound tourism in GDP (employment) reached a peak of 4.2% (6.4%). All three measures declined from 2014 to 2017 due the decline in Mainland visitors. The brief recovery in 2018 was followed by contraction in 2019, and near-collapse in the Covid era.

Table 1: Value added and employment generated by inbound tourism, and tourist expenditure (2000 to 2020)

Year	Value Added		Employment		Tourist Expenditure (\$ Million)
	(\$ Million)	Share of GDP	(Persons)	Share of Total Employment	
2000	21,300	1.7%	87,700	2.7%	63,915
2001	19,800	1.6%	91,000	2.8%	61,797
2002	25,300	2.0%	115,800	3.6%	76,821
2003	20,300	1.7%	114,900	3.6%	70,235
2004	28,400	2.2%	128,600	3.9%	91,850
2005	32,900	2.4%	136,800	4.1%	105,986
2006	36,200	2.5%	144,900	4.2%	120,715
2007	41,300	2.6%	160,000	4.6%	142,250
2008	37,100	2.3%	161,200	4.6%	157,836
2009	40,300	2.5%	163,600	4.7%	162,891
2010	59,200	3.4%	187,800	5.4%	212,224
2011	72,100	3.8%	206,400	5.8%	258,723
2012	79,100	3.9%	219,200	6.0%	289,362
2013	89,000	4.2%	238,300	6.4%	330,922
2014	93,600	4.2%	240,000	6.4%	359,039
2015	93,100	4.0%	233,400	6.2%	329,382
2016	89,600	3.7%	226,500	6.0%	293,702
2017	92,100	3.6%	225,100	5.9%	297,471
2018	98,300	3.6%	226,400	5.8%	331,665
2019	75,500	2.8%	199,300	5.1%	256,217
2020	5,000	0.2%	22,500	0.6%	N/A

Source: Data for tourist expenditure come from *Tourism Expenditure Associated to Inbound Tourism*, Hong Kong Tourism Board, various issues. Other data come from *Table 188: Value Added and Employment in Respect of the Four Key Industries of Census and Statistics Department*, Hong Kong.

Tourist expenditure is greater than value added due to leakage: Part of tourist expenditure in Hong Kong goes to imported goods which generate value added overseas rather than domestically. The tourist industry may use imports directly (e.g., tourist shopping of imported goods) or indirectly (e.g., imported oil that goes into electricity generation for hotels). As Hong Kong is a small open economy that is highly import-dependent, tourist expenditure vastly overstates value added for Hong Kong. For example, in 2018, value added of \$98,300 million was only 28.6% of tourist expenditure of \$331,665 million. As a measure of economic benefits, value added is much better than expenditure.

Benefits of inbound tourism arise from two groups of international passengers, namely, Visitors and Non-visitors. Non-visitors include servicemen, aircrew, and transit/transfer passengers. Unfortunately, the disaggregation of contributions of inbound tourism to value added and employment into those from Visitors vs. Non-visitors are not available from official sources.

The main purpose of this paper is as follows:

1. To disaggregate contributions to value added and employment of inbound tourism into those from Visitors vs. Non-Visitors. As will be seen from our results, Visitors accounted for over 90% of the contributions.
2. To further disaggregate the contributions of Visitors into the following four components:
  - a. Contributions by Mainland visitors versus those by non-Mainland visitors, and
  - b. Contributions by same-day visitors versus those by overnight visitors.

## 1.4. Advancements over author's previous papers on Hong Kong tourism

This paper is an update and extension of the author's two previous papers (Sung 2014 and Sung et. al. 2015) on Hong Kong tourism that pioneered the disaggregation of the contributions to value added and employment of tourism by different types of visitors. The second paper, which is an extension of the first, estimated the contributions to value added and employment of Mainland vs. Non-Mainland, and IVS vs. Non-IVS visitors from 2007 to 2013.<sup>3</sup>

Unfortunately, both papers ignore the existence of Non-visitors, and all the contributions of inbound international passengers were attributed to Visitors as a result of this mistake. In reality, the contributions of Visitors should be a few percent less than those of inbound tourism due to the presence of Non-visitors. This error led to slight upward biases in all of the estimates. This paper corrects for this error, and it also extends the estimates from 2013 to 2019.

Instead of the focus on IVS vs. Non-IVS visitors in the previous two papers, this paper focuses on Same-day vs. Overnight visitors because the data for the 'IVS vs. non-IVS' disaggregation are no longer available after 2013.<sup>4</sup> However, data for the 'Same-day vs. Overnight' disaggregation are available throughout 2007 to 2019. While the 'Same-day vs. Overnight' categorization is not exactly the same as that of 'IVS vs. non-IVS', the former categorization also has important policy implications, as will be seen later.

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<sup>3</sup> The second paper also estimated the contributions of 'M-Permit' visitors. As 'M-Permit' was discontinued in April 2015, it is no longer a policy issue.

<sup>4</sup> Specifically, we need data on the distribution of the expenditure of IVS visitors over different economic sectors. This data is not available after 2013.

The previous two papers rely on the yardstick of *per capita* contributions to compare the benefits of different types of visitors. This paper introduces the yardstick of *per capita per day* contributions to supplement the previous yardstick. Though visitors who stay longer spend more, they also generate more congestion, on the assumption that congestion is proportional to length of stay. For cost-benefit comparisons, per capita per day contributions are the preferred yardstick.

## **1.5. Disaggregation of economic benefits by types of visitors: Policy relevance**

Disaggregation by types of visitors enables us to compare the contributions of Mainland versus Non-Mainland visitors, as well as the contributions of Same-day versus Overnight visitors. Such comparisons have important policy implications.

### **1.5.1. Mainland versus Non-Mainland visitors**

Besides overcrowding and social conflicts between Mainland visitors and locals mentioned above, over-dependence on one market, namely the Mainland, and over-concentration in one tourist product, namely shopping, is likely to be risky. The predominance of Mainland visitors may also crowd out visitors from other countries, as the Hong Kong tourism industry increasingly orientates itself to the culture and taste of Mainland visitors. As a result, the Hong Kong Tourism Board (henceforth *HKTB*) has devoted the bulk of its resources to attract visitors from the international market instead of the Mainland market (CEDB 2013: 44 footnote 17).

In terms of spending in Hong Kong (henceforth *Destination Spending*), official figures of HKTB show that the per capita Destination Spending of Mainland visitors has exceeded that of Non-Mainland visitors. However, previous works of the author showed that the per capita value added of

Mainland visitors were less than that of Non-Mainland visitors from 2007 to 2013 as the former spend relatively more (less) on low (high) value added items (Sung 2014: 29 and Sung et. al. 2015: 29). This paper will revisit previous works with more rigorous methodology and also extend the estimates to 2019.

### **1.5.2. *Same-day versus Overnight visitors***

The government has stressed the need to attract overnight visitors instead of same-day visitors (CEDB 2013: 40, 44) as the latter usually spends less. The rationale for this official policy is taken as self-evident and has not been carefully explained. While it is obvious that overnight visitors tend to stay longer and spend more than same-day visitors, staying longer also generates more costs to Hong Kong in terms of congestion and overcrowding. Instead of comparing overnight and same-day visitors in spending per capita, it is better to compare the two in spending per capita per day. For instance, official figures on per capita Destination Spending (spending in Hong Kong) of Mainland Overnight visitors in 2018 was \$7,029, while that of Mainland Same-day visitors was only \$2,410. However, once we switch to Destination Spending per capita per day, the figure for Mainland Overnight visitors was reduced to \$2,343, which was slightly less than the \$2,410 of Mainland Same-day visitors. Once we switch the measure to per capita per day, the benefit of overnight visitors over same-day visitors is not self-evident. The best yardsticks for comparisons, which will be estimated in this paper, are contributions to value added and employment per capita per day of Mainland vs. Non-Mainland, and Overnight vs. Same-day visitors.



### **1.5.3. Policy exercises involving changes in composition of types of visitors**

The disaggregation also provides the basic data to estimate changes in economic benefits arising from changes in the composition of types of visitors. This paper will estimate the changes in economic benefits from the following two events:

1. To ease congestion and overcrowding, M-Permits for Mainland visitors were suspended in April 2015 to discourage same-day visitors from the Mainland. The economic losses for Hong Kong in terms of loss in value added and employment can easily be estimated with the data obtained from the above disaggregation by different types of visitors.
2. In the last quarter of 2022, Hong Kong is rapidly phasing out its Covid restrictions for overseas visitors. This would lead to a faster recovery of Non-Mainland visitors relative to Mainland visitors as the Mainland still adheres to stringent Covid measures with strict controls on outgoing travel. The economic gains for Hong Kong can be estimated with our data obtained from the above disaggregation.

### **1.6. Organization of this paper**

This paper is organized as follows. Besides the Introduction, Section 2 covers the methodology and results of disaggregation of economic contributions by types of visitors. Section 3 compares the economic benefits by types of visitors in terms of visitors' expenditure, value added, and employment generated. Section 4 covers two simple policy exercises, namely, estimation of economic losses from the suspension of 'M-Permits', and estimation of economic gains from a partial recovery in tourism due to the relaxation of Covid travel restrictions. Section 5 covers the potential biases and limitations of this paper, and Section 6 concludes.

## 2. Disaggregation of Contributions: Methodology and Results

The definition of “tourist industry” is problematic because most tourist enterprises are available also to local residents, and many tourists purchase goods and services from enterprises which predominantly cater to the needs of local residents (e.g., shops or retail trade). In standard mainstream models, the tourist industry is defined from the viewpoint of tourist spending. Tourists spend on many different industries, e.g., hotels, taxis, and retail trade. The tourist industry is treated as a weighted average of outputs of these industries, where the weights are the expenditures on the industries involved. Given the distribution of tourist expenditure on these industries, and data on the value added (employment generated) per dollar of expenditure for each industry, the computation of tourism’s contributions to value added (employment) is straightforward.

In Algebra, assume tourists spend on industries numbered from 1 to  $n$ .  $V$  (the value added generated by tourism) =  $(v) \times (e)$ , where

$(v)$  is a  $(1 \times n)$  row vector where  $v_i$  is the rate of value added (i.e., value added per dollar spending) in industry  $i$

$(e)$  is a  $(n \times 1)$  column vector where  $e_i$  is tourists’ expenditure on industry  $i$

Similarly,  $E$  (the employment generated by tourism) =  $(m) \times (e)$ , where

$(m)$  is a  $(1 \times n)$  row vector where  $m_i$  is employment created per dollar expenditure in industry  $i$

We apply the above formulae to estimate the value added and employment generated by different types of visitors. For each type of visitors, we first

estimate the distribution of their expenditure on different industries, i.e., (e), and then estimate the value added and employment generated per dollar of their spending, i.e., (v) and (m) .

## **2.1 Estimating the expenditures of different types of visitors**

Though the total expenditure of international passengers related to inbound tourism are available in official statistics (see Table 1), statistics on expenditure of different types of visitors are very patchy. For brevity, we show the official statistics on tourist expenditure in only one year, that in 2018 when tourist arrivals reached a historical peak (Table 2). There are a lot of empty cells in the Table, which means official statistics on tourist expenditure for many types of inbound international passengers are not available. The pattern for other years is similar. We need to provide estimates for all the empty cells.

Table 2 shows that expenditure associated with inbound tourism include the expenditures of Visitors and Non-visitors. Tourist expenditure include spending in Hong Kong (what is called 'Destination Spending'), and spending outside Hong Kong on cross-boundary transportation into Hong Kong. For example, spending on a flight to Hong Kong usually takes place outside Hong Kong, but part of that spending accrues to Hong Kong in the form of airport charges and/or airfare (if the flight is operated by a Hong Kong carrier).

HKTB publishes statistics on the total Destination Spending of Visitors as well as Non-visitors. Non-visitors (which include aircrew, servicemen, and transit/transfer passengers) accounted for only a small part of Destination Spending: \$4,018 million out of \$276,445 million in 2018 (Table 2), or only 1.5% of the total, while Visitors accounted for all of the rest. This is expected as aircrew and servicemen are not very numerous, and transit/transfer passengers do not spend much during their brief stay at the airport.

Table 2: Tourist expenditure in 2018: Official statistics (\$ million)

Type of Expenditure	Inbound International Passengers											
	Visitors									All Visitors	Non-visitors	All Inter'l Passengers
	Overnight		Same-Day		Overnight and Same-Day Visitors	Cruise-in/ Cruise-out		Cruise-in/ Cruise-out Visitors				
	Main-land	Non-mainland	Main-land	Non-mainland		Main-land	Non-mainland					
<b>Total Expenditure</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	331,665	
Destination Spending	139,900	53,650	74,917	3,844	272,312	N/A	N/A	114	272,426	4,018	276,445	
Retail Trade	85,203	13,600	66,349	1,972	167,125	N/A	N/A	N/A	N/A	N/A	N/A	
Accom.*	21,351	20,185	397	68	42,002	N/A	N/A	N/A	N/A	N/A	N/A	
Food Services	18,369	10,165	3,356	612	32,502	N/A	N/A	N/A	N/A	N/A	N/A	
Others	14,977	9,700	4,814	1,191	30,683	N/A	N/A	N/A	N/A	N/A	N/A	
CBT*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	55,220	

\* Note: 'Accom.' refers to Accommodation and 'CBT' refers to Cross-boundary Transportation.

Source: *Tourism Expenditure Associated to Inbound Tourism 2019*, Hong Kong Tourism Board.

In Table 2, Visitors are divided into 'Overnight visitors', 'Same-day visitors', and 'Cruise-in/Cruise-out passengers'.<sup>5</sup> HKTB conducts spending surveys on the first two groups but not on the last group. 'Cruise-in/Cruise-out' passengers cannot be easily classified as Overnight or Same-day visitors.<sup>6</sup> As a result, their expenditures are reported separately from those of Overnight or Same-Day visitors.

From survey data, the Destination Spending of 'Overnight visitors' and 'Same-day visitors' can be disaggregated into spending on four sub-sectors, namely, Retail Trade, Accommodation, Food Services, and Others (Table 2). For international passengers not surveyed, namely, 'Cruise-in/Cruise-out passengers' and Non-visitors, breakdowns of Destination Spending on the four subsectors are not available. As a result, such breakdowns are also not available for 'all visitors', and 'all international passengers'.

Table 2 indicates that a large part of the destination spending of 'Overnight and Same-day Visitors' was on Retail Trade (\$ 167,125 million in 2018, or 61% of total Destination Spending). This shows that shopping is the prime attraction in Hong Kong tourism.

Henceforth, for simplicity, the four subsectors in Destination spending will be referred to as '*the four subsectors*'. The four subsectors, plus Cross-boundary Transportation, will be referred to as '*the five sub-industries*'.

The total spending on Cross-boundary Transportation of all inbound international passengers was \$55,200 million in 2018. This was estimated by the Census and Statistics Department. The estimate is based on the

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<sup>5</sup> Cruise-in / Cruise-out passengers are defined as those who both arrive and depart on the same cruise vessel. Tourism Expenditure arising from "Cruise in / Other mode out Passengers" and "Other mode in / Cruise out Passengers" are included as Overnight visitors or Same-day In-town visitors.

<sup>6</sup> Their stay in Hong Kong is usually short, but it may straddle 2 or even more days.

number of passengers by land, by sea, and by air; estimates of fares they paid, and what portions of those fares accrue to Hong Kong. Adding this to \$276,445 million of destination spending, the total expenditure of inbound international passengers was 331,665 million.

Unfortunately, the disaggregation of total Cross-boundary Transportation spendings into those of Visitors versus Non-visitors are not available in official statistics. There is thus no official statistics on the total expenditure of Visitors vs. Non-Visitors.

## **2.2 Estimates of tourist expenditures by types of international passengers/visitors by sub-industries of tourism**

To estimate value added generated by different types of visitors, we first need to estimate the distribution of tourist expenditures on each of the five sub-industries by types of visitors. For visitors surveyed by HKTB, the distribution of Destination Spending on the four sub-sectors are known. The only type of visitors not surveyed are 'Cruise-in/Cruise-out' passengers. Once we estimate the distribution of their Destination Spending of on the four subsectors, we will have complete data on distribution of Destination Spending for all types of visitors. However, we also need to estimate the breakdown of cross-boundary spending by types of visitors to obtain a complete picture of distribution of tourist expenditure by five sub-industries by types of visitors. The estimation is carried out in the following two steps.

**(1) *Disaggregation of cross-boundary transportation spending by types of visitors:***

The disaggregation is complicated as it involves data based on the number of types of passengers arriving by land, by sea, and by air; estimates of fares they paid, and what portions of the fares accrue to Hong Kong. See Appendix for details.

**(2) *Distribution of Destination Spending of 'Cruise-in/Cruise-out' passengers by sub-sectors:***

Cruise passengers do not spend on local accommodation as they stay on ships. We assume that the shares of their spending on the other three subsectors (Retail Trade, Food Services, and Others) are based on those of surveyed visitors, but the shares are scaled up proportionally to sum to unity.<sup>7</sup>

The estimated distribution of tourist expenditure of 'Cruise-in/Cruise-out' passengers on the five sub-industries in 2018 are shown in Table 3. With the estimates from cruise passengers, the distribution of tourist expenditure by sub-industries for all Visitors are known, and the corresponding data for Non-visitors are obtained as residuals in Table 3.

Tourist expenditures of 'Cruise-in/Cruise-out' passengers and Non-visitors were small: Respectively \$125 million and \$24,166 million in 2018, or 0.04% and 7.3% of that of all international passengers.

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<sup>7</sup> The following is a simple numerical example: For surveyed visitors, the share of spending on accommodation is 0.4, and the shares of the other three subsectors are each 0.2. The total of four shares sum to unity, while the total of the other 3 subsectors sum to 0.6 or (3/5). For 'Cruise-in/Cruise-out' passengers, the shares of each subsector of the other 3 subsectors would then be 0.33, which is 0.2 scaled up by a factor of 1.66 or (5/3).

Table 3: Tourist expenditure in 2018: Official statistics plus our estimate (\$ million)

Type of Expenditure	Inbound International Passengers										
	Visitors									Non-visitors	All Inter'l Passengers
	Overnight		Same-Day		Overnight and Same-Day Visitors	Cruise-in/ Cruise-out		Cruise-in/ Cruise-out Visitors	All Visitors		
	Mainland	Non-mainland	Mainland	Non-mainland		Mainland	Non-mainland				
<b>Total Expenditure</b>	151,864	68,477	75,877	11,155	307,373	70	55	125	307,498	24,166	331,665
Destination Spending	139,900	53,650	74,917	3,844	272,312	65	49	114	272,426	4,018	276,445
Retail Trade	85,203	13,600	66,349	1,972	167,125	56	27	83	167,208	2,770	169,978
Accom.*	21,351	20,185	397	68	42,002	0	0	0	42,002	201	42,203
Food Services	18,369	10,165	3,356	612	32,502	5	11	16	32,518	539	33,057
Others	14,977	9,700	4,814	1,191	30,683	4	11	15	30,698	509	31,207
CBT*	11,964	14,827	960	7,311	35,061	5	6	11	35,072	20,148	55,220

\* Note: 'Accom.' refers to Accommodation and 'CBT' refers to Cross-boundary Transportation.

Source: See Table 2. Data in italics come from author's estimates (see text)



The number of 'Cruise-in/Cruise-out' passengers arrivals by nationality (Mainland vs. Non-Mainland) is available from HKTB: In 2018, 43.7% of them were Mainland passengers. However, HKTB does not have data on the disaggregation of their expenditure by nationality (Mainland vs. Non-Mainland) as they were left out of the expenditure survey. To tackle this disaggregation, we simply assume that the amount and distribution of their per capita expenditure are the same across different nationalities, which means the expenditures of Mainland and Non-Mainland cruise passengers are proportional to their numbers.<sup>8</sup> With this assumption, the expenditures of Mainland and Non-Mainland cruise passengers are estimated to be \$70 million and \$55 million respectively (Table 3).<sup>9</sup>

### **2.3 Time frame of study**

The time frame of this study is limited by the availability of data. For same-day visitors, data on their expenditure by sub-industries were only available from 2007 onwards.<sup>10</sup> Such data are needed for estimation of visitors' contributions to value added and employment. Most of the estimates of this paper will thus go from 2007 to 2019. However, our discussion of number of tourists by types of visitors goes from 2000 to 2019 as these data are available much earlier. Our discussion of tourist expenditure by types of visitors goes from 2002 to 2019, as 2002 was the first year that such data were available.

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<sup>8</sup> The assumption is crude, but variations in per capita expenditures by nationality have negligible effects on our overall estimates because the total expenditure of 'Cruise-in/Cruise-out' passengers relative to that of inbound tourism was very small (only 0.04% in 2018).

<sup>9</sup> In subsequent discussions in this paper, the expenditures of Mainland and Non-Mainland visitors include those of 'Cruise-in/Cruise-out' passengers. This is not the case in official statistics which have no breakdowns of the expenditures of 'Cruise-in/Cruise-out' passengers by nationality.

<sup>10</sup> For Same-day visitors, spending surveys are not done before 2007. Their distributions of Destination Spending on the four sub-sectors were not available.

## **2.4 Estimates of visitors' expenditure by types of visitors by sub-industries**

Tables 4 shows visitors' expenditure by types of visitors (Mainland, Non-Mainland, Overnight, and Same-day) by sub-industries of tourism. For brevity, we only show data for three selected years, namely 2014, 2018, and 2019. 2014 was the year when tourism value added peaked relative to GDP, while 2018 was the year when the absolute amount of tourism value added peaked. 2019 was the last year for which data were available.

The share of Retail Trade in the expenditure of Mainland visitors vastly exceeded that of Non-Mainland visitors. In 2014, Retail Trade accounted for 67.5% (91.3%) of the expenditure of Mainland Overnight (Same-day) visitors, while the corresponding figure for Non-mainland Overnight (Same-day) visitors was only 25.2% (20.1%).

In contrast, the shares of Accommodation and Cross-boundary Transportation of Non-Mainland visitors (respectively 24.5% and 25.6% in 2014) vastly exceeded those of Mainland visitors (respectively 7.6% and 4.5% in 2014).

## **2.5 Rates of value added by sub-industries of tourism**

The Census and Statistics Department gives the value added and employment generated by 'all international passengers' for the five sub-industries every year. For brevity, we only show the data for 2018 (Table 5). For each sub-industry, dividing value added by expenditure of international passengers (estimated in Table 3) gives the rate of value added of that sub-industry for all international passengers.

Table 4: Visitors' expenditure by types of visitors by sub-industries of tourism (\$ million)

Yr	Type of Exp.	Overnight		Same-Day		Mainland	Non-Mainland	Overnight	Same-Day	All Visitors
		Mainland	Non-Mainland	Mainland	Non-Mainland					
2014	Retail	119,270	17,179	70,293	2,141	189,563	19,356	136,449	72,434	208,919
	Trade	(67.5%)	(25.2%)	(91.3%)	(20.1%)	(74.7%)	(24.5%)	(55.7%)	(82.6%)	(62.8%)
	Accom.*	18,913	20,888	252	47	19,166	20,935	39,801	300	40,100
		(10.7%)	(30.6%)	(0.3%)	(0.4%)	(7.6%)	(26.5%)	(16.3%)	(0.3%)	(12.1%)
	Food	15,778	9,129	2,373	425	18,151	9,559	24,907	2,798	27,710
	Services	(8.9%)	(13.4%)	(3.1%)	(4.0%)	(7.2%)	(12.1%)	(10.2%)	(3.2%)	(8.3%)
	Others	12,065	7,825	3,159	1,055	15,224	8,884	19,890	4,213	24,107
		(6.8%)	(11.5%)	(4.1%)	(9.9%)	(6.0%)	(11.2%)	(8.1%)	(4.8%)	(7.2%)
	CBT*	10,608	13,234	885	7,010	11,493	20,247	23,841	7,895	31,740
	(6.0%)	(19.4%)	(1.2%)	(65.6%)	(4.5%)	(25.6%)	(9.7%)	(9.0%)	(9.5%)	
Total	176,635	68,254	76,962	10,678	253,597	78,980	244,889	87,639	332,577	
	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	
2018	Retail	85,203	13,600	66,349	1,972	151,608	15,599	98,804	68,321	167,208
	Trade	(56.1%)	(19.9%)	(87.4%)	(17.7%)	(66.6%)	(19.6%)	(44.8%)	(78.5%)	(54.4%)
	Accom.*	21,351	20,185	397	68	21,749	20,253	41,536	466	42,002
		(14.1%)	(29.5%)	(0.5%)	(0.6%)	(9.5%)	(25.4%)	(18.9%)	(0.5%)	(13.7%)
	Food	18,369	10,165	3,356	612	21,730	10,788	28,534	3,969	32,518
	Services	(12.1%)	(14.8%)	(4.4%)	(5.5%)	(9.5%)	(13.5%)	(12.9%)	(4.6%)	(10.6%)
	Others	14,977	9,700	4,814	1,191	19,795	10,903	24,677	6,006	30,698
		(9.9%)	(14.2%)	(6.3%)	(10.7%)	(8.7%)	(13.7%)	(11.2%)	(6.9%)	(10.0%)
	CBT*	11,964	14,827	960	7,311	12,928	22,144	26,791	8,270	35,072
	(7.9%)	(21.7%)	(1.3%)	(65.5%)	(5.7%)	(27.8%)	(12.2%)	(9.5%)	(11.4%)	
Total	151,864	68,477	75,877	11,155	227,811	79,687	220,342	87,032	307,498	
	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	
2019	Retail	55,469	10,196	53,664	1,934	109,199	12,151	65,665	55,598	121,351
	Trade	(52.1%)	(19.5%)	(87.7%)	(18.5%)	(65.1%)	(19.4%)	(41.3%)	(77.6%)	(52.6%)
	Accom.*	15,649	14,973	192	67	15,842	15,039	30,622	259	30,881
		(14.7%)	(28.7%)	(0.3%)	(0.6%)	(9.4%)	(24.0%)	(19.3%)	(0.4%)	(13.4%)
	Food	14,337	8,128	2,961	564	17,306	8,703	22,465	3,525	26,009
	Services	(13.5%)	(15.6%)	(4.8%)	(5.4%)	(10.3%)	(13.9%)	(14.1%)	(4.9%)	(11.3%)
	Others	11,747	7,696	3,587	1,246	15,341	8,953	19,443	4,833	24,293
		(11.0%)	(14.7%)	(5.9%)	(11.9%)	(9.1%)	(14.3%)	(12.2%)	(6.7%)	(10.5%)
	CBT*	9,351	11,261	818	6,638	10,176	17,904	20,612	7,456	28,080
	(8.8%)	(21.6%)	(1.3%)	(63.5%)	(6.1%)	(28.5%)	(13.0%)	(10.4%)	(12.2%)	
Total	106,554	52,254	61,222	10,449	167,864	62,750	158,807	71,671	230,613	
	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	(100%)	

\* Note: 'Accom.' refers to Accommodation and 'CBT' refers to Cross-boundary Transportation.

Source: Author's estimates (see text).

Table 5: Value added and Employment of inbound tourism by sub-industries in 2018

Sub-industries	Value Added		Employment	
	(\$ Million)	Share of GDP	(Persons)	Share of Total Employment
<b>Retail Trade</b>	27,400	1.0%	100700	2.6%
<b>Accommodation</b>	25,800	1.0%	37300	1.0%
<b>Food Services</b>	12,800	0.5%	50100	1.3%
<b>Others</b>	14,100	0.5%	24100	0.6%
<b>Cross-Boundary Transportation</b>	18,100	0.7%	14200	0.4%
<b>Total</b>	98,300	3.6%	226400	5.8%

Source: Table 188: Value Added and Employment in Respect of the Four Key Industries of Census and Statistics Department, Hong Kong.

Table 6 shows the rate of value added of the expenditure of inbound tourism by the five sub-industries from 2007 to 2019. The variations in the rates of value added over time were not large. The rate of value added of tourism fluctuated from 0.25 to 0.31 in the period.

Throughout this period, the rates of value added of Accommodation (from 0.56 to 0.66) were the highest and those of Retail Trade (from 0.15 to 0.17) were the lowest. The former were more than three times the latter. As a result, the overall rate of value added was higher for international passengers who spent relatively more on Accommodation (e.g., Non-Mainland visitors and Overnight visitors), and the rate was lower for those who spent relatively more on Retail Trade (e.g., Mainland visitors and Same-day visitors).

Table 6: Rate of value added of inbound tourism by 'five sub-industries'

Year	Destination Spending					CBT	Total
	Retail Trade	Accom.*	Food Services	Others	Subtotal		
2007	0.172	0.617	0.379	0.445	0.305	0.252	0.298
2008	0.170	0.616	0.394	0.422	0.298	0.061	0.264
2009	0.155	0.589	0.375	0.437	0.260	0.211	0.253
2010	0.149	0.632	0.377	0.438	0.269	0.321	0.276
2011	0.166	0.662	0.382	0.426	0.293	0.220	0.285
2012	0.163	0.653	0.393	0.426	0.285	0.218	0.278
2013	0.166	0.648	0.386	0.423	0.275	0.237	0.272
2014	0.147	0.650	0.386	0.427	0.259	0.274	0.260
2015	0.158	0.639	0.387	0.442	0.271	0.349	0.279
2016	0.168	0.634	0.392	0.447	0.292	0.372	0.301
2017	0.172	0.619	0.388	0.448	0.302	0.352	0.308
2018	0.161	0.611	0.387	0.452	0.290	0.328	0.295
2019	0.166	0.557	0.380	0.443	0.286	0.333	0.292
<b>Average</b>	0.163	0.625	0.385	0.437	0.283	0.271	0.281

\* Note: 'Accom.' refers to Accommodation and 'CBT' refers to Cross-boundary Transportation.

Source: Author's estimates (see text).

## 2.6 Rates of value added by types of international passengers and visitors

For each sub-industry, we assume that its rate of value added is the same for all types of international passengers (Visitors and Non-visitors), and it is also the same for all types of visitors (Overnight, Same-day, Cruise-in/Cruise out, Mainland, and Non-Mainland). This simplifying assumption may not be realistic, but we do not have the data for more sophisticated

refinements.<sup>11</sup>

For different types of visitors, though the rate of value added for each sub-industry is the same, the distributions of visitors' expenditures over the five sub-industries are different. The value added per dollar of expenditure for different types of visitors are thus different. Table 7 shows the rate of value added of visitors' expenditure by different types of visitors from 2007 to 2019.

Mainland visitors' expenditures are heavily weighted towards Retail Trade, while Overnight visitors spend relatively more on Accommodation. As a result, the rates of value added of the expenditure of Non-Mainland visitors (ranging from 0.3 to 0.4) were higher than those of Mainland visitors (ranging from 0.22 to 0.27), and the rates for Overnight visitors (ranging from 0.29 to 0.34) were higher than those of Same-day visitors (ranging from 0.17 to 0.22).

If we divide visitors into four types, namely, Non-Mainland Overnight, Non-Mainland Same-day, Mainland Overnight, and Mainland Same-day, and compare the rates of value added of their expenditures, then Non-Mainland Overnight visitors ranked the highest while Mainland Same-day visitors ranked the lowest. The rates of Non-Mainland Same-day visitors and Mainland Overnight visitors were in the middle.

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<sup>11</sup> This simplifying assumption may not be entirely realistic. For example, it has been observed that Mainland visitors tend to stay in economy hotels/guesthouses, while western visitors tend to stay in luxury hotels. The rate of value added of different types of hotels may not be identical. However, there is no data for a finer gradation. This simplifying assumption also applies to the amount of employment generated per dollar of tourist expenditure.

Table 7: Rate of value added of visitors' expenditure by types of visitors

Year	Overnight		Same-Day		Mainland	Non-Mainland	Overnight	Same-Day	All Visitors
	Mainland	Non-Mainland	Mainland	Non-Mainland					
2007	0.258	0.367	0.201	0.251	0.247	0.354	0.312	0.219	0.298
2008	0.249	0.325	0.193	0.115	0.236	0.298	0.285	0.168	0.264
2009	0.229	0.332	0.179	0.221	0.218	0.314	0.269	0.191	0.253
2010	0.245	0.367	0.172	0.290	0.229	0.356	0.293	0.203	0.276
2011	0.267	0.376	0.190	0.231	0.249	0.356	0.306	0.199	0.285
2012	0.263	0.385	0.184	0.233	0.242	0.366	0.303	0.192	0.278
2013	0.260	0.385	0.186	0.247	0.239	0.367	0.297	0.194	0.272
2014	0.249	0.390	0.169	0.270	0.225	0.373	0.288	0.182	0.260
2015	0.269	0.408	0.184	0.330	0.241	0.397	0.310	0.201	0.279
2016	0.290	0.417	0.199	0.346	0.262	0.407	0.330	0.220	0.301
2017	0.304	0.410	0.204	0.335	0.274	0.400	0.337	0.223	0.308
2018	0.294	0.405	0.194	0.317	0.260	0.392	0.328	0.210	0.295
2019	0.297	0.388	0.196	0.319	0.260	0.376	0.327	0.214	0.292
<b>Average</b>	0.267	0.381	0.189	0.270	0.245	0.366	0.307	0.201	0.281

Source: Author's estimates (see text).

Interestingly, the rates of Mainland Overnight visitors were higher than those of Non-Mainland Same-day visitors from 2007 to 2013, but the ranking was reversed since 2014. Comparing Mainland Overnight visitors and Non-Mainland Same-day visitors, the former spends relatively more on Accommodation (which has the highest rate of value added), but also spends relatively more on Retail Trade (which has the lowest rate of value added). As a result, the ranking of these two types of visitors by the rate of value added is ambiguous.

## **2.7 Estimates of employment generated**

Estimates of employment generated are analogous to estimates of value added. For convenience in presenting estimated results, we compute employment generated per million dollars of expenditure instead of per dollar, because the amount of employment generated (in persons employed) per dollar of expenditure is very small. Henceforth, we refer to the amounts of employment generated per million dollars of expenditure as employment coefficients for brevity. We assume that the employment coefficients of the five sub-industries are the same across different types of ‘international passengers’ (visitors and non-visitors), and they are also the same across different types of visitors. Again, this is a simplifying assumption due to lack of data for more sophisticated adjustments.<sup>12</sup> With this assumption, we can easily compute the contributions to employment of different types of visitors.

### **2.7.1 Employment coefficients by sub-industries of tourism**

Table 8 shows the employment coefficients (employment generated per million dollars expenditure) of the ‘five sub-industries’ from 2007 to 2019.

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<sup>12</sup> See previous footnote.



Employment coefficients generally decline over time: For example, for visitors' total expenditure, the coefficient declined from 1.246 in 2007 to 0.706 in 2018. The decline is due to two factors. First, inflation (rising price and wage levels) implies that, over time, one million dollars of expenditure would buy less real goods and services which would in turn require less labour to produce. Second, over time, there would also be technical progress that saves labour in production.

Table 8: Employment generated per million dollars of spending of inbound tourism by 'five sub-industries' (persons employed)

Year	Destination Spending					CBT	Total
	Retail Trade	Accom.	Food Services	Others	Subtotal		
<b>2007</b>	1.145	1.473	2.630	1.530	1.408	0.305	1.246
<b>2008</b>	1.035	1.362	2.468	1.394	1.280	0.278	1.135
<b>2009</b>	0.961	1.629	2.324	1.376	1.218	0.306	1.097
<b>2010</b>	0.785	1.355	2.233	1.112	1.042	0.272	0.950
<b>2011</b>	0.666	1.116	2.075	1.096	0.916	0.280	0.846
<b>2012</b>	0.619	1.032	1.989	0.982	0.845	0.298	0.792
<b>2013</b>	0.583	1.009	1.891	0.990	0.796	0.288	0.748
<b>2014</b>	0.526	0.994	1.830	0.903	0.739	0.264	0.694
<b>2015</b>	0.573	1.028	1.787	0.901	0.791	0.270	0.738
<b>2016</b>	0.674	1.032	1.705	0.857	0.868	0.298	0.805
<b>2017</b>	0.667	0.968	1.620	0.807	0.852	0.282	0.788
<b>2018</b>	0.589	0.879	1.510	0.769	0.764	0.255	0.706
<b>2019</b>	0.702	1.095	1.642	0.785	0.893	0.272	0.817
<b>Average</b>	0.733	1.152	1.977	1.039	0.955	0.282	0.874

\* Note: 'Accom.' refers to Accommodation and 'CBT' refers to Cross-boundary Transportation.

Source: Author's estimates (see text).

Among the five sub-industries, the ranking of employment coefficients are as follows: Food Services have the highest coefficients (ranging from 1.5 to 2.6); followed by Accommodation and 'Others', which tie for the second place (coefficients ranging from 0.77 to 1.6); followed by Retail Trade (coefficients ranging from 0.59 to 1.1); and Cross-boundary Transportation comes last (coefficients ranging from 0.26 to 0.31).

The above ranking is not surprising. Food Services are known to be labour intensive, while Cross-boundary spending involves air and rail transportation which are highly mechanized. The differences in the employment coefficients of the three sub-industries ranked in the middle (Accommodation, Retail Trade, and 'Others') were not very big, though Accommodation has slightly bigger coefficients than Retail Trade.

### **2.7.2 Employment coefficients by types of visitors**

For different types of visitors, as we have data on their distributions of expenditures, we can easily compute their employment generated. Table 9 shows the employment coefficients by types of visitors.

For comparison of the employment coefficients of different types of visitors, it is easier to look at the averages from 2007 to 2019 as the coefficients declined substantially over time. As expected, Overnight visitors have higher coefficients than Same-day visitors as the former spent more on Accommodation, which was moderately labour intensive. Within Overnight visitors, Non-Mainland visitors have slightly higher coefficients than Mainland visitors as the latter spent less on Accommodation, which was moderately labour intensive, and spent more on Retail Trade, which was less labour intensive. Within Same-day visitors, Mainland visitors have coefficients substantially higher than those of Non-Mainland visitors mainly because the latter spent more on Cross-boundary Transportation, which was least labour intensive.

Table 9: Employment generated per million dollars of visitors' spending by different types of visitors (persons employed)

Year	Overnight		Same-Day		Mainland	Non-Mainland	Overnight	Same-Day	All Visitors
	Mainland	Non-Mainland	Mainland	Non-Mainland					
2007	1.279	1.298	1.228	0.620	1.269	1.219	1.289	1.012	1.246
2008	1.171	1.184	1.107	0.575	1.157	1.107	1.177	0.941	1.135
2009	1.111	1.200	1.016	0.643	1.090	1.111	1.145	0.907	1.097
2010	0.960	1.051	0.839	0.538	0.933	0.981	0.995	0.761	0.950
2011	0.854	0.944	0.734	0.512	0.826	0.885	0.887	0.684	0.846
2012	0.799	0.906	0.674	0.492	0.766	0.855	0.835	0.645	0.792
2013	0.757	0.876	0.634	0.480	0.722	0.824	0.792	0.613	0.748
2014	0.703	0.836	0.580	0.446	0.666	0.783	0.740	0.564	0.694
2015	0.754	0.865	0.636	0.478	0.715	0.811	0.786	0.618	0.738
2016	0.826	0.880	0.730	0.508	0.796	0.829	0.843	0.699	0.805
2017	0.816	0.840	0.718	0.481	0.787	0.792	0.823	0.685	0.788
2018	0.733	0.765	0.639	0.442	0.702	0.719	0.743	0.614	0.706
2019	0.858	0.881	0.748	0.492	0.818	0.816	0.865	0.711	0.817
<b>Average</b>	0.894	0.963	0.791	0.516	0.865	0.903	0.917	0.727	0.874

Source: Author's estimates (see text).

The ranking of the employment coefficients of Mainland and Non-Mainland visitors is not clearcut *a priori*. On the one hand, Non-Mainland visitors spend more on accommodation and less on retail trade, which tends to boost their employment coefficients; on the other hand, they also spend more on Cross-boundary Transportation (the least labour intensive sub-industry), which tends to lower their employment coefficients. Empirically, for the 2007 to 2019 period, the average employment coefficient of Non-Mainland visitors was slightly higher than those of Mainland visitors.

## **2.8 Economic benefits by types of visitors by sub-industries**

Tables 10 and 11 respectively show the contributions (in absolute amounts) to value added and employment by different types of visitors by the five sub-industries of tourism. For brevity, we only report results for three selected years: 2014, 2018, and 2019. For all visitors, 2014 was the year when their shares of contributions to GDP and to employment peaked at 3.8% and 6.2% respectively. From 2014 to 2017, their economic contributions declined due to the stagnation in Mainland visitors. With recovery in the Mainland economy in 2018, their contributions to value added and employment reached new heights in absolute terms, but the shares to GDP and total employment declined to 3.2% and 5.6% respectively. 2019 was the last year that data was available.

Besides the contributions of visitors to value added/employment in absolute terms, Tables 10 and 11 also show respectively the shares of these contributions to total value added and employment in 3 of the 5 sub-industries, namely, Retail Trade, Accommodation, and Food Services. For example, in 2014, the contribution of all visitors to value added (employment) in the Accommodation sub-industry was \$26,054 million (39,877 persons employed), which accounted for 87.2% (94.5%) of the value added (employment) in Accommodation. Tourism plays a dominating role in the hotel industry, which is hardly surprising.

Table 10: Value added by types of visitors by sub-industries of tourism (\$ million)

Yr	Type of Exp.	Overnight		Same-Day		Mainland	Non-Mainland	Overnight	Same-Day	All Visitors
		Mainland	Non-Mainland	Mainland	Non-Mainland					
2014	Retail	17,587	2,533	10,365	316	27,951	2,854	20,120	10,680	30,805
	Trade	(19.4%)	(2.8%)	(11.4%)	(0.3%)	(30.8%)	(3.1%)	(22.2%)	(11.8%)	(34.0%)
	Accom.*	12,288	13,571	164	31	12,452	13,602	25,859	195	26,054
		(41.1%)	(45.4%)	(0.5%)	(0.1%)	(41.7%)	(45.5%)	(86.6%)	(0.7%)	(87.2%)
	Food	6,089	3,523	916	164	7,005	3,689	9,612	1,080	10,694
	Services	(12.5%)	(7.2%)	(1.9%)	(0.3%)	(14.3%)	(7.6%)	(19.7%)	(2.2%)	(21.9%)
	Others	5,156	3,344	1,350	451	6,505	3,796	8,499	1,800	10,301
		(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
	CBT*	2,905	3,624	242	1,920	3,148	5,545	6,530	2,162	8,693
	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	
Total	44,025	26,595	13,037	2,881	57,061	29,486	70,620	15,917	86,547	
	(1.9%)	(1.2%)	(0.6%)	(0.1%)	(2.5%)	(1.3%)	(3.1%)	(0.7%)	(3.8%)	
2018	Retail	13,735	2,192	10,695	318	24,439	2,515	15,927	11,013	26,953
	Trade	(15.6%)	(2.5%)	(12.1%)	(0.4%)	(27.7%)	(2.8%)	(18.0%)	(12.5%)	(30.5%)
	Accom.*	13,053	12,340	243	42	13,296	12,381	25,392	285	25,677
		(41.7%)	(39.4%)	(0.8%)	(0.1%)	(42.5%)	(39.6%)	(81.2%)	(0.9%)	(82.1%)
	Food	7,113	3,936	1,300	237	8,414	4,177	11,049	1,537	12,591
	Services	(11.8%)	(6.5%)	(2.2%)	(0.4%)	(14.0%)	(6.9%)	(18.3%)	(2.6%)	(20.9%)
	Others	6,767	4,383	2,175	538	8,944	4,926	11,150	2,714	13,870
		(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
	CBT*	3,921	4,860	315	2,396	4,238	7,258	8,782	2,711	11,496
	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	
Total	44,588	27,711	14,728	3,531	59,330	31,258	72,299	18,259	90,588	
	(1.6%)	(1.0%)	(0.5%)	(0.1%)	(2.1%)	(1.1%)	(2.5%)	(0.6%)	(3.2%)	
2019	Retail	9,204	1,692	8,905	321	18,121	2,016	10,896	9,226	20,137
	Trade	(12.6%)	(2.3%)	(12.2%)	(0.4%)	(24.9%)	(2.8%)	(15.0%)	(12.7%)	(27.7%)
	Accom.*	8,721	8,344	107	37	8,828	8,381	17,065	144	17,209
		(38.1%)	(36.5%)	(0.5%)	(0.2%)	(38.6%)	(36.6%)	(74.6%)	(0.6%)	(75.2%)
	Food	5,442	3,085	1,124	214	6,569	3,304	8,528	1,338	9,873
	Services	(10.3%)	(5.8%)	(2.1%)	(0.4%)	(12.4%)	(6.2%)	(16.1%)	(2.5%)	(18.6%)
	Others	5,200	3,406	1,588	551	6,790	3,963	8,606	2,139	10,753
		(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
	CBT*	3,112	3,748	272	2,209	3,387	5,959	6,861	2,482	9,346
	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	
Total	31,680	20,276	11,996	3,333	43,695	23,623	51,956	15,329	67,318	
	(1.1%)	(0.7%)	(0.4%)	(0.1%)	(1.5%)	(0.8%)	(1.8%)	(0.5%)	(2.4%)	

\* Note: 'Accom.' refers to Accommodation and 'CBT' refers to Cross-boundary Transportation. Bracketed figures represent percentage share in sub-industry's total value added.

Source: Author's estimates (see text).

Table 11: Employment generated by types of visitors by sub-industries of tourism (persons employed)

Yr	Type of Exp.	Overnight		Same-Day		Mainland	Non-Mainland	Overnight	Same-Day	All Visitors
		Mainland	Non-Mainland	Mainland	Non-Mainland					
2014	Retail	62,729	9,035	36,970	1,126	99,699	10,180	71,764	38,096	109,879
	Trade	(22.9%)	(3.3%)	(13.5%)	(0.4%)	(36.4%)	(3.7%)	(26.2%)	(13.9%)	(40.1%)
	Accom.*	18,808	20,771	251	47	19,059	20,818	39,579	298	39,877
		(44.6%)	(49.2%)	(0.6%)	(0.1%)	(45.2%)	(49.4%)	(93.8%)	(0.7%)	(94.5%)
	Food	28,881	16,710	4,343	778	33,224	17,497	45,591	5,121	50,721
	Services	(11.2%)	(6.5%)	(1.7%)	(0.3%)	(12.9%)	(6.8%)	(17.7%)	(2.0%)	(19.7%)
	Others	10,900	7,069	2,854	953	13,754	8,026	17,969	3,806	21,780
		(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
	CBT*	2,805	3,499	234	1,854	3,039	5,354	6,304	2,088	8,393
	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	
Total	124,123	57,085	44,652	4,757	168,775	61,874	181,208	49,409	230,649	
	(3.3%)	(1.5%)	(1.2%)	(0.1%)	(4.5%)	(1.7%)	(4.8%)	(1.3%)	(6.2%)	
2018	Retail	50,226	8,017	39,112	1,163	89,371	9,196	58,244	40,275	98,567
	Trade	(18.6%)	(3.0%)	(14.5%)	(0.4%)	(33.1%)	(3.4%)	(21.6%)	(14.9%)	(36.5%)
	Accom.*	18,769	17,744	349	60	19,119	17,804	36,514	409	36,923
		(42.3%)	(40.0%)	(0.8%)	(0.1%)	(43.1%)	(40.1%)	(82.3%)	(0.9%)	(83.2%)
	Food	27,728	15,344	5,066	924	32,802	16,285	43,072	5,991	49,087
	Services	(10.2%)	(5.7%)	(1.9%)	(0.3%)	(12.1%)	(6.0%)	(15.9%)	(2.2%)	(18.1%)
	Others	11,518	7,460	3,703	916	15,224	8,385	18,978	4,619	23,609
		(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
	CBT*	3,055	3,786	245	1,867	3,301	5,654	6,841	2,112	8,955
	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	
Total	111,297	52,351	48,475	4,930	159,817	57,324	163,649	53,405	217,141	
	(2.9%)	(1.3%)	(1.2%)	(0.1%)	(4.1%)	(1.5%)	(4.2%)	(1.4%)	(5.6%)	
2019	Retail	38,963	7,162	37,695	1,359	76,704	8,535	46,125	39,053	85,240
	Trade	(15.0%)	(2.8%)	(14.5%)	(0.5%)	(29.6%)	(3.3%)	(17.8%)	(15.1%)	(32.9%)
	Accom.*	17,140	16,398	210	73	17,350	16,471	33,538	283	33,822
		(41.3%)	(39.5%)	(0.5%)	(0.2%)	(41.8%)	(39.7%)	(80.7%)	(0.7%)	(81.4%)
	Food	23,547	13,349	4,864	927	28,424	14,294	36,897	5,790	42,718
	Services	(9.2%)	(5.2%)	(1.9%)	(0.4%)	(11.1%)	(5.6%)	(14.4%)	(2.3%)	(16.7%)
	Others	9,218	6,038	2,814	978	12,037	7,025	15,256	3,792	19,062
		(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
	CBT*	2,547	3,067	223	1,808	2,771	4,876	5,613	2,030	7,647
	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	
Total	91,414	46,015	45,806	5,143	137,286	51,201	137,429	50,949	188,487	
	(2.4%)	(1.2%)	(1.2%)	(0.1%)	(3.5%)	(1.3%)	(3.5%)	(1.3%)	(4.9%)	

\* Note: 'Accom.' refers to Accommodation and 'CBT' refers to Cross-boundary Transportation. Bracketed figures represent percentage share of sub-industry's total employment.

Source: Author's estimates (see text).

As expected, the contributions to value added and employment in Accommodation came mostly from Overnight visitors instead of Same-day visitors. Surprisingly, the contributions to value added in Accommodation from Non-Mainland visitors exceeded that from Mainland visitors in 2014 and 2018, even though the latter was 3.5 times as numerous as the former in those years. This was not solely because the share of Same-day visitors in Mainland visitors was relatively high. Even if we only look at Overnight visitors in 2014, the contributions of Non-Mainland visitors to value added in Accommodation still exceeded that of Mainland visitors, even though the former was only 45% as numerous as the latter. This again shows that Non-Mainland visitors spend much more on hotels than Mainland visitors.

Besides Accommodation, tourism is also very important for Retail Trade and Food Services. In 2014, the value added (employment) generated by all visitors in Retail Trade and Food Services were 34.0% (40.1%) and 21.9% (19.7%) of the respective sub-industry totals.

The contributions to value added and employment of Mainland visitors in Retail Trade were around 10 times of those of Non-Mainland visitors in 2014, 2018, and 2019. This shows that the spending of Mainland visitors is highly skewed towards Retail Trade.

For the remaining two sub-industries in Tables 10 and 11, namely 'Others' and 'Cross-boundary Transportation', we only reported the absolute amounts of visitors' contributions to value added and employment. We did not report the share of visitors' contributions to the industry totals for the simple reason that we do not have data on the industry totals.<sup>13</sup> In any case, the role of visitors in these two sub-industries is not likely to be large.

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<sup>13</sup> 'Others' include a ragbag of services industries such as social services, medical services, domestic transportation, business services, professional services, communications etc. Data on 'Cross-boundary transportation' cannot be easily extracted from statistics on transportation in general.

### 3. Comparing Economic Benefits by Types of Visitors

For different types of visitors, we will first present comparisons of benefits as measured by their expenditure, to be followed by contributions as measured by their value added and employment generated. As mentioned before, comparisons by expenditure go from 2002 to 2019, whereas comparisons by value added or by employment go from 2007 to 2019. The yardsticks of comparisons include per capita and per capita per day contributions.

#### 3.1. Visitors' expenditure by types of visitors: A comparison

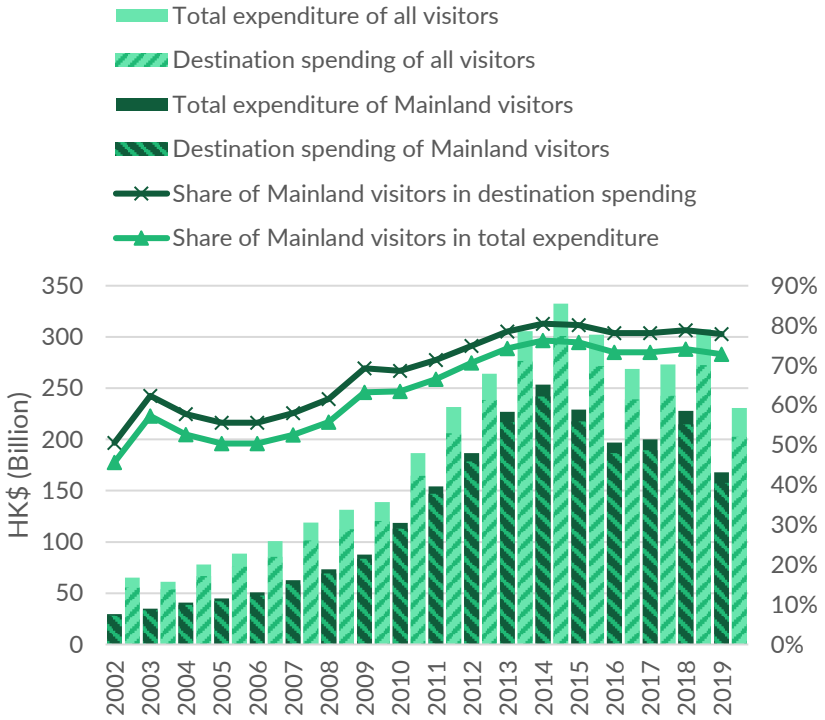
Below, we will compare Mainland vs. Non-Mainland visitors, and Overnight vs. Same-day visitors by their expenditures.

##### 3.1.1. *Mainland visitors and all visitors: Visitors' expenditure*

Figure 3 shows the Destination Spending and Total Expenditure of Mainland visitors and all visitors from 2002 to 2019. The share of Mainland visitors to all visitors in Total Expenditure (Destination Spending) rose from 46% (51%) in 2002 to a peak of 76% (80%) in 2014, and then declined slightly to 73% (78%) in 2019. As the cross-boundary transportation expenditure of Mainland visitors is relatively small (the majority come to Hong Kong by land from nearby regions), Mainland visitors' share in Destination Spending is higher than that in Total Expenditure.



Figure 3: Visitors' destination spending and total expenditure: Mainland visitors and all visitors (2002 to 2019)

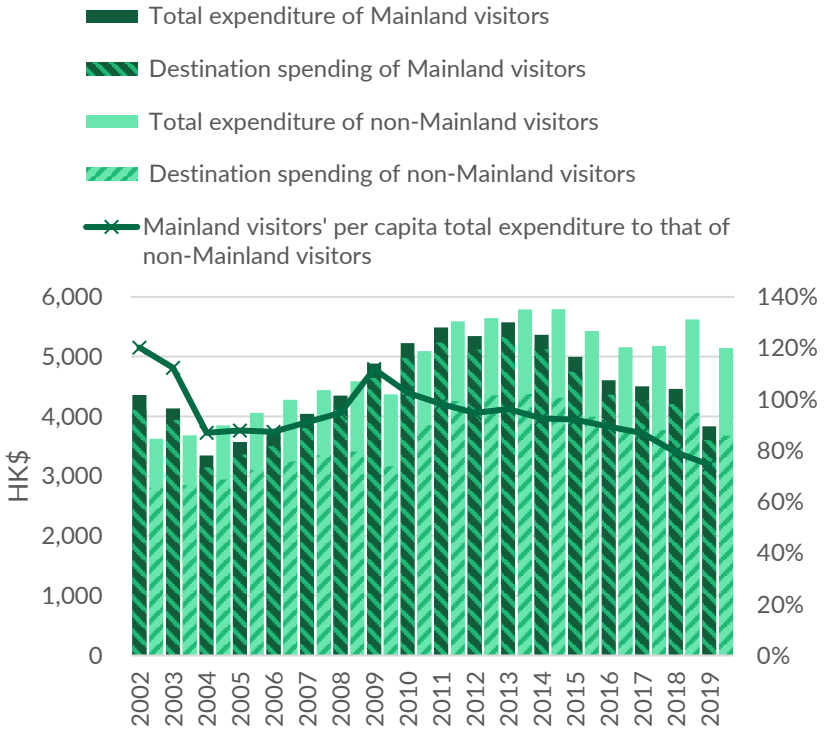


Source: See Table 2.

**3.1.2. Mainland and Non-Mainland visitors: Expenditure per capita and per capita per day**

Figure 4 compares the per capita Destination Spending and Total Expenditure of Mainland visitors with those of Non-Mainland visitors from 2002 to 2019. Destination Spending constituted over 94% of the Total Expenditure of Mainland visitors. The corresponding figures for Non-Mainland visitors were much lower – around 70% to 80%, as they spent much more on cross-boundary transportation than Mainland visitors.

Figure 4: Per Capita Destination Spending and Total Expenditure: Mainland visitors vs. Non-Mainland Visitors (2002 to 2019)



Source: See Table 2.

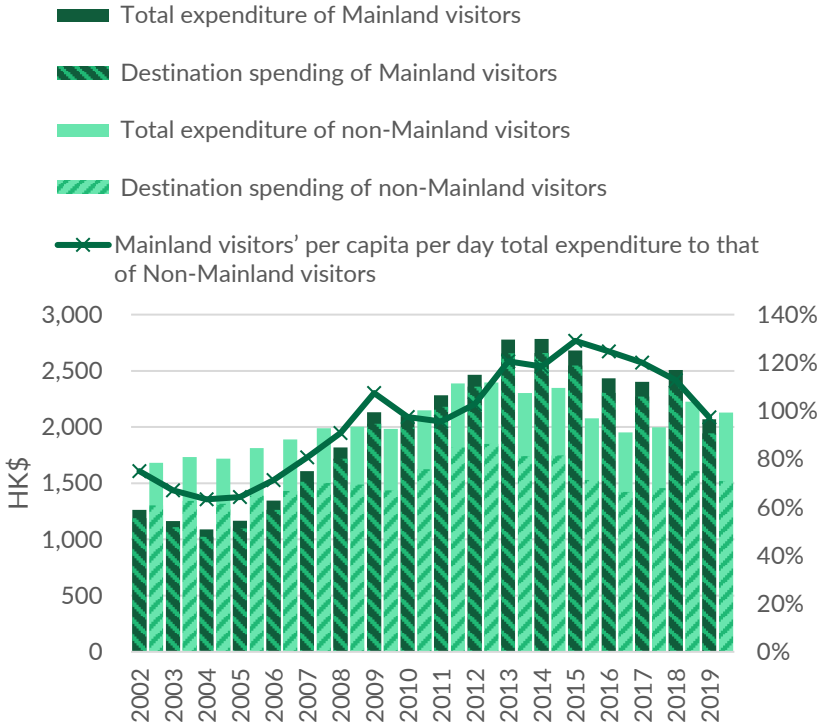
The per capita Total Expenditure of Mainland visitors fell from \$4,357 in 2002 to a low of \$3,347 in 2004 due to the recession triggered by SARS; then recovered and rose to a peak of \$5,573 in 2013 as a result of rapid economic growth in China and the appreciation of Renminbi; but then declined continuously to \$3,843 in 2019 due to growth slowdown in China and the depreciation of *Renminbi*. Most of the changes over time in per capita Total Expenditure are due to changes in per capita Destination Spending, which constituted over 94% of per capita Total Expenditure.

The per capita Destination Spending of Mainland visitors, despite considerable fluctuations over time, has consistently exceeded those of Non-Mainland visitors from 2002 to 2018. However, the picture is different if we look at comparison in terms of per capita total expenditure. Since 2011, the per capita Total Expenditure of Mainland visitors has fallen short of that of Non-Mainland visitors by an increasingly large margin. In 2018, the per capita Total Expenditure of Mainland and Non-Mainland visitors were \$4,210 and \$5,624 respectively. The latter was 34% larger than the former. This shows that, comparisons of per capita Destination Spending is misleading as it ignores spending on cross-boundary expenditure.

Figure 5 compares the per capita per day expenditure of Mainland visitors with that of Non-Mainland visitors. In terms of this measure, the benefits of Non-Mainland visitors exceeded those of Mainland visitors from 2002 to 2011, excepting 2009. However, from 2012 to 2018, the benefits of Mainland visitors exceeded those of Non-Mainland visitors, reversing the ranking of these two types of visitors in terms of per capita Expenditure.

In the period from 2012 to 2018, the two measures (per capita Expenditure vs. per capita per day Total Expenditure) gave opposite results because the average duration of stay of Mainland visitors declined while that of Non-Mainland visitors rose slightly (Table 12). The average duration of stay of Mainland visitors peaked at 3.6 days in 2003, but it declined rapidly to only 1.8 days in 2018. The decline in the average duration of stay of Mainland visitors is largely due to the rapid increase in Mainland Same-day visitors. The average duration of stay of Mainland visitors exceeded that of Non-Mainland visitors up to 2011. However, this was reversed since 2012. During their short stays, Mainland visitors spend so much on shopping that their per capita per day Total Expenditure exceeded those of Non-Mainland visitors from 2012 to 2018.

Figure 5: Per Capita per day Destination Spending and Total Expenditure: Mainland visitors vs. Non-Mainland visitors (2002 to 2019)



Source: See Table 2.

Table 12: Duration of stay by type of visitors (day)

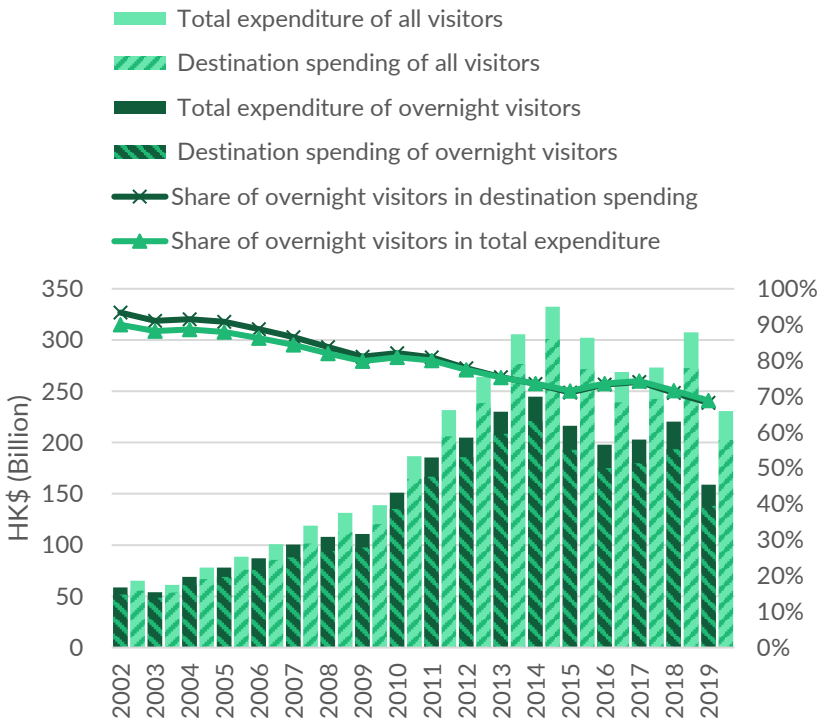
Year	Mainland Overnight Visitors	Mainland Visitors	Non-Mainland Overnight Visitors	Non-Mainland Visitors	All Overnight Visitors	All Visitors
2000	3.3	2.7	2.9	2.2	3.0	2.4
2001	3.5	2.7	2.9	2.2	3.1	2.3
2002	4.5	3.5	2.9	2.2	3.6	2.7
2003	4.8	3.6	3.0	2.1	4.1	2.9
2004	4.3	3.1	3.0	2.2	3.7	2.7
2005	4.2	3.1	3.0	2.2	3.7	2.7
2006	3.9	2.8	3.0	2.3	3.5	2.5
2007	3.6	2.5	2.9	2.2	3.3	2.4
2008	3.5	2.4	3.1	2.3	3.3	2.4
2009	3.4	2.3	2.9	2.2	3.2	2.3
2010	3.9	2.5	3.2	2.4	3.6	2.5
2011	3.9	2.4	3.1	2.3	3.6	2.4
2012	3.7	2.2	3.2	2.4	3.5	2.2
2013	3.4	2.0	3.4	2.5	3.4	2.1
2014	3.3	1.9	3.3	2.5	3.3	2.1
2015	3.2	1.9	3.5	2.6	3.3	2.0
2016	3.2	1.9	3.5	2.6	3.3	2.1
2017	3.1	1.9	3.4	2.6	3.2	2.1
2018	3.0	1.8	3.3	2.5	3.1	1.9
2019	3.3	1.9	3.3	2.4	3.3	2.0

Source: "Visitor characteristics" in *A Statistical Review of Hong Kong Tourism*, Hong Kong Tourism Board, various issues.

### 3.1.3. Overnight visitors and Same-day visitors: Visitors' expenditure

Figure 6 shows the Destination Spending and Total Expenditure of Overnight visitors and all visitors from 2002 to 2019. The share of overnight visitors to all visitors in Total Expenditure declined from 93% in 2002 to 69% in 2019 due to the rapid growth of Same-day visitors, mostly coming from the Mainland.

Figure 6: Visitors' destination spending and total expenditure: Overnight visitors and all visitors (2002 to 2019)

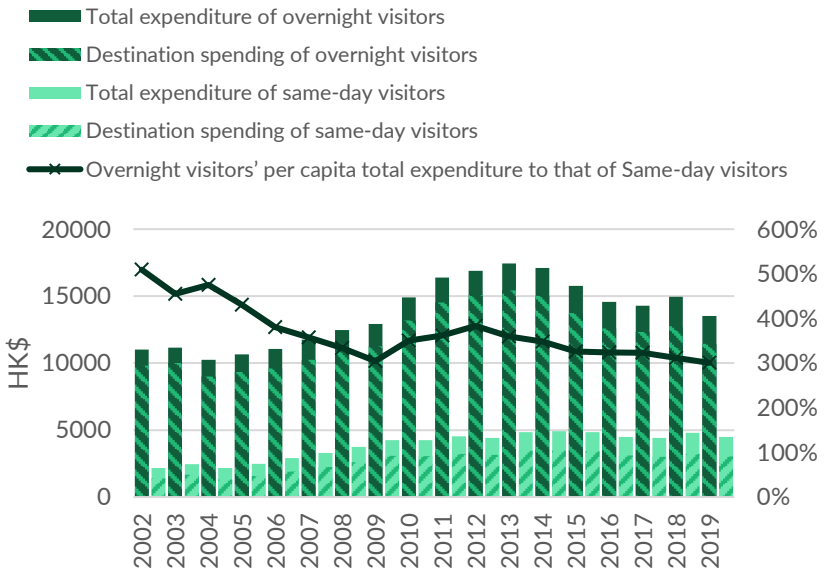


Source: See Table 2.

### 3.1.4. Overnight visitors and Same-day visitors: Spending per capita and per capita per day

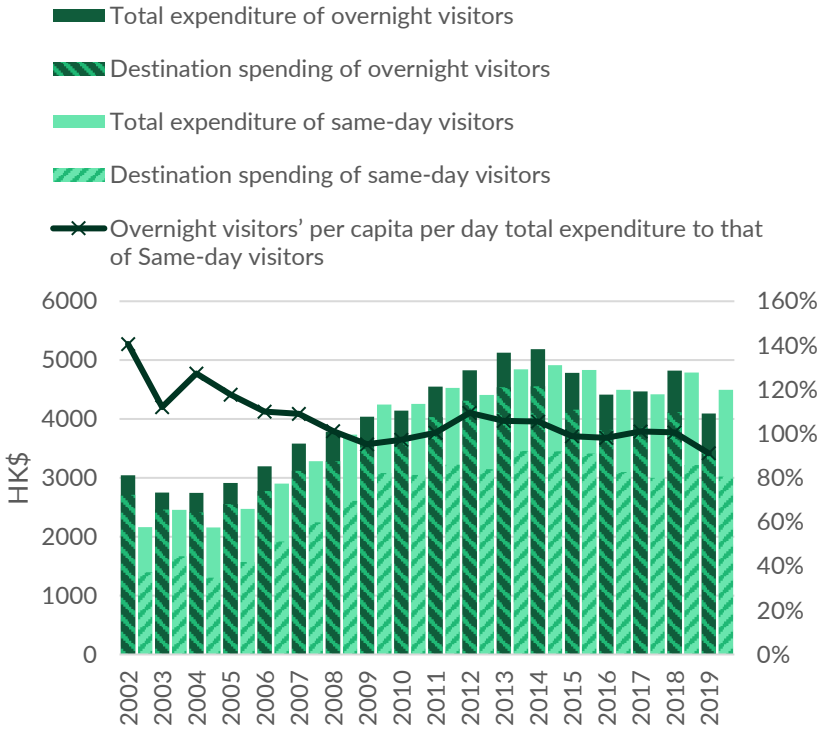
As expected, the per capita Destination Spending and Total Expenditure of Overnight visitors were several times that of Same-day visitors throughout 2002 to 2019 (Figure 7). However, the per capita per day Total Expenditure of Overnight visitors and Same-day visitors were quite close. In the 18 years from 2002 to 2019, there were 13 years (2002 to 2008, 2011 to 2014, and 2017 to 2018) in which the per capita per day Total Expenditure of Overnight visitors exceeded those of Same-day visitors, but there were 5 years (2009 to 2010, 2015 to 2016, and 2019) in which the opposite was true (Figure 8). The benefits of Same-day visitors may not be less than those of Overnight visitors when we measure benefits in terms of per capita per day Total Expenditure.

Figure 7: Per Capita Destination Spending and Total Expenditure: Overnight visitors vs. visitors (2002 to 2019)



Source: See Table 2.

Figure 8: Per Capita per day Destination Spending and Total Expenditure: Overnight visitors vs. Same-day visitors (2002 to 2019)



Source: See Table 2.

### 3.2. Value added by types of visitors: A comparison

Value added is a more precise measure of visitors' benefits than expenditure. Below, we will compare Mainland vs. Non-Mainland visitors, and Overnight vs. Same-day visitors in terms of value added.

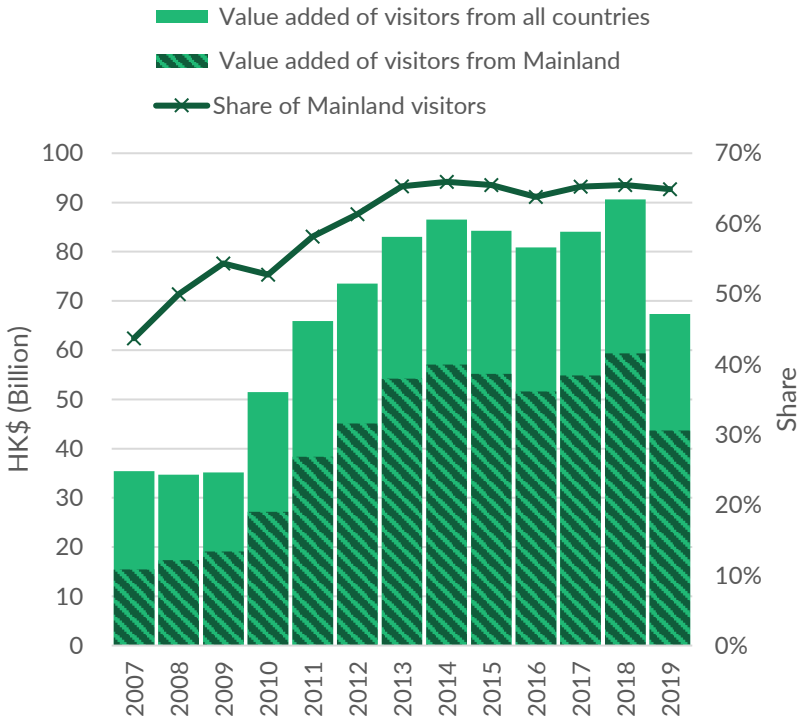
#### 3.2.1. Mainland visitors and all visitors: Value added

Figure 9 shows the value added contributed by Mainland visitors and by all visitors from 2007 to 2019. The share of Mainland visitors in total value added rose from 44% in 2007 to a peak of 66% in 2014, and then plateaued



around 65% till 2019. Comparing Figure 9 with Figure 3, the shares of Mainland visitors in value added (around 65% since 2014), were consistently less than those in Total Expenditure (73% to 76% since 2014). This is because the Destination Spending of Mainland visitors were weighted towards low value added items: They spend relatively more (less) on retail trade (accommodation), which has a relatively low (high) rate of value added.

Figure 9: Visitors' value added: Mainland visitors and all visitors (2007 - 2019)

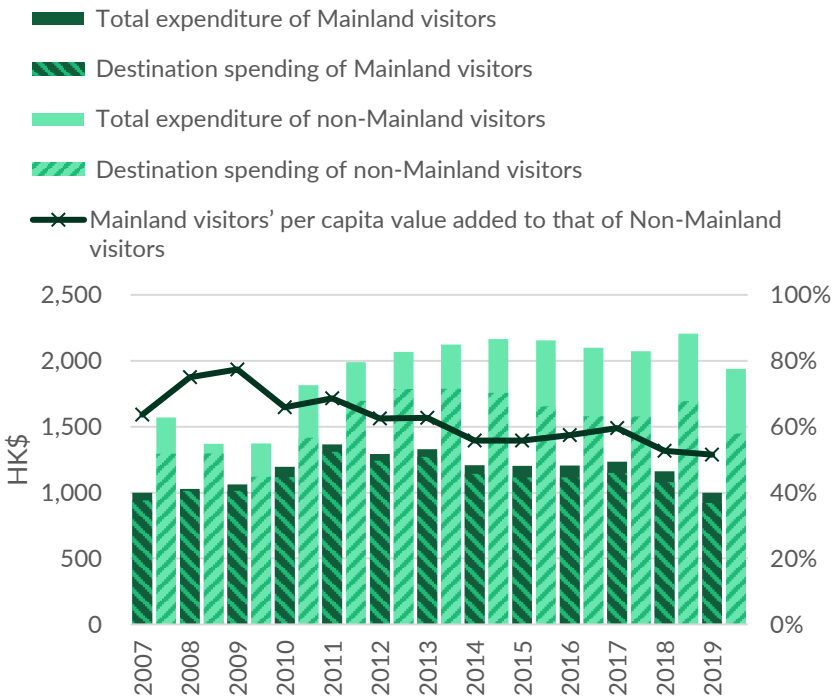


Source: Author's estimates (see text).

### 3.2.2. Mainland and Non-Mainland visitors: Value added per capita and per capita per day

Figure 10 shows that the per capita value added of Mainland visitors were much less than those of Non-Mainland visitors. In 2019, the per capita value added of Mainland visitors at \$998 was only half that of Non-Mainland visitors at \$1,938, despite the fact that the per capita Destination Spending of the two groups were roughly the same (Figure 4). This was because the Destination Spending of Mainland visitors were weighted towards lower value added items. Moreover, Mainland visitors spent much less on cross-boundary transportation as the majority of them came from nearby areas.

Figure 10: Visitor's per capita value added: Mainland visitors vs. Non-Mainland visitors (2007 – 2019)

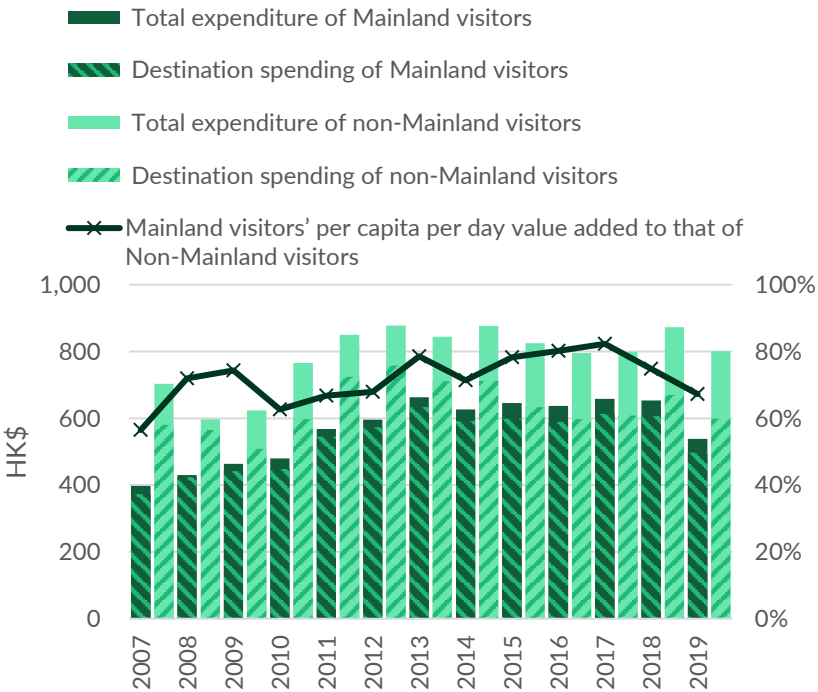


Source: Author's estimates (see text).

The per capita per day value added of Mainland visitors were also substantially less than that of Non-Mainland visitors (Figure 11). However, since 2012, the gap in contributions between Mainland and Non-Mainland visitors in terms of per capita per day value added is slightly less than that in terms of per capita value added because the length of stay of Mainland visitors have become shorter.

Comparing the contributions of Mainland and Non-Mainland visitors from 2012 to 2018, though Mainland visitors contributed more in terms of per capita per day total expenditure (Figure 5), they contributed less in terms of per capita per day value added (Figure 11). This again shows that value added is a better measure of economic contributions.

Figure 11: Visitor's per capita per day value added: Mainland visitors vs. Non-Mainland visitors (2007 - 2019)

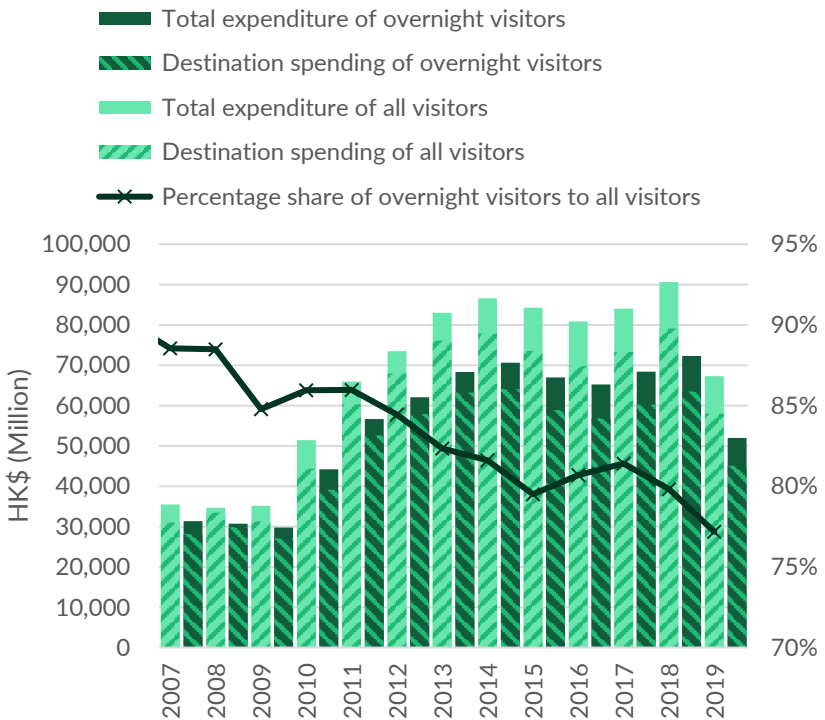


Source: Author's estimates (see text).

### 3.2.3. Overnight visitors and all visitors: Value added

Figure 12 shows that, as expected, Overnight visitors accounted for the bulk of all visitors' value added. However, the share of Overnight visitors in all visitors' total value added declined from 91% in 2002 to 77% in 2019 due to the rapid growth of Same-day visitors.

Figure 12: Visitors value added: Overnight visitors vs. all visitors (2007 – 2019)



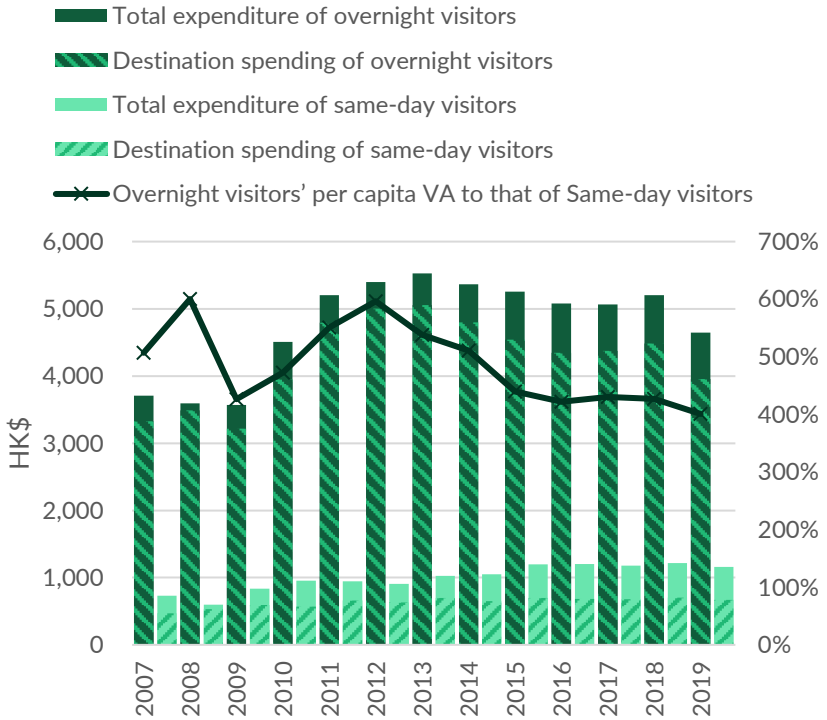
Source: Author's estimates (see text).

### 3.2.4. Overnight visitors and Same-day visitors: Value added per capita and per capita per day

The contributions of Overnight visitors in value added per capita were four to six times that of Same-day visitors throughout 2007 to 2019 (Figure 13).

As expected, the gap in contributions in value added per capita per day was smaller. In 2019, for instance, the per capita per day value added of Overnight visitors and Same-day visitors were \$1408 and \$1,159 respectively. The former exceeded the latter by 21%.

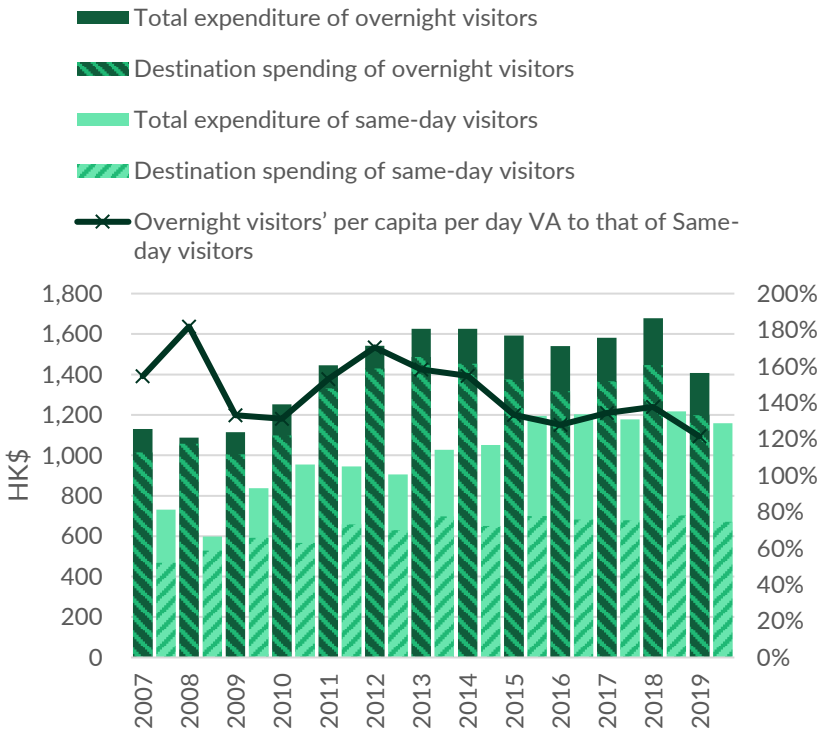
Figure 13: Visitors' per capita value added: Overnight visitors vs. Same-day visitors (2007-2019)



Source: Author's estimates (see text).

Though Overnight visitors contributed less than Same-day visitors in terms of total expenditure per capita per day (Figure 8) in 5 years (2009 to 2010, 2015 to 2016, and 2019), Overnight visitors clearly contributed much more than Same-day visitors in terms of value added per capita per day (Figure 14). This again shows that value added is a better measure of contributions than total expenditure.

Figure 14: Visitors' per capita per day value added: Overnight visitors vs. Same-day visitors (2007-2019)



Source: Author's estimates (see text).

### 3.3. Employment generated by types of visitors: A comparison

Contributions to employment is an important measure of economic benefit. Below, we will compare employment generated by Mainland vs Non-Mainland, and Overnight vs Same-day visitors.

#### 3.3.1. Mainland visitors and all visitors: Employment generated

Figure 15 shows the employment generated by Mainland visitors and all visitors from 2007 to 2019. The share of employment generated by

Mainland visitors to all visitors rose from 54% in 2007 to 73% in 2014, and then hovered around 73% to 74% due to the slowdown in growth of Mainland visitors.

Figure 15: Visitors' employment: Mainland visitors and all visitors (2007 - 2019)



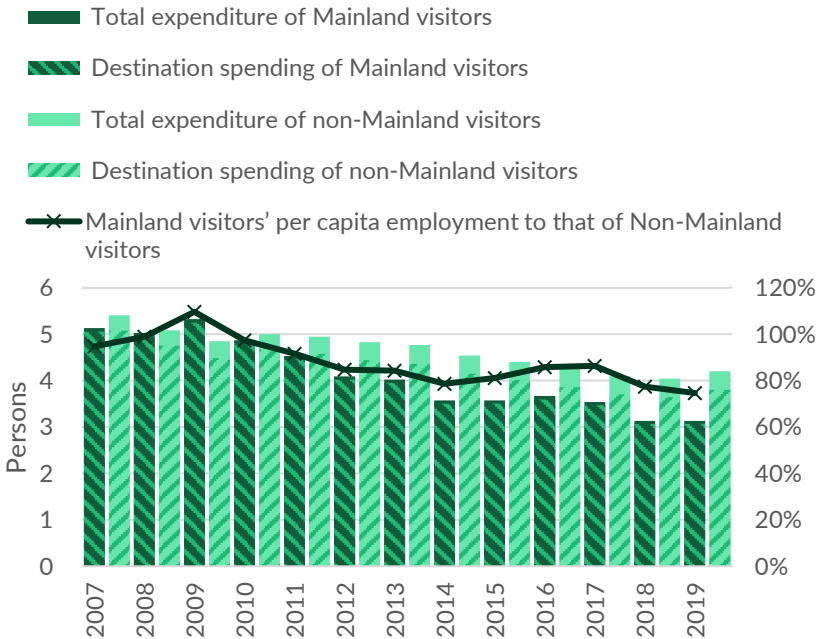
Source: Author's estimates (see text).

Since 2014, the shares of Mainland visitors in visitors' employment generated (around 73%), were higher than their shares in value added (around 65%) because Mainland visitors spend more on Retail Trade which has low value added, but they spend very little on Cross-boundary Transportation which is least labour intensive.

### 3.3.2. Mainland and Non-Mainland visitors: Employment generated per capita and per capita per day

Figure 16 shows that, from 2007 to 2019, employment generated per capita of Mainland visitors were less than those of Non-Mainland visitors except for 2009. However, the gaps between Mainland and Non-Mainland visitors in employment generation were less than those in value added, because Mainland visitors spend a lot on Retail Trade (which has low value added) while Non-Mainland visitors spend a lot on Cross-boundary Transportation (which is least labour intensive). For instance, in 2019, per capita value added of Mainland visitors was only 52% of Non-Mainland visitors, while per capita employment generated of Mainland visitors was 75% of Non-Mainland visitors.

Figure 16: Visitor's per capita employment: Mainland visitors vs. Non-Mainland visitors (2007 – 2019)

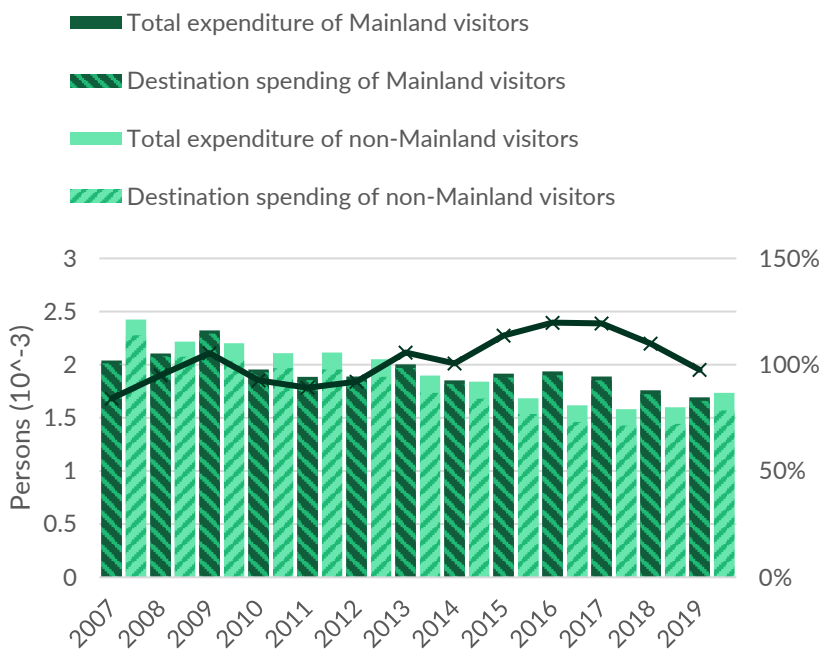


Source: Author's estimates (see text).



Figure 17 shows that, from 2007 to 2012, the employment generated per capita per day by Mainland visitors was generally less than those of Non-Mainland visitors.<sup>14</sup> However, from 2013 to 2018, the employment generated per capita per day by Mainland visitors exceeded those of Non-Mainland visitors as the duration of stay of Mainland visitors has become shorter from 2012 onwards. This result is more favourable to Mainland visitors than the analogous comparison in value added, as the per capita per day value added of Mainland visitors were less than those of Non-Mainland visitors throughout 2007 to 2019.

Figure 17: Visitor's per capita per day employment: Mainland visitors vs. Non-Mainland visitors (2007 - 2019)



Source: Author's estimates (see text).

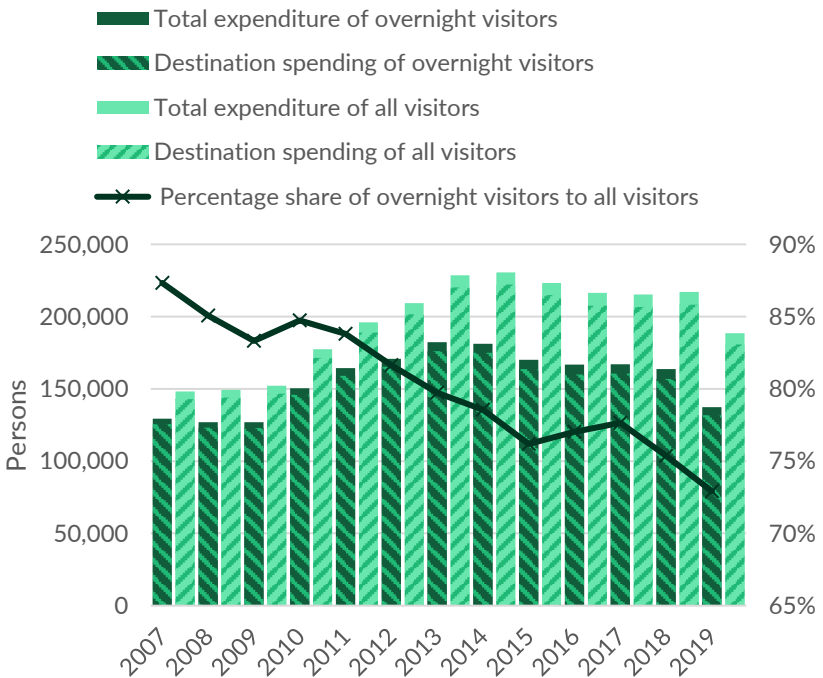
<sup>14</sup> Except for 2009, which is an outlier due to the global financial tsunami.

Summing up, in the comparison of Mainland vs. Non-Mainland visitors, Mainland visitors fare better in employment creation than in value added generation because Mainland visitors spend relatively more (less) on Retail Trade (Cross-boundary Transportation).

### 3.3.3. Overnight visitors and all visitors: Employment generated

The total employment generated by all visitors (Overnight visitors) peaked in 2014 at 230,649 (181,208) persons, and they declined afterwards due to the deceleration in the growth of Mainland tourists. Due to the rapid growth of Same-day visitors, the share of employment generated by Overnight visitors to those of all visitors fell from 87% in 2007 to 73% in 2019 (Figure 18).

Figure 18: Visitors' employment: Overnight visitors vs. all visitors (2007 - 2019)

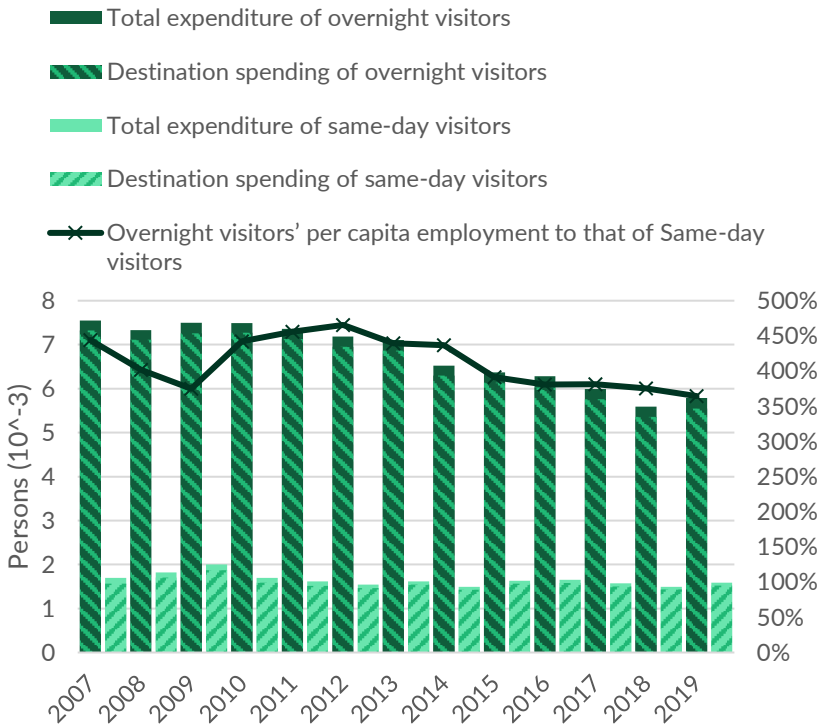


Source: Author's estimates (see text).

### 3.3.4. Overnight visitors and Same-day visitors: Employment generated per capita and per capita per day

As expected, the employment generated per capita of Overnight visitors greatly exceeded that of Same-Day visitors (Figure 19). In 2012, the ratio of employment generated by Overnight visitors to that of Same-day visitors reached a peak of 465%. However, this ratio declined to 364% in 2019, as the length of stay of Overnight visitors declined (Table 7).

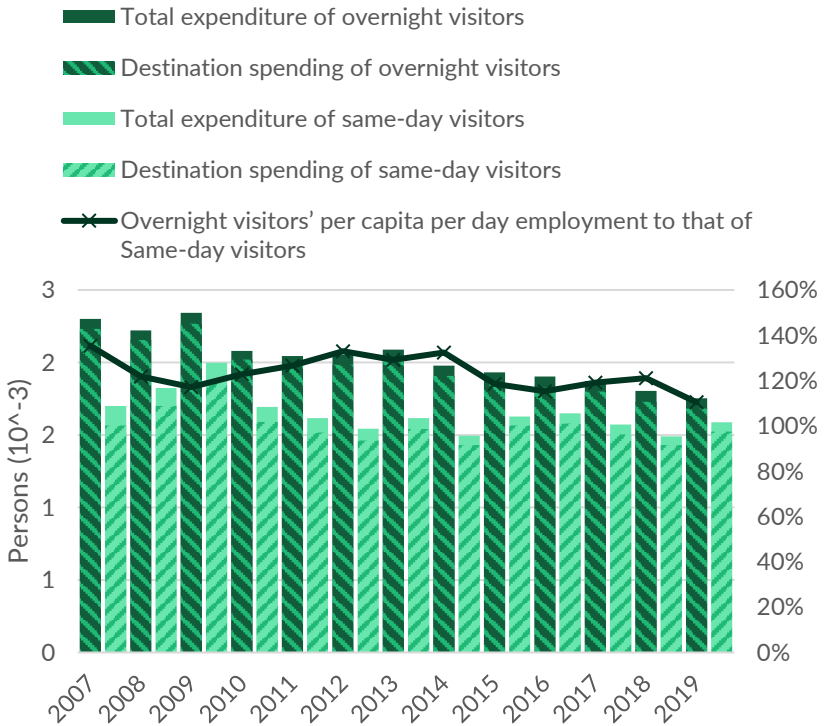
Figure 19: Visitors' per capita employment: Overnight visitors vs. Same-day visitors (2007-2019)



Source: Author's estimates (see text).

Figure 20 shows that the employment generated per capita per day of Overnight visitors also exceeded that of Same-day visitors by a small margin: The average ratio of the former to the latter over the 2007 to 2019 period was 123%. The main reason was that Overnight visitors spent relatively more on Accommodation, which was moderately labour intensive.

Figure 20: Visitors' per capita per day employment: Overnight visitors vs. Same-day visitors (2007-2019)



Source: Author's estimates (see text).

## 4. Simple Policy Applications: Suspension of 'M-Permits' and Post-Covid Recovery

Our estimation of economic benefits of different types of visitors is an accounting exercise rather than a causal model. However, the accounting estimates are highly suggestive and they can be used in simple policy applications involving changes in the composition of visitors.

This paper will cover two such applications. First, the economic losses for Hong Kong from the suspension of M-Permits in April 2015. Second, the economic gains for Hong Kong from easing Covid travel restrictions on inbound visitors that would increase Non-Mainland visitors relative to Mainland visitors as few Mainland visitors are allowed to leave the Mainland due to China's stringent Covid controls.

### 4.1. Suspension of 'M-Permits': Economic losses for Hong Kong

When M-Permits were suspended in April 2015, the Hong Kong government estimated that the number of 'M-Permit' visitors would decrease by 4.6 million (Sung et.al 2015: 4). In reality, as can be seen from Figure 1, the number of Mainland visitors did fell from 2015 to 2017, after reaching a peak of 47.2 million in 2014. The 2014 peak was not surpassed till 2018.

Taking the 2014 number of 47.2 million Mainland visitors as a yardstick, the total shortfall in the number of Mainland visitors in the 3 years' period from 2015 to 2017 was 4.5 million, which is surprisingly close to the government's estimated figure of 4.6 million. However, it should be noted that other factors which had a negative impact on Mainland's outgoing

tourism, such as the depreciation of the Renminbi, and the slowdown of the Chinese economy, were also at work.

For this policy exercise, we made the following simplifying assumptions:

- (1) We estimate the economic losses for a decrease of 'M-Permit' visitors by 4.6 million, which was 7.8% of visitor arrivals in 2015. In other words, we took the government's estimated number as given.
- (2) We abstract from the time path of the decrease and assume all of the decrease occurred instantaneously in 2015. We take a comparative static approach, which is not highly unrealistic as the shape of the time path would have little effect on the overall size of the loss.
- (3) We assume that all of these visitors were Same-day visitors, which was close to reality.<sup>15</sup> Their per capita expenditure, and the distribution of their expenditure over the five sub-industries were the same as those of Same-Day visitors from the Mainland.

Given the above assumptions, the per capita contributions to value added and employment of these 'M-Permit' visitors are easily computed. Table 13 shows that the total loss in value added would be \$2,302 million, or only 0.1% of the 2015 GDP. Total loss in employment would be 7,979 persons, or only 0.2% of 2015 employment.

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<sup>15</sup> A small share of 'M-Permit' visitors stayed overnight, but no data was available after mid-2013. From 2009 to the first half of 2013, the share of 'M-Permit' visitors who stayed overnight fell from 18.2% to 8.4% (CEDB 2013: 7). This trend implies that the share of 'M-Permit' visitors who stayed overnight in 2015 would be no more than a few percent. Moreover, the expenditure on Cross-boundary Transportation of all 'M-Permit' visitors (Overnight or Same-day) would be the same as they all came from Shenzhen. The assumption that all 'M-Permit' visitors were same-day visitors was close to the reality in 2015.

Table 13: Policy Exercise: Losses in value added and employment from suspension of 'M-Permits' in 2015

Sub-industries	Value Added (\$ Million)	Share of Value Added Generated	Employment (Persons)	Share of Employment Generated
<b>Retail Trade</b>	1,778	77.3%	6,474	81.1%
	(2.0%)		(2.3%)	
<b>Accommodation</b>	38	1.6%	61	0.8%
	(0.1%)		(0.1%)	
<b>Food Services</b>	200	8.7%	924	11.6%
	(0.4%)		(0.4%)	
<b>Others</b>	236	10.3%	481	6.0%
	(N/A)		(N/A)	
<b>Cross-Boundary Transportation</b>	50	2.2%	38	0.5%
	(N/A)		(N/A)	
<b>Total</b>	2,302	100%	7,979	100%
	(0.1%)		(0.2%)	

Note: Bracket figures represent percentage share of sub-industry's total value added/employment.

Source: Author's estimates (see text).

The total loss is broken down into the five sub-industries. As expected, the loss was concentrated in Retail Trade, which accounted for 90% of the expenditure of Mainland Same-day visitors. Loss of value added in Retail Trade would be \$1,778 million, which was 77% of the total loss, but it was only 2.0% of the value added in Retail Trade. Loss of employment in Retail Trade was 6,474 persons, which was 81% of the total loss, but it was only 2.3% of the employment in Retail Trade. Losses in the other sub-industries were minuscule.

Summing up, though the loss in number of visitor arrivals of 4.6 million (7.8% of the 2015 total) was significant, the losses in value added and employment were very small for two reasons. Firstly, the per capita expenditure of Same-day visitors was low. Secondly, 90% of their spending was on Retail Trade, which has high leakage as goods sold in Hong Kong were mostly imported.

## **4.2. Post Covid partial recovery in tourism: Hong Kong's economic gains**

At time of writing in late 2022, Hong Kong is phasing out its Covid restrictions on travelling. This would lead to a gradual recovery in Non-Mainland Overnight visitors while the recovery in Mainland overnight visitors would be slow due to China's strict Covid measures and controls on outgoing tourism. The recovery of Same-day visitors will be the slowest as the Mainland is likely to maintain some quarantine requirements on travellers for a considerable length of time. Quarantine requirements impose a fixed cost on tourists, which has a greater disincentive effect on Same-day visitors than those who stay for a longer duration.

To study the economic gains from recovery in tourism, we can experiment with different time paths of recovery in Non-Mainland Overnight visitors, Mainland overnight visitors, and Same-day visitors. However, a sophisticated study is beyond the scope of this paper. We just make the following very simple assumptions:

- (1) We abstract from the time path of recovery and take a comparative static approach in which we look at the overall increase in visitors before and after the period of policy change.
- (2) We take the immediate pre-Covid year of 2019 as a yardstick. We assume the number and expenditure of Non-Mainland Overnight visitors would recover to the 2019 level after the period of policy



change. This simple assumption most likely overstates the gains of recovery, as airlines take time to recover to full capacity.

- (3) To gauge the size of the absolute estimated gains in value added relative to GDP, we also use the 2019 GDP as a yardstick for simplicity.<sup>16</sup>
- (4) Mainland visitors would continue to be negligible as we assume that the Mainland would continue with its zero-Covid restrictions on outbound travel for the period of this policy exercise.
- (5) Non-Mainland Same-day visitors would also be negligible. In the past, Non-Mainland Same-day visitors came from two principal sources. The first source is Macau, which is very close to Hong Kong. The second source is Non-Mainland visitors who stop by Hong Kong briefly on their way to other places in the Mainland. For our policy exercise, visitors from both sources would dry up due to Mainland's strict Covid restrictions, which are practised not only in the Mainland but also in Macau.

With the above assumptions, we can easily compute the contributions to value added and employment of post-Covid recovery, which are the same as those of Non-Mainland overnight visitors in 2019. Table 14 shows that the gain in value added (employment) would be \$20,276 million (46,015 persons), which would be 0.7% of GDP (1.2% of total employment) in 2019. The gains are not insignificant, but still very far from full recovery as Mainland visitors used to dominate inbound tourism. Table 10 shows that, in the pre-Covid year of 2019, visitors generated 2.4% of the GDP and 4.9% of total employment.

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<sup>16</sup> It may be argued that it is better to use the 2023 GDP as a yardstick, assuming the recovery will take one year from the beginning to the end of 2023. However, official preliminary estimates of the 2023 GDP (and its composition by industry) will not be known till February 2024 (2025). Anyway, according to current forecasts, the 2023 GDP will be very close to that of 2019 in real terms.

Table 14: Policy Exercise: Gains in value added and employment from partial post-Covid recovery in tourism

Sub-industries	Value Added (\$ Million)	Share of Value Added Generated	Employment (Persons)	Share of Employment Generated
<b>Retail Trade</b>	1,692	8.3%	6,474	81.1%
		(2.3%)		(2.8%)
<b>Accommodation</b>	8,344	41.2%	61	0.8%
		(36.5%)		(39.5%)
<b>Food Services</b>	3,085	15.2%	924	11.6%
		(5.8%)		(5.2%)
<b>Others</b>	3,406	16.8%	481	6.0%
		(N/A)		(N/A)
<b>Cross-Boundary Transportation</b>	3,748	18.5%	38	0.5%
		(N/A)		(N/A)
<b>Total</b>	20,276	100%	7,979	100%
		(0.7%)		(1.2%)

Note: Bracketed figures represent percentage share of sub-industry's total value added/employment.

Source: Author's estimates (see text).

The gains are broken down by the five sub-industries in Table 14. As expected, the largest gains go to Accommodation, which accounted for 28.7% of the expenditure of Non-Mainland Overnight visitors in 2019. The gain in value added (employment) would be \$8,344 million (16,398 persons), which was 41.2% (35.6%) of total gains in value added (employment), and was 36.5% (39.5%) of the value added (employment) in the Accommodation sub-industry. The impact on the Accommodation sub-industry would be substantial. However, for Retail Trade and Food Services, the gains would only be a few percent of the value added/employment in the two sub-industries.

A more realistic policy exercise, which is beyond the scope of this paper, would experiment with different time paths of recovery for different types of visitors. However, our simple categorization of different types of visitors (Mainland vs. Non-Mainland, Overnight vs. Same-day) provides the basic building blocks for a more realistic model.

## 5. Potential Biases and Limitations of this Paper

In this paper, we assume that the value added or employment generated per dollar of spending in each sub-sector of tourism is the same for different types of visitors. This may not be the case. For example, Mainland visitors may tend to stay in low end hotels while Non-Mainland visitors may tend to stay in luxury hotels. This will further widen the gap in per capita value added between Mainland and Non-Mainland visitors.

Our quantification of economic benefits largely ignored externalities. As noted, negative externalities such as congestion and overcrowding have been prominent in policy discussions. However, potential positive externalities can be large. As noted by the author (Sung 2014: 6), before institution of IVS, Mainland tourist visits were restricted to group tours, which are highly inflexible. IVS removes an important barrier in Mainland-Hong Kong integration and may generate significant external benefits through lowering cross-boundary transaction costs. This promotes the economic integration of Hong Kong with the Mainland and may generate significant external economies in production and in consumption. On the production or supply side, with improved exchanges with the Mainland, HK firms may find it easier to hire skilled personnel from the Mainland. On the consumption or demand side, the lowering of cross-border transaction

costs may stimulate Mainland's demand for Hong Kong services, including services not related to tourism (e.g., financial services, educational services). IVS may also generate external economies in cross-border investment as Mainland investors may understand the Hong Kong investment environment better through IVS visits. These positive or negative externalities are ignored as they are very difficult to quantify.

Our paper does not analyze the impact of tourism on income distribution. There is a popular belief that Mainland visitors are bad for income distribution. However, as mentioned in Sung (2014: 41), there are two opposing effects of Mainland visitors on income distribution. On the one hand, the growth of Mainland visitors had vastly outstripped the increase in retailing space in the pre-Covid era, and shop rentals had risen rapidly in premium tourist districts. This should lead to a worsening of income distribution at the upper end. On the other hand, the rapid growth of Mainland visitors was important for employment creation and lowering the unemployment rate, especially for low skilled workers. This should lead to an improvement in income distribution at the lower end. The overall effect on income distribution of soaring shop rentals and lowering unemployment is very difficult to judge without a detailed study.

## 6. Conclusion

To gauge the economic contributions of different types of visitors, the only official data available is Destination Spending by types of visitors. This is a very crude measure for two reasons. First, Destination Spending is only part of visitors' expenditure. The missing component, visitors' spending on Cross-boundary Transportation, can be very substantial. Second, visitors'

expenditure is not a good proxy for value added as Mainland (Non-Mainland) visitors' expenditure are skewed towards low (high) value added items.

This paper estimates spending on Cross-boundary Transportation by types of visitors, which enables us to estimate visitors' expenditure by types of visitors. Combined with data on distribution of visitors' expenditure over the sub-industries of tourism by types of visitors, we are able to estimate the contributions to value added and employment by types of visitors.

We briefly summarize below the many estimation results of this paper, and then discuss the policy implications.

## **6.1. Summary of estimation results**

During our period of study from 2007 to 2019, the rates of value added of Accommodation (from 0.56 to 0.66) were the highest and those of Retail Trade (from 0.15 to 0.17) were the lowest. The former were more than three times the latter. As a result, the overall rate of value added of visitors' expenditure is higher for visitors who spend relatively more on Accommodation (e.g., Non-Mainland visitors and Overnight visitors), and the rate is lower for those who spend relatively more on Retail Trade (e.g., Mainland visitors and Same-day visitors). In 2018, the rate of value added of visitors' expenditure of Non-Mainland visitors was 0.376, while that of Mainland visitors was only 0.260. The corresponding figures for Overnight and Same-day visitors were 0.327 and 0.214 respectively.

As for employment generated, Non-Mainland (Overnight) visitors spend relatively more on Accommodation, which is slightly more labour intensive than Retail Trade. However, they also spend relatively more on Cross-boundary Transportation, which is least labour intensive. As a result, the difference in the employment coefficients of Non-Mainland (Overnight) vs.

Mainland visitors (Same-day) was not large. From 2007 to 2019, the average employment coefficient of Non-Mainland (Overnight) visitors was 0.903 (0.917), which was slightly bigger than the 0.865 (0.727) employment coefficient of Mainland (Same-day) visitors.

Among the five sub-industries of tourism, visitors' economic contributions to Accommodation, Retail Trade, and Food Services were substantial. In 2018, visitors contributed to 82.1% (83.2%), 30.5% (36.5%), 20.9% (18.1%) of the value added (employment) in Accommodation, Retail Trade, and Food Services respectively. In both 2014 and 2018, Non-Mainland visitors generated more value added in Accommodation than Mainland visitors, even though the number of Mainland visitors was 3.5 times that of Non-Mainland visitors.

We compare the economic contributions of different types of visitors in terms of their expenditure, value added, and employment generated. We argue that per capita per day value added/employment generated is the best yardstick for comparison. Comparing Mainland with Non-Mainland visitors from 2007 to 2019, the average per capita per day expenditure of the former exceeded that of the latter by 12%, but the average per capita per day value added of the former fell short of the latter by 27% because the latter spent relatively more on high value added sub-industries. This shows that value added is a better indicator of economic benefit than expenditure. As for employment, Mainland visitors have a slight edge: Their average per capita per day employment generated exceeded that of Non-Mainland visitors by 4%.

Comparing Overnight with Same-day visitors, the average per capita per day expenditure of the former exceeded that of the latter by only 1%, but the average per capita per day value added (employment generated) of the former exceed that of the latter by 42% (23%). Value added and employment generated are more precise measures than expenditure.

Summing up, the conventional wisdom that Hong Kong should focus more on attracting Non-Mainland and Overnight visitors is supported by our detailed analysis on economic benefits. To optimize the limited capacity to receive tourists in Hong Kong, it is rational to focus on visitors who generate more benefits in terms of per capita per day value added and employment.

## **6.2. Policy implications**

This paper has conducted two simple policy exercises involving changes in the composition of different types of tourists: Suspension of 'M-Permits', and partial recovery of tourism due to relaxation of Covid restrictions on travel. The policy exercises are crude, and they can be improved in many ways which are beyond the scope of this paper. The simple exercises do demonstrate the potential applications of our estimates of value added/employment by types of visitors to policy. Such estimates can provide the building blocks for diverse applications.

In the long run, with complete relaxation of Covid travel restrictions, Hong Kong has to brace for the re-emergence of congestion and overcrowding arising from massive flows of visitors from the Mainland.

Our use of per capita per day value added/employment in comparing the benefits of different types of visitors does take care of the negative consequence of congestion in a limited way, on the assumption that congestion generated is proportional to the length of stay. However, this is very crude as it does not capture the qualitative differences between different types of visitors. It can be argued that Mainland visitors generate more conflicts with locals per capita per day than Non-Mainland visitors because Non-Mainland visitors' activities are largely confined to tourist districts and facilities, while Mainland visitors regularly take mass transit to

shops of residential areas to look for daily items such as infant formula, non-prescription drugs, cosmetics etc. Moreover, due to geographic and cultural proximity, Mainland visitors also frequent everyday leisure facilities for ordinary people such as country parks, beaches, and campgrounds, leading to conflicts with locals.

It should be noted that, though the 'tourist density' of Macau is very much higher than that of Hong Kong (Area of Macau is only 3% of Hong Kong's, but visitor arrivals in Macau was 90% of Hong Kong's in the pre-Covid era), conflicts with locals were not prominent in Macau mainly because tourist activities were largely confined to casinos.

Cultural and social conflicts are very difficult to quantify, and they are beyond the scope of this paper. However, in terms of policy, diverting Mainland tourists off residential areas to shopping malls or service facilities at convenient locations near the boundary is worth consideration. The government did allocate land in 2013 at the boundary near Sin Tin for a shopping mall geared towards Mainland visitors. However, the effort was too little too late: Transportation to the location was inconvenient; construction was delayed, and the mall was not finished till 2018, when the growth of Mainland visitors already came to a standstill. The mall attracted very few visitors and was closed down in 2020.

With complete relaxation of Covid controls, cross-boundary traffic will again be very large. With the completion of shopping malls in the Free Trade Zones in the Mainland, Mainland visitors to Hong Kong will likely shift from shopping to services, including medical, financial, educational, and leisure services. Encouraging these service providers to set up facilities in the Northern Metropolis near the border can ease overcrowding in Hong Kong. An even better alternative is to encourage these Hong Kong service providers to set up affiliates across the border. Quite a few Hong Kong



universities and international schools have already taken this route. However, the ease of setting up shop across the border is limited by the pace of Mainland's liberalization of services. High end services (finance, insurance, education, medicine, transportation, telecommunications, professional, and business services) are usually difficult to liberalize as they often involve state actors, government regulations, and large local firms with strong vested interests. While the Mainland has taken many steps in services liberalization, there is still a long way to go. With successful liberalization of services, fewer Mainlanders will come to Hong Kong for their daily needs, and the spatial distribution of activities between Hong Kong and adjacent areas will become more rational and efficient.

## Appendix: Disaggregation of Cross-Boundary Expenditure by Types of Visitors

As mentioned in the paper, the total Expenditure on Cross-boundary Transportation (henceforth *ECBT*) of all inbound international passengers is estimated by the Census and Statistics Department. The estimate is based on the number of passengers by land, by sea, and by air; estimates of fares they paid, and what portions of those fares accrue to Hong Kong. We need to disaggregate ECBT by types of international passengers and types of visitors.

Estimation procedure involves the following steps and assumptions:

- (1) We estimate the number of arrivals by mode of transportation for all types of inbound international passengers (i.e., visitors and non-visitors). We distinguish between four modes of transportation: By land, by sea, by short-haul flight (flights within Asia), and by long-haul flight (flights from outside Asia).
- (2) We simply assume that the per capita ECBT of an arrival by long-haul flight is twice that of a short-haul flight.
- (3) For each mode of transportation, we assume that the per capita ECBT is the same across different types of passengers/visitors, e.g., for passengers arriving on a short-haul flight, the ECBT of a Mainland visitor is the same as that of a Non-Mainland visitor.
- (4) We estimate the per capita ECBT for the four modes of transportation. As expected, the per capita ECBT by land or by sea is much lower than that by air.

Once the above estimates are obtained, the estimation of ECBT by types of international passengers/visitors is straightforward. For example, for Mainland visitors arriving by land, their ECBT is the product of their number of arrival and their per capita ECBT. Summing across the products of all modes of transportation gives the ECBT of Mainland visitors.

## **1. Number of arrivals by type of passengers/visitors by mode of transportation**

The Hong Kong Tourist Board (HKTB) publishes detailed statistics on number of arrivals by land, by sea, and by air (disaggregated by short-haul and long-haul) for each type of visitors. In 2018, the shares of visitors arriving by land, by air, and by sea were 71%, 22%, and 7% respectively. For visitors arriving by air in that year, 22% took long-haul flights while the rest took short-haul flights.

As the number of arrivals by mode of transportation are available for visitors, we only need to estimate the corresponding data for non-visitors. Non-visitors include air crew, servicemen, and transit/transfer passengers. Transit/transfer passengers do not enter Hong Kong customs. Transfer passengers change planes at the airport while transit passengers continue their journey in the same plane. Transit/transfer passengers by land and by sea are negligible, and we just focus on transit/transfer passengers by air.

### ***Transit passengers***

Their numbers are available from 'Passenger throughput of civil aircraft' in *Statistical Digest of Service Sector* (homepage of Census and Statistics Department).

## **Transfer passengers**

Their numbers = 'Arrival throughput of air passengers' –  
'Passenger arrivals by air'

where

- 'Arrival throughput of air passengers' refer to passengers arriving at the airport, whether they enter Hong Kong customs or not. Their numbers are available from the same source as transit passengers.
- 'Passenger arrivals by air' refer to air passengers entering Hong Kong Customs. Their numbers are available from *Annual Digest of Statistics* (homepage of Census and Statistics Department)

## **Inbound international transit/transfer passengers**

Their number =  $0.8 \times (\text{transit passengers} + \text{transfer passengers})$

Transit/transfer passengers include international passengers as well as Hong Kong residents. In comparison with international passengers, Hong Kong residents are much more likely to enter Hong Kong on their flights stopping by Hong Kong. The share of Hong Kong residents in transit/transfer passengers is probably small. For simplicity, we assume 80% of transit/transfer passengers are international passengers.

## **Aircrew**

We ignore aircrew as they do not pay for their flights to Hong Kong. Though their airline companies need to bear the expenses of their flights, such expenses are covered by the payments of the visitors who took their flights. These payments have already been accounted for in the ECBT of visitors.

## *Servicemen*

We ignore servicemen as their numbers are negligible. Though the vessels carrying them need to pay port charges, such charges are small.

## **2. Per capita ECBT of international passengers by land and by sea**

### *Per capita ECBT of arrivals by land ('L')*

Let 'L' be the per capita ECBT of arrivals by land. The Economic Analysis and Business Facilitation Unit (EABF), Financial Secretary's Office, in its estimate of value added by IVS visitors, gives the ECBT of "M-permit" visitors in 2009 (\$21 million generated by 758,383 "M-permit" visitors) (EABF 2010). "M-permit" visitors are from Shenzhen and nearly all of them come to Hong Kong by land as there is no flight between Shenzhen and Hong Kong.

$$L = \$21 \text{ million} / 758,383 = \$27.7 \text{ in 2009}$$

L is small because the majority of arrivals by land walk across the border to take connecting transportation in Hong Kong, which is classified as domestic transportation instead of cross-boundary transportation. For passengers who walk across the border, L is zero.

However, a minority of arrivals by land take cross-boundary transportation such as through-train (intercity train or the Express Rail), or through-vans with dual license plates. L is thus a weighted average of those who walk across and those who take cross-boundary vehicles.

We further assume L was constant from 2007 to 2019. This assumption does not appear to be realistic as there would be inflation over time. However, as L is very small, adjusting L for inflation does not change our

estimates significantly. As will be seen below, the ECBT of air travel plays a dominating role in our estimates.

### **Per capita ECBT of arrivals by sea ('S')**

Let  $S$  be the per capita ECBT of arrivals by sea. The bulk of arrivals by sea come from neighbouring areas of the Pearl River Delta. The ferry fare is around a couple of hundred dollars. Unfortunately, we do not have direct information to estimate  $S$  as there is no data on the shares of the fares of ferries that accrue to the Hong Kong side.

To solve this problem, we proxy  $S$  by the average fare shared by the Hong Kong side in the Guangzhou-Shenzhen-Hong Kong Express Rail Link (henceforth XRL). Data on fare shares of the XRL are available in detail (Legislative Council Panel on Transport, 2018). Moreover, the XRL provides the competitive standard for ferries as XRL is the dominant mode of cross-boundary transportation in the area.

$S$ , as estimated from the shared fares of 6 short-haul destinations, is \$95.7. Again, we assume  $S$  to be constant in our period of study. Variations of  $S$  do not affect our results significantly as  $S$  is small, and the number of passengers arriving by sea is also relatively small (only 7% of visitor arrivals in 2019). We assume that the per capita ECBT of Cruise-in/Cruise-out passengers (who accounted for only 0.2% of visitor arrivals in 2019) is also  $S$ .

### **3. ECBT of arrivals by air**

From total ECBT of all passengers, we deduct the ECBT of arrivals by land and by sea to obtain the ECBT of arrivals by air, where

ECBT of arrivals by land =  $L$  x number of arrivals by land, and

ECBT of arrivals by sea =  $S$  x number of arrivals by sea

**Per capita EBCT of arrivals by air (short-haul flight)**

Let A be the per capita EBCT of an arrival by air (short-haul flight). 'A' is estimated as follows:

- (1) We assume that the per capita ECBT of an arrival by long-haul flight is twice that of a short-haul flight.
- (2) For visitors, the number of arrivals by long-haul and short-haul flights are known. For transit/transfer international passengers (non-visitors), we assume that the proportion of long-haul flights in total flights is the same as that of visitors.
- (3) From the above two assumptions, we can easily convert long-haul flights into 'short-haul flight equivalents'. We compute the number of 'short-haul flight equivalents' for all international passengers.
- (4) From the above:

$$A = \frac{\text{(ECBT of passenger arrivals by air)}}{\text{(number of 'short-haul flight equivalents')}}$$

In 2018, 'A' is \$1850.

For each type of visitors, the number of arrivals by land, by sea, and by air (disaggregated by long-haul and short-haul) are known. Given our estimates of L, S, and A, the ECBT of each type of visitors can easily be computed.

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