

MasterCard

2015 Global Destination Cities Index



Tracking Global Growth: 2009-2015

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Introduction

With data going back to 2009, the Global Destination Cities Index charts how 132 of the most important cities in the world are connected through air travel - how many international visitors arrive at each of these 132 cities from the other cities; and how much these visitors spend during their visit.¹

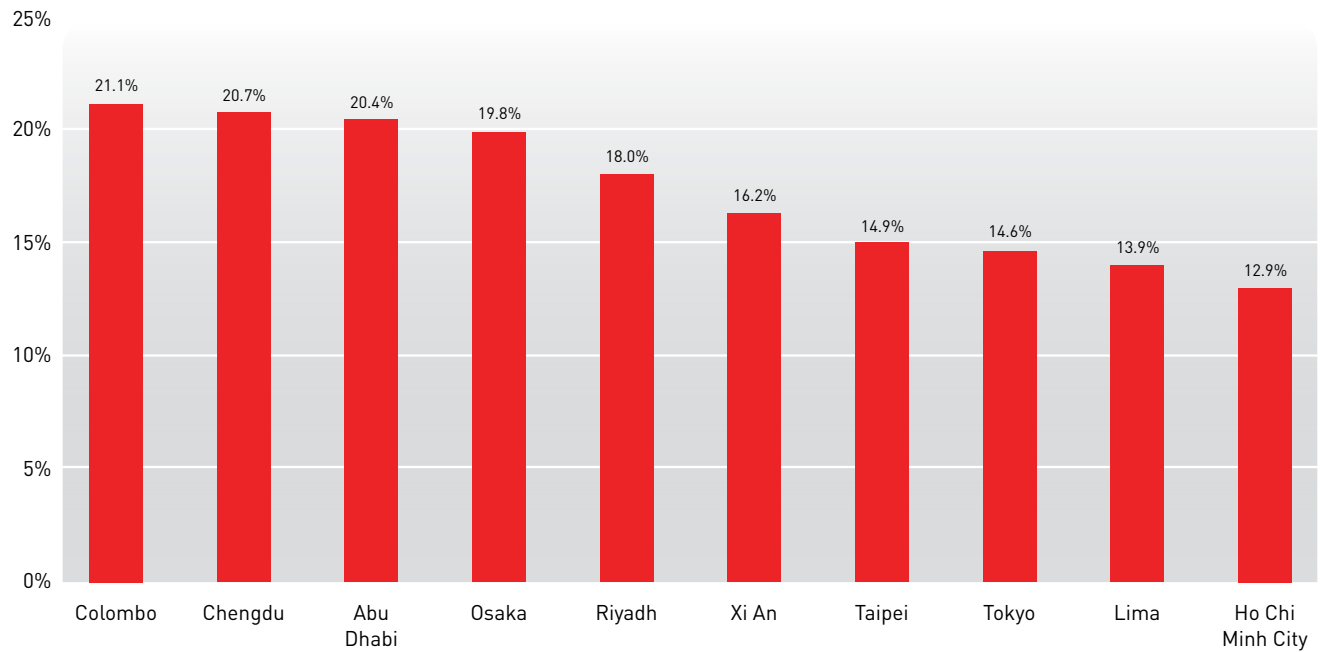
The Index is therefore a map of a key human dimension of global connectivity. And over the five years since its launch in 2011, this map shows consistently great dynamism and growth in air travel between these 132 cities, driven by improving infrastructure, rising discretionary spending power (especially in the expanding middle class in emerging markets), and the seemingly unquenchable thirst of an ever-increasing number of people from all walks of life to visit the world.



An interesting aspect of the dynamism of air travel can be seen in the top ten fastest growing destination cities over this seven-year period. As shown in **Chart 1**, the top ten include cities from most regions of the world except Western Europe and North America, as well as cities in both developed and developing countries. All of these fastest-growing cities show double-digit cumulative annual growth rates (CAGR).

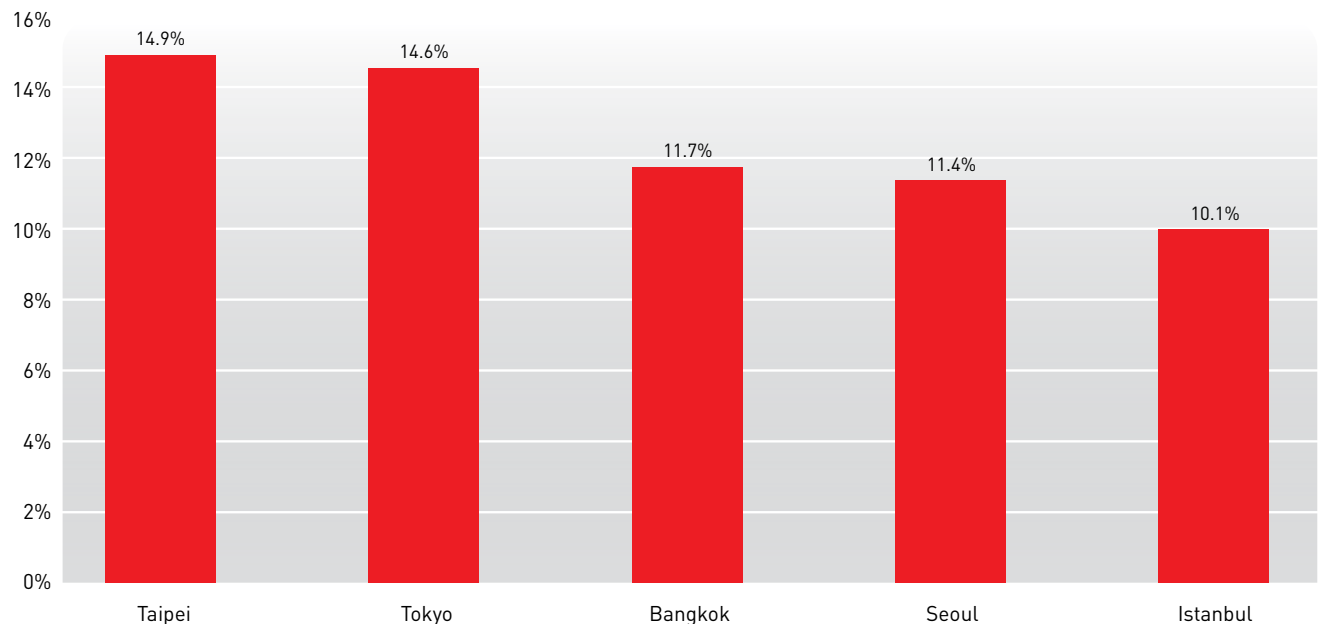
Colombo in Sri Lanka is the fastest growing destination city among the 132 cities covered by the Index at 21.1 percent CAGR between 2009 and 2015. Tourism there is clearly recovering strongly after the ending of its long-running civil war. Three cities in Greater China and two in Japan are also in the top ten, so are two in the Middle East. Many of these are coming off a very low base such as Colombo and Chengdu, but some of them, such as Tokyo, are already a leading destination city in terms of number of international visitors and yet are still showing impressive growth.

¹ Visitors are defined as those arriving from outside of the country and who stay at least one night in the destination city. See Appendix for more details.

CHART 1 Fastest Growing Destination Cities by International Overnight Visitors (2009-2015 CAGR)

Only destinations with more than 1 million international overnight arrivals in 2015 were included in this ranking

For comparison of destination cities with similar international visitor numbers, **Chart 2** shows the five fastest-growing over the 2009-2015 period among the top 20 destination cities in the world. A very different picture emerges in this comparison. Four out of five are in Asia led by Taipei, with the fifth, Istanbul, in Central Europe. These are destination cities that have big enough numbers of international visitors to put them in the top 20 of the world, and yet are still growing at double digits. And for the four Asian cities, their strong growth in visitors has come mostly from the massive increase in outbound travel from China.

CHART 2 Fastest Growing Destination Cities within the Top 20 (2009-2015 CAGR)

Growth Potential of Destination Cities

A prerequisite for any destination city that aspires to attract more international visitors is to increase the capacity of its airport(s) and frequency of flight connections between the airport and the rest of the world. A “connectivity score” is constructed to assess the destination cities in this regard.²

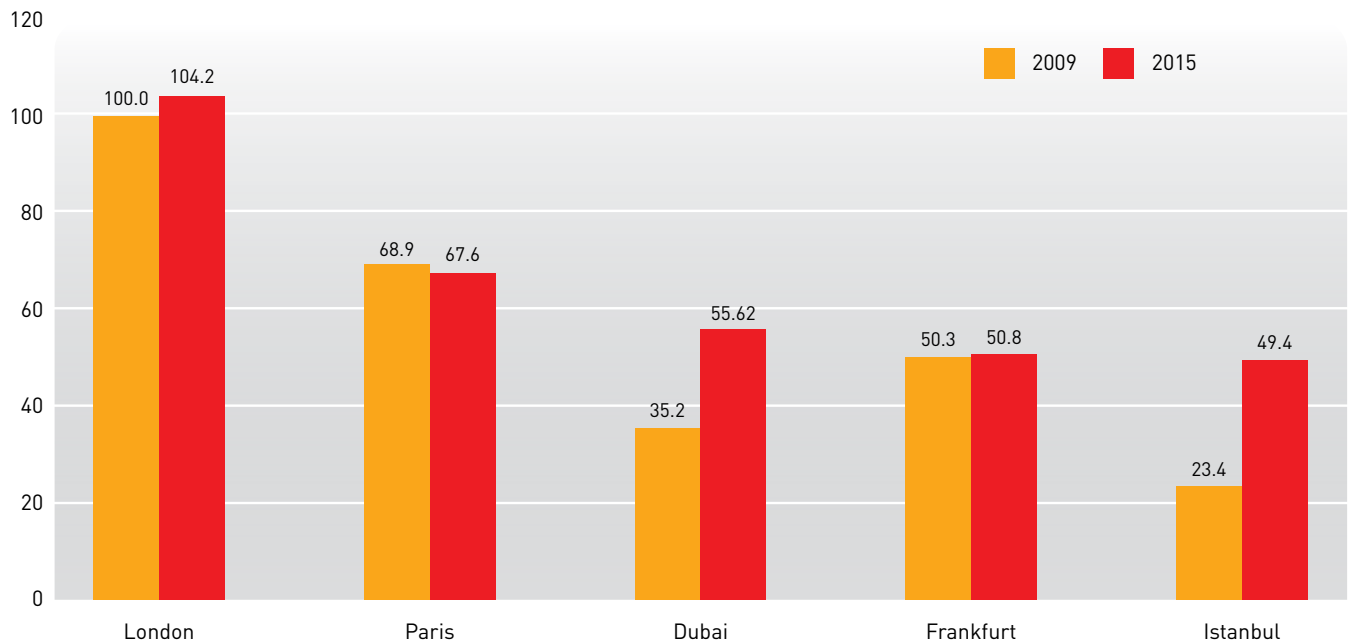
The top five destination cities and changes in their connectivity scores since 2009 are shown in **Chart 3**. London led the world in 2009, and by 2015 its connectivity score increased by 4.2 points. Paris is second, but its connectivity score has dropped by 1.3 points since 2009. Next is Dubai, increasing its score by an impressive 20.4 points, and surpassing Frankfurt between 2009 and 2015. Frankfurt slipped to fourth, with its score basically unchanged. Rounding out the top five, Istanbul increased its score by 26.0 points, exceeding the growth rate of Dubai. Not surprisingly, Dubai and Istanbul are dynamic destination cities moving rapidly up the ranks.

While these changing scores of air connectivity are indicative of the potential of the destination cities, they are not directly correlated with, at least not immediately, their international visitor arrivals. The international arrivals figures also include transit passengers, city residents returning from overseas trips, and passengers arriving from other domestic airports, which are excluded in the estimates of international overnight visitors.



London led the world in 2009, and by 2015 its connectivity score **increased by 4.2 points.**

CHART 3 Top 5 Global Leading Hubs by International Connectivity Score (London 2009 = 100)



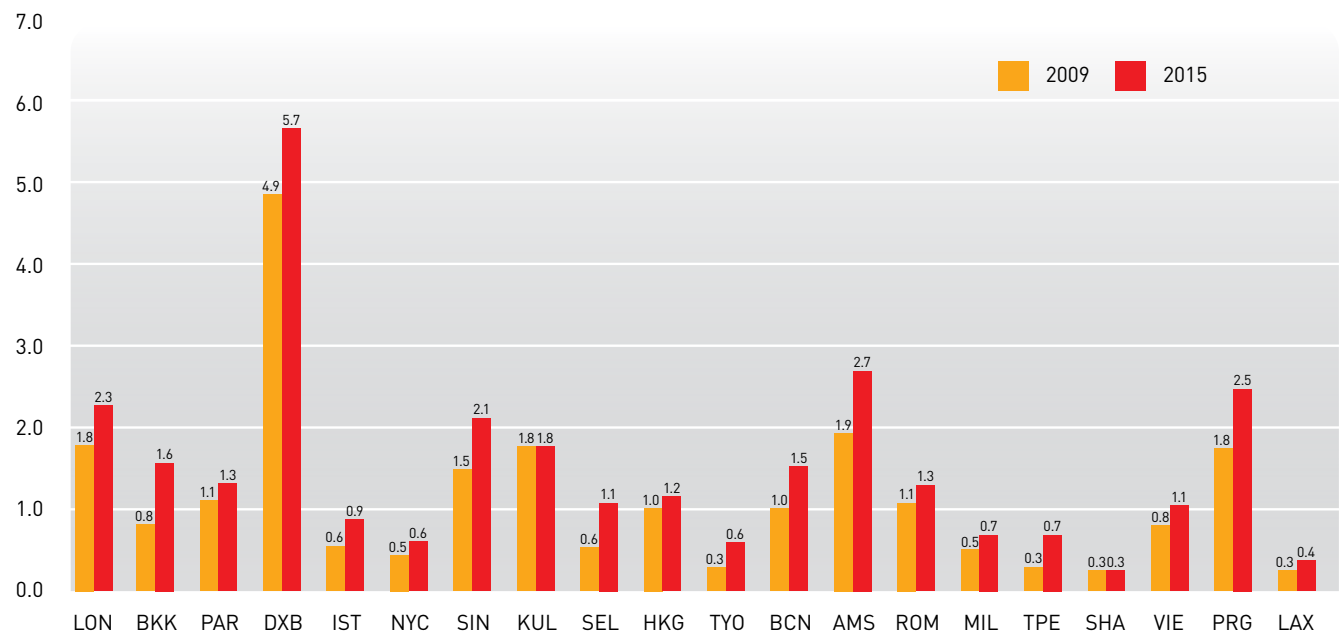
The Global Leading Air Hubs index is a connectivity index based on weekly non-stop flight frequencies to international city destinations; weighted in favor of inter-regional city pairs (as opposed to intra-regional city pairs). The index base of 100 is London's Raw Score in 2009.

² It is based on weekly non-stop flight frequencies to and from other destination cities, adjusted for capacity, with a heavier weight assigned to inter-region flights, and the value of London in 2009 is set as 100. Please see Appendix for more details.

A different way to gauge the performance of a destination city is to take into account the size of the city's resident population, and look at the number of international overnight visitors that it attracts per city resident. From this perspective, Dubai is the unmistakable world champion as shown in **Chart 4**. It went from 4.9 visitors per resident in 2009 to 5.7 in 2015, basically in a league of its own.

In contrast, some of the leading and most successful destination cities in the world have much lower visitor to resident ratios because of their large resident population, such as London and New York. Dubai is such an outlier because of both the large number of international visitors and the very small size of its resident population.

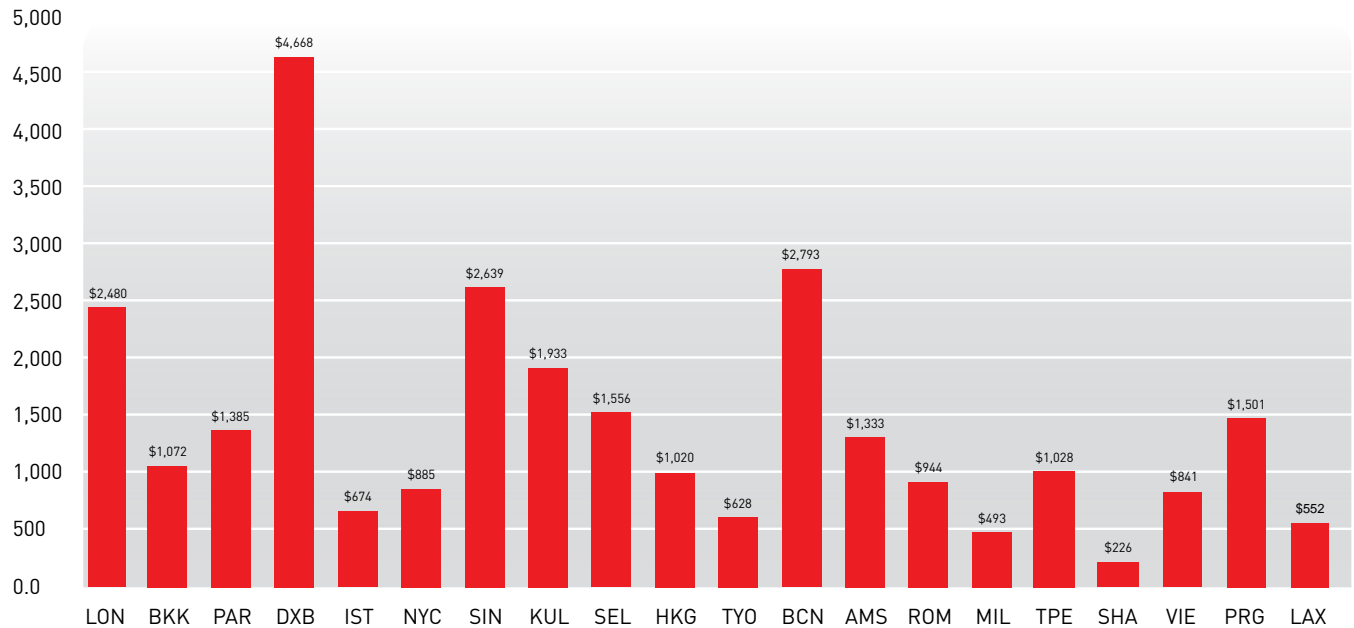
CHART 4 Top 20 Global Destinations by Overnight Visitor Arrivals per city resident 2009 versus 2015



LON: London, BKK: Bangkok, PAR: Paris, SIN: Singapore, IST: Istanbul, DXB: Dubai, NYC: New York, SEL: Seoul, KUL: Kuala Lumpur, HKG: Hong Kong, TYO: Tokyo, ROM: Rome, BCN: Barcelona, AMS: Amsterdam, TPE: Taipei, MIL: Milan, SHA: Shanghai, VIE: Vienna, LAX: Los Angeles, PRG: Prague

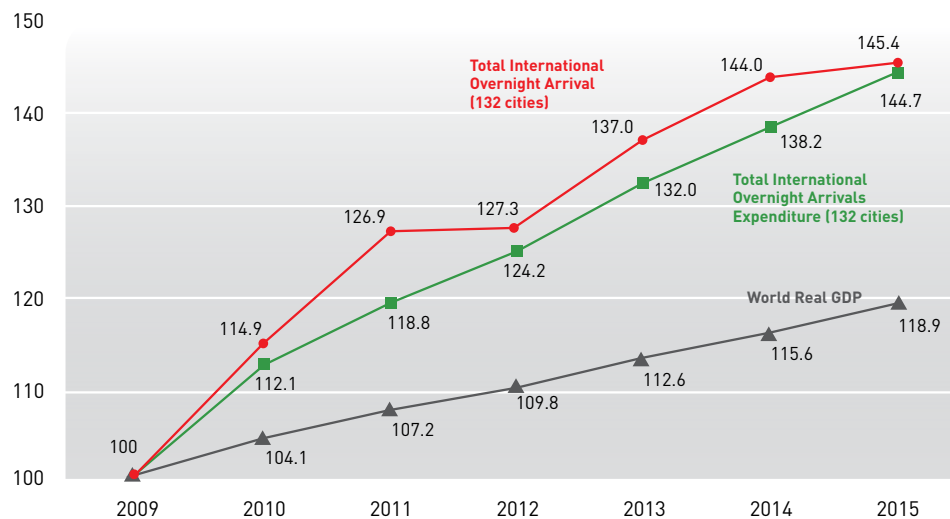
Similarly, Dubai leads the world in terms of international visitor spending per city resident, estimated at US\$4,668 in 2015 as shown in **Chart 5**. It is almost double the second-ranked Barcelona at US\$2,793. Singapore, London and Kuala Lumpur are in third, fourth and fifth ranks with international visitor spending per city resident estimated at US\$2,639, US\$2,480, and US\$1,933 respectively.

Dubai is the unmistakable world champion ...It went from 4.9 visitors per resident in 2009 to 5.7 in 2015.

CHART 5 Top 20 Global Destinations by Overnight Visitor Arrival Expenditure per City Resident in 2015

LON: London, BKK: Bangkok, PAR: Paris, SIN: Singapore, IST: Istanbul, DXB: Dubai, NYC: New York, SEL: Seoul, KUL: Kuala Lumpur, HKG: Hong Kong, TYO: Tokyo, ROM: Rome, BCN: Barcelona, AMS: Amsterdam, TPE: Taipei, MIL: Milan, SHA: Shanghai, VIE: Vienna, LAX: Los Angeles, PRG: Prague

Last but not least, a note-worthy feature of the human connectivity dimension captured by the Index is that international visitor numbers and their cross-border spending have been consistently growing faster than world real GDP since 2009, as illustrated in **Chart 6**.

CHART 6 World GDP Growth Versus the Growth of International Visitor Arrivals and Spend by the 132 Destinations

World GDP Source: IMF WEO, calculated at market exchange rates

International visitor numbers and their cross-border spending have been **consistently growing faster** than world real GDP since 2009.

This is extraordinary given the generally weak and uneven global economic recovery in the aftermath of the 2008/09 global financial crisis, as well as the fact that world trade grew slower than world GDP since 2009. International air travel is clearly a powerful trend that will persist in the years to come.

In 2015, it is expected that 382.9 million trips will be made by international visitors by air between the 132 cities covered by the Index, spending a total of US\$360 billion during their visits. These numbers represent a massive source of demand for goods and services, generating business opportunities for a wide range of industries, benefiting companies large and small, and creating jobs that cover the spectrum from the highly skilled to the low-skilled.

Because the demand comes from visitors from outside of the country, it is equivalent to exports, hence serving to simulate the local economies as a force multiplier that further strengthens domestic demand. In connecting the world, air travel is also vital to the well-being of the local economies in the destination cities.

In 2015, it is expected that **382.9 million trips** will be made by international visitors by air between the 132 cities covered by the Index.

Top 20 Global Destination Cities in 2015

London is again the world top-ranked destination city with 18.82 million international visitors expected in 2015, slightly ahead of the second-ranked Bangkok with 18.24 million. London has topped the Index in five out of seven years, except 2012 and 2013, when Bangkok held the lead position.

Given the very thin margin that London has over Bangkok, about half a million international visitors, their rivalry for the top rank is likely to persist. They are followed by Paris, Dubai, Istanbul, New York, Singapore, Kuala Lumpur, Seoul and Hong Kong in the world top ten.

Apart from Istanbul moving up from seventh to fifth rank, pushing New York and Singapore down by one rank, the top 20 in 2015 are identical to the top 20 in 2014.



CHART 7 Global Top 20 Top Destination Cities by International Overnight Visitors (2015)



London is again the world top-ranked destination city with **18.82 million international visitors** expected in 2015, slightly ahead of the second-ranked Bangkok with 18.24 million.

Table 1 shows the growth rates of the world top 20 destination cities between 2014 and 2015 (2014 rank in parenthesis). Istanbul shows the strongest growth at 11.4 percent, moving to fifth from seventh. Both Bangkok and Dubai grew by 8.0 percent, the second fastest after Istanbul.

TABLE 1 Global Top 20 Destination Cities by International Overnight Visitors (2015)

2015 rank (2014 rank)	Destination City	Country	2015 Overnight International Visitors (millions)						2015 Visitor (millions)
			1 (1)	2012	2013	2014	2015	%Δ 2014 & 2015	
1 (1)	London	United Kingdom	15.29	15.46	16.78	17.75	18.82	6.0%	\$20.2
2 (2)	Bangkok	Thailand	13.80	15.82	17.47	16.89	18.24	8.0%	\$12.4
3 (3)	Paris	France	14.02	14.29	15.52	15.56	16.06	3.2%	\$16.6
4 (4)	Dubai	UAE	9.91	10.94	12.18	13.20	14.26	8.0%	\$11.7
5 (7)↑	Istanbul	Turkey	7.51	8.82	9.87	11.27	12.56	11.4%	\$9.4
6 (5)↓	New York	USA	10.26	10.59	11.07	11.86	12.27	3.5%	\$17.4
7 (6)↓	Singapore	Singapore	10.39	11.10	11.90	11.53	11.88	3.0%	\$14.7
8 (8)	Kuala Lumpur	Malaysia	9.48	9.63	9.89	10.53	11.12	5.6%	\$12.0
9 (9)	Seoul	South Korea	6.56	7.51	8.03	9.84	10.35	5.2%	\$15.2
10 (10)	Hong Kong	Hong Kong (SAR) China	8.43	8.37	8.26	8.37	8.66	3.5%	\$7.4
11 (11)	Tokyo	Japan	3.26	4.89	5.40	7.68	8.08	5.1%	\$8.4
12 (12)	Barcelona	Spain	6.89	6.91	7.18	7.42	7.63	2.9%	\$13.9
13 (13)	Amsterdam	Netherlands	6.06	6.10	6.65	7.29	7.44	2.1%	\$3.7
14 (14)	Rome	Italy	6.66	6.73	7.04	7.05	7.41	5.0%	\$5.3
15 (15)	Milan	Italy	6.59	6.88	6.99	7.01	7.17	2.3%	\$4.9
16 (16)	Taipei	Chinese Taipei	3.96	4.70	5.83	6.38	6.55	2.5%	\$9.3
17 (17)	Shanghai	China	6.18	6.04	5.71	5.68	5.85	3.0%	\$5.1
18 (18)	Vienna	Austria	5.08	5.38	5.55	5.66	5.81	2.6%	\$4.6
19 (19)	Prague	Czech Republic	4.36	4.92	5.05	5.23	5.47	4.5%	\$3.3
20 (20)	Los Angeles	USA	4.45	4.48	4.60	4.94	5.20	5.3%	\$7.4

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London is also the top city by visitor cross-border spending, estimated at US\$20.23 billion in 2015. This is over 16 percent higher than the second-ranked New York at US\$17.27 billion, underscoring London's preeminent position as a leading destination city. Even though Bangkok ranks second in international visitors, it ranks seventh in visitor spending, reflecting its lower costs of living.

CHART 8 Global Top 20 Destination Cities by International Overnight Visitor Spend (2015)

Bangkok has the fastest growth rate in **visitor spending at 11.8 percent** between 2014 and 2015.

In spite of ranking only seventh in visitors' cross-border spending, however, Bangkok has the fastest growth rate in visitor spending at 11.8 percent between 2014 and 2015. Kuala Lumpur's growth is the second fastest at 8.7 percent; followed by Istanbul and Dubai respectively. However, eight of the top 20 show contraction in visitor cross-border spending in 2015 which is to a large extent the result of the depreciation of their currencies against the U.S. dollar, which is used to estimate cross-border spending for all the destination cities.

The biggest contraction is seen in Tokyo (-6.8 percent), followed by Sydney, Barcelona, Taipei, Madrid and Rome. While the currencies of Thailand, Malaysia, Turkey and the UAE have also depreciated against the U.S. dollar, their visitor spending has increased strongly enough to compensate for the effects of currency depreciation to show robust growth.

TABLE 2 Global Top 20 Destination Cities by International Overnight Visitor Spend (2015)

2015 rank (2014 rank)	Destination City	Country	2015 Overnight International Visitor Spend (US\$ bn)						2015 Visitor
			1 (1)	2012	2013	2014	2015	%Δ 2014 & 2015	
1 (1)	London	United Kingdom	\$15.09	\$15.97	\$17.61	\$19.77	\$20.23	2.3%	18.8
2 (3)↑	New York	USA	\$15.82	\$14.83	\$16.14	\$16.85	\$17.37	3.1%	12.3
3 (2)↓	Paris	France	\$14.95	\$14.53	\$16.92	\$16.89	\$16.61	-1.6%	16.1
4 (5)↑	Seoul	South Korea	\$8.18	\$9.87	\$11.96	\$14.65	\$15.24	4.0%	10.3
5 (4)↓	Singapore	Singapore	\$14.52	\$15.22	\$15.44	\$14.91	\$14.65	-1.8%	11.9
6 (6)	Barcelona	Spain	\$10.63	\$11.05	\$13.12	\$14.38	\$13.86	-3.6%	7.6
7 (7)	Bangkok	Thailand	\$9.43	\$11.12	\$12.39	\$11.06	\$12.36	11.8%	18.2
8 (8)	Kuala Lumpur	Malaysia	\$9.43	\$10.11	\$10.39	\$11.06	\$12.02	8.7%	11.1
9 (9)	Dubai	UAE	\$8.14	\$9.13	\$10.04	\$10.90	\$11.68	7.1%	14.3
10 (12)↑	Istanbul	Turkey	\$5.32	\$6.31	\$7.39	\$8.73	\$9.37	7.3%	12.6
11 (10)↓	Taipei	Chinese Taipei	\$7.22	\$7.62	\$8.98	\$9.50	\$9.28	-2.3%	6.5
12 (11)↓	Tokyo	Japan	\$4.78	\$5.53	\$5.64	\$9.06	\$8.44	-6.8%	8.1
13 (14)↑	Hong Kong	Hong Kong (SAR) China	\$6.90	\$7.11	\$7.03	\$7.11	\$7.44	4.6%	8.7
14 (15)↑	Los Angeles	USA	\$6.85	\$6.26	\$6.70	\$7.02	\$7.36	4.9%	5.2
15 (13)↓	Madrid	Spain	\$7.22	\$6.29	\$6.67	\$7.28	\$7.13	-2.1%	4.7
16 (17)↑	Miami	USA	\$5.00	\$5.28	\$6.28	\$6.26	\$6.40	2.2%	4.5
17 (16)↓	Sydney	Australia	\$6.32	\$6.56	\$6.49	\$6.46	\$6.15	-4.8%	3.4
18 (18)	Munich	Germany	\$4.99	\$4.99	\$5.45	\$5.61	\$5.57	-0.7%	4.9
19 (19)	Rome	Italy	\$5.73	\$5.36	\$5.57	\$5.40	\$5.29	-1.9%	7.4
20 (21)↑	Berlin	Germany	\$4.49	\$4.65	\$5.11	\$5.26	\$5.22	-0.7%	4.5

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Top 10 Destination Cities in Asia/Pacific

The top ten destination cities in Asia/Pacific and their visitor numbers and cross-border spending are summarized in **Table 3**. Bangkok, ranked second in the world, is the top destination in Asia/Pacific. The Asia/Pacific ranking of the top nine out of ten are unchanged from 2014. But, Osaka moved into tenth, displacing Melbourne.

In terms of cross-border spending, Seoul leads in Asia/Pacific with an expected US\$15.2 billion, followed by Singapore at US\$14.7 billion, Bangkok at US\$12.4 billion, Kuala Lumpur at US\$12.0 billion, and Taipei at US\$9.3 billion.



Bangkok,
ranked second
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is the top
destination in
Asia/Pacific.

TABLE 3 Asia/Pacific's Top 10 Destination Cities by International Overnight Visitors and Cross-Border Spending (2015)

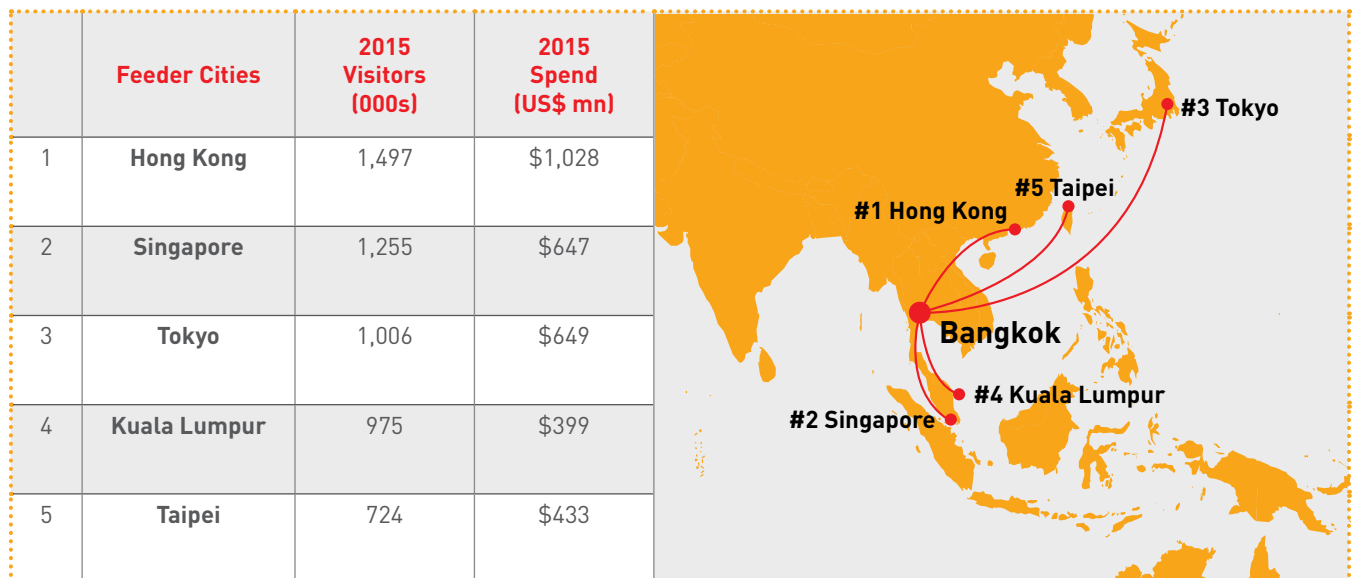
2015 rank (2014 rank)	Destination City	Country	2015 Overnight International Visitors (millions)						2015 Visitor Spend (US\$bn)
			2011	2012	2013	2014	2015	%Δ 2014 & 2015	
1 (1)	Bangkok	Thailand	13.80	15.82	17.47	16.89	18.24	8.0%	\$12.4
2 (2)	Singapore	Singapore	10.39	11.10	11.90	11.53	11.88	3.0%	\$14.7
3 (3)	Kuala Lumpur	Malaysia	9.48	9.63	9.89	10.53	11.12	5.6%	\$12.0
4 (4)	Seoul	South Korea	6.56	7.51	8.03	9.84	10.35	5.2%	\$15.2
5 (5)	Hong Kong	Hong Kong (SAR) China	8.43	8.37	8.26	8.37	8.66	3.5%	\$7.4
6 (6)	Tokyo	Japan	3.26	4.89	5.40	7.68	8.08	5.1%	\$8.4
7 (7)	Taipei	Chinese Taipei	3.96	4.70	5.83	6.38	6.55	2.5%	\$9.3
8 (8)	Shanghai	China	6.18	6.04	5.71	5.68	5.85	3.0%	\$5.1
9 (9)	Mumbai	India	4.82	2.65	4.16	4.45	4.75	6.6%	\$3.3
10 (11)↑	Osaka	Japan	1.81	2.41	3.32	4.22	4.58	8.5%	\$2.7

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Chart 9 shows the contributions to Bangkok from its top five feeder cities. All five are in Asia/Pacific, and the most important feeder city for Bangkok is Hong Kong, accounting for 1.5 million visitors and just over US\$1 billion in spending. Singapore follows with about 1.3 million visitors and US\$647 million spending, and so on.

CHART 9 Bangkok's Top 5 Feeder Cities (2015)



Singapore's top five feeder cities are also all from Asia/Pacific. Jakarta looms large as the top feeder city for Singapore, contributing 1.7 million visitors and US\$2.7 billion with an average spend per visit at impressively high at US\$1,550. This is far above those from the other top feeder cities of Tokyo, Hong Kong, Manila and Shanghai.

CHART 10 Singapore's Top 5 Feeder Cities (2015)

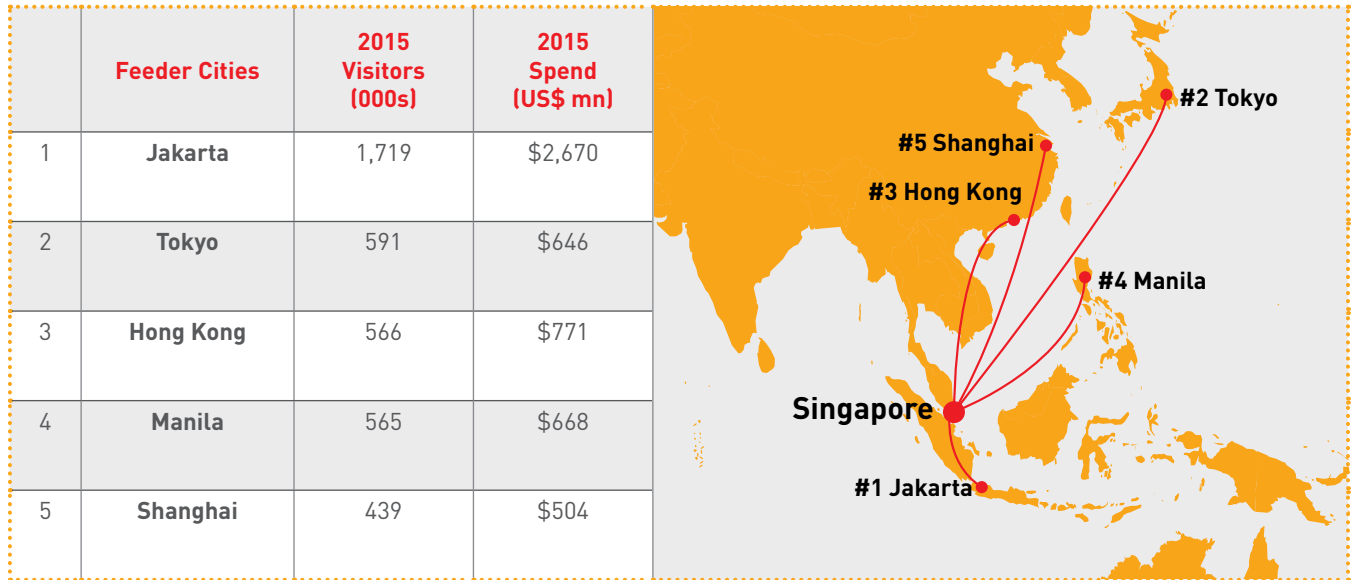




CHART 11 Kuala Lumpur's Top 5 Feeder Cities (2015)

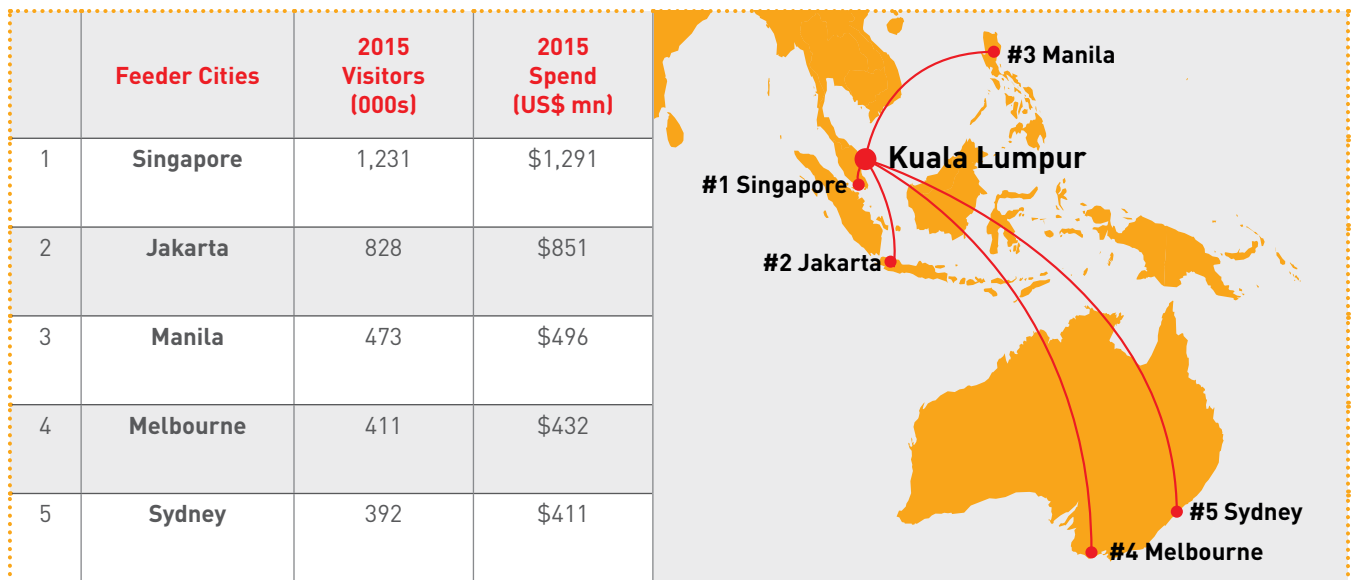


Chart 11 shows Kuala Lumpur's top five feeder cities, which are clustered in Southeast Asia and the two Australian cities of Sydney and Melbourne. Singapore is the most important feeder city for Kuala Lumpur, accounting for 1.2 million visitors and US\$1.3 billion in spending.

From the perspective of cumulative growth since 2009, the top ten fastest growing destination cities in Asia/Pacific are summarized in **Table 4**. Colombo in Sri Lanka is the fastest growing with a CAGR of 21.1 percent, albeit coming off a very low base, with just over one million visitors in 2005. Chengdu in the Sichuan Province of China is the second fastest growing, with a CAGR of 20.7 percent. It is also growing from a low base, with about 1.5 million visitors in 2015.

Osaka is the third fastest, but it is already a top-ranked destination city with 4.6 million visitors in 2015. Osaka's strong growth in recent years is due to a massive increase of visitors from China, which has also driven up growth of visitors to Tokyo, making it the sixth fastest growing in Asia/Pacific. Bangkok, the world second-ranked, has managed an impressive CAGR of 11.7 percent, putting it in tenth, in terms of growth rates in the region.

Colombo in Sri Lanka is the fastest growing with a CAGR of 21.1 percent.

TABLE 4 Asia/Pacific's Fastest Growing Destination Cities by International Overnight Visitors (2009 – 2015 CAGR)

Rank	Destination City	Country	2015 Overnight International Visitors (millions)						2015 Visitor Spend (US\$bn)
			2011	2012	2013	2014	2015	% CAGR 2009 & 2015	
1	Colombo	Sri Lanka	0.61	0.69	0.74	0.89	1.02	21.1%	\$0.9
2	Chengdu	China	1.01	1.30	1.49	1.48	1.49	20.7%	\$0.6
3	Osaka	Japan	1.81	2.41	3.32	4.22	4.58	19.8%	\$2.7
4	Xi An	China	0.69	0.80	1.14	1.15	1.18	16.2%	\$0.6
5	Taipei	Chinese Taipei	3.96	4.70	5.83	6.38	6.55	14.9%	\$9.3
6	Tokyo	Japan	3.26	4.89	5.40	7.68	8.08	14.6%	\$8.4
7	Ho Chi Minh City	Viet Nam	2.62	2.77	3.06	3.19	3.42	12.9%	\$2.6
8	Hanoi	Viet Nam	1.26	1.60	1.77	1.84	2.03	12.2%	\$0.9
9	Mumbai	India	4.82	2.65	4.16	4.45	4.75	11.8%	\$3.3
10	Bangkok	Thailand	13.80	15.82	17.47	16.89	18.24	11.7%	\$12.4

Only destinations with more than 1 million international overnight arrivals in 2015 were included in this ranking

Top 10 Destination Cities in Europe

London, the world's number one, is naturally the top-ranked in Europe as well. It is followed by Paris and Istanbul in second and third respectively. Istanbul, however, has a much higher growth rate than Paris. If these two cities continue to grow their international visitors' numbers at the current rates, in four years, Istanbul will overtake Paris to become second-ranked in Europe.

In terms of visitor cross-border spending, London is also ranked first with over US\$20 billion estimated for 2015, followed by Paris, Barcelona, Istanbul, Madrid and Munich.



TABLE 5 Europe's Top 10 Destination Cities by International Overnight Visitors and Cross-Border Spending (2015)

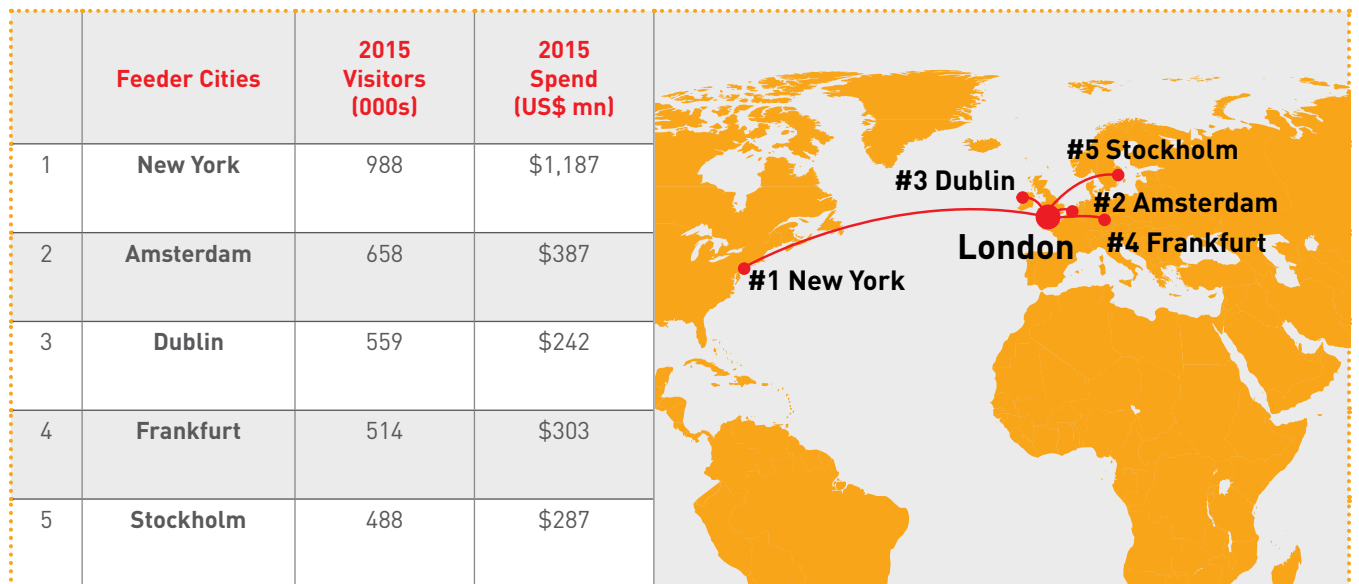
2015 rank (2014 rank)	Destination City	Country	2015 Overnight International Visitors (millions)						2015 Visitor Spend (US\$bn)
			1 (1)	2012	2013	2014	2015	%Δ 2014 & 2015	
1 (1)	London	United Kingdom	15.29	15.46	16.78	17.75	18.82	6.0%	\$20.2
2 (2)	Paris	France	14.02	14.29	15.52	15.56	16.06	3.2%	\$16.6
3 (3)	Istanbul	Turkey	7.51	8.82	9.87	11.27	12.56	11.4%	\$9.4
4 (4)	Barcelona	Spain	6.89	6.91	7.18	7.42	7.63	2.9%	\$13.9
5 (5)	Amsterdam	Netherlands	6.07	6.10	6.65	7.29	7.44	2.1%	\$3.7
6 (6)	Rome	Italy	6.66	6.73	7.04	7.05	7.41	5.0%	\$5.3
7 (7)	Milan	Italy	6.59	6.88	6.99	7.01	7.17	2.3%	\$4.9
8 (8)	Vienna	Austria	5.08	5.38	5.55	5.66	5.81	2.6%	\$4.6
9 (9)	Prague	Czech Republic	4.36	4.92	5.05	5.23	5.47	4.5%	\$3.3
10 (10)	Munich	Germany	4.01	4.38	4.58	4.79	4.86	1.3%	\$5.6

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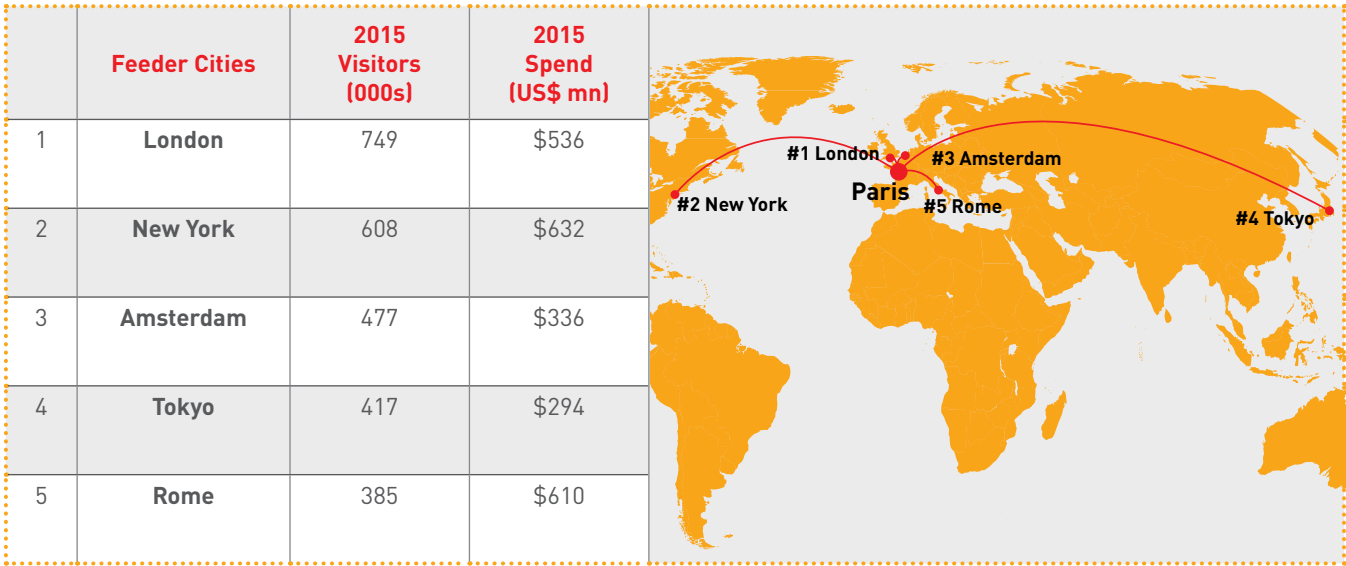
New York is the most important feeder city for London, accounting for close to a million visitors in 2015 and about US\$1.2 billion of spending. New York is followed by Amsterdam, Dublin, Frankfurt and Stockholm. **Chart 12** summarizes the details of the top five feeder cities for London.

CHART 12 London's Top 5 Feeder Cities (2015)



London is the most important feeder city for Paris in terms of visitors. Interestingly, two of the top five feeder cities for Paris are outside of Europe; New York (ranked second) and Tokyo (ranked fourth). As **Chart 13** shows, in spending terms, New York is the biggest feeder city for Paris, estimated at US\$632 million in 2015.

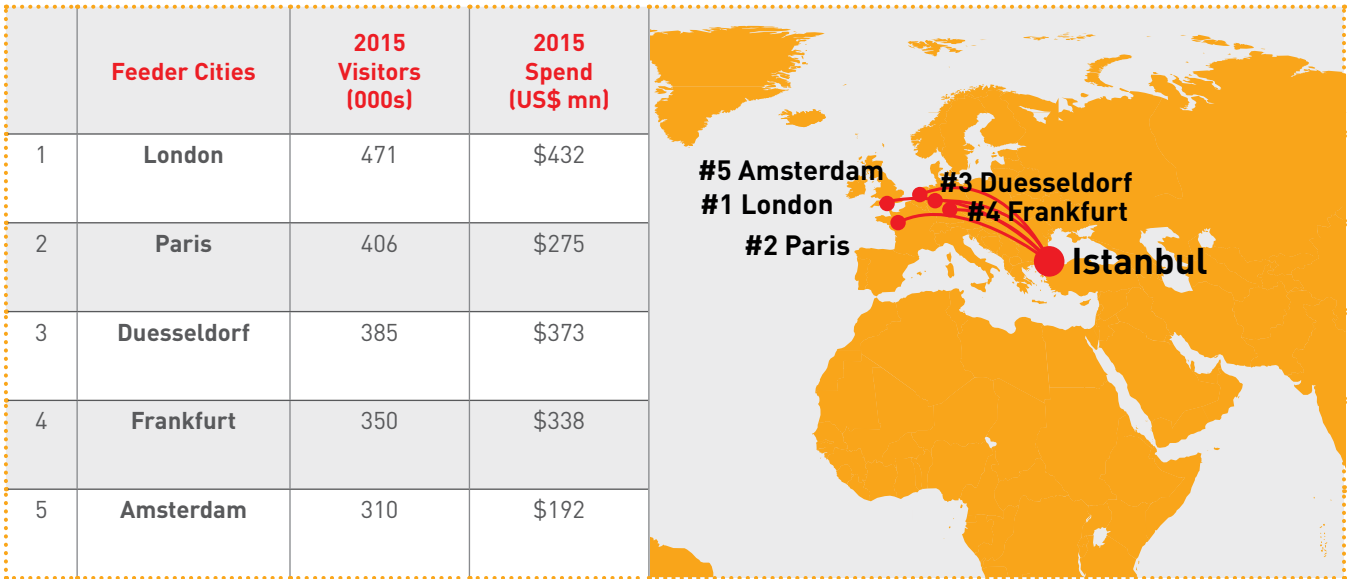
CHART 13 Paris's Top 5 Feeder Cities (2015)





All top five feeder cities for Istanbul are in Europe, and London is the most important, followed by Paris, Dusseldorf, Frankfurt and Amsterdam, as seen in **Chart 14**. London is also the biggest feeder city in terms of visitor spending, estimated at US\$432 million in 2015.

CHART 14 Istanbul's Top 5 Feeder Cities (2015)



Istanbul is currently the fastest growing destination city in Europe. Three cities in Eastern Europe are also among the top ten fastest growing European destination cities: Bucharest (ranked sixth), Budapest (ranked seventh), and Warsaw (ranked eighth). The details are summarized in **Table 6**.

Istanbul is currently the fastest growing destination city in Europe.

TABLE 6 Europe's Fastest Growing Destination Cities by International Overnight Visitors (2009 – 2015 CAGR)

	Destination City	Country	2015 Overnight International Visitors (millions)						2015 Visitor Spend (US\$bn)
			2011	2012	2013	2014	2015	% CAGR 2009 & 2015	
1	Istanbul	Turkey	7.51	8.82	9.87	11.27	12.56	10.1%	\$9.4
2	Hamburg	Germany	1.00	1.18	1.23	1.29	1.32	8.6%	\$1.5
3	Copenhagen	Denmark	1.20	1.31	1.39	1.53	1.56	8.3%	\$0.9
4	Lisbon	Portugal	2.51	2.64	2.93	3.40	3.56	8.3%	\$1.8
5	Berlin	Germany	3.60	4.08	4.29	4.49	4.55	7.9%	\$5.2
6	Bucharest	Romania	0.77	0.82	0.87	0.97	1.02	7.8%	\$0.3
7	Budapest	Hungary	2.44	2.81	2.99	3.12	3.16	7.4%	\$1.1
8	Warsaw	Poland	1.10	1.23	1.30	1.36	1.38	7.0%	\$0.4
9	Duesseldorf	Germany	1.50	1.60	1.69	1.77	1.79	6.9%	\$2.1
10	Barcelona	Spain	6.89	6.91	7.18	7.42	7.63	6.6%	\$13.9

Only destinations with more than 1 million international overnight arrivals in 2015 were included in this ranking.

Historical data in each times series presented above has been updated with the latest figures or estimations and may not be comparable to the time series from previous editions of this report

Top 10 Destination Cities in Latin America

The top ten destination cities in Latin America in 2015 are identical to 2014, as Lima tops the list with almost 50 percent more international visitors than second-ranked Mexico City. The Brazilian cities of São Paulo and Rio de Janeiro are in third and seventh, respectively.

In terms of visitor spending, however, Punta Cana in the Dominican Republic is in the top-ranked with an estimated US\$2.7 billion in 2015, followed by Buenos Aires and Mexico City both with US\$2.3 billion, São Paulo with US\$2.2 billion and Lima with US\$1.5 billion.



Lima tops the list with almost **50 percent more international visitors** than second-ranked Mexico City.

TABLE 7 Latin America's Top 10 Destination Cities by International Overnight Visitors and Cross-Border Spending (2015)

2015 rank (2014 rank)	Destination City	Country	2015 Overnight International Visitors (millions)						2015 Visitor Spend (US\$bn)
			2011	2012	2013	2014	2015	%Δ 2014 & 2015	
1 (1)	Lima	Peru	2.94	3.94	5.01	3.94	4.22	7.0%	\$1.5
2 (2)	Mexico City	Mexico	2.07	2.28	2.38	2.59	2.82	9.1%	\$2.3
3 (3)	São Paulo	Brazil	2.09	2.11	2.22	2.35	2.44	4.0%	\$2.2
4 (4)	Punta Cana	Dominican Republic	1.84	2.03	2.11	2.33	2.43	4.1%	\$2.7
5 (5)	Buenos Aires	Argentina	2.39	2.22	2.01	2.08	2.18	4.8%	\$2.3
6 (6)	San Jose	Costa Rica	1.42	1.41	1.43	1.44	1.51	4.9%	\$0.7
7 (7)	Rio de Janeiro	Brazil	0.98	1.13	1.18	1.23	1.27	3.7%	\$0.9
8 (8)	Bogota	Colombia	0.80	0.83	0.89	1.01	1.10	8.9%	\$1.0
9 (9)	Montevideo	Uruguay	0.85	0.78	0.77	0.84	0.86	2.1%	\$0.5
10 (10)	Quito	Ecuador	0.49	0.53	0.63	0.69	0.70	0.2%	\$0.4

Historical data in each times series presented above has been updated with the latest figures or estimations and may not be comparable to the time series from previous editions of this report



The top five feeder cities for Lima are shown in **Chart 15**. Santiago is its biggest feeder city, followed by Buenos Aires, Miami, Bogota, and Mexico City. In visitor spending, however, Buenos Aires overtakes Santiago as Lima's biggest feeder city.

CHART 15 Lima's Top 5 Feeder Cities (2015)

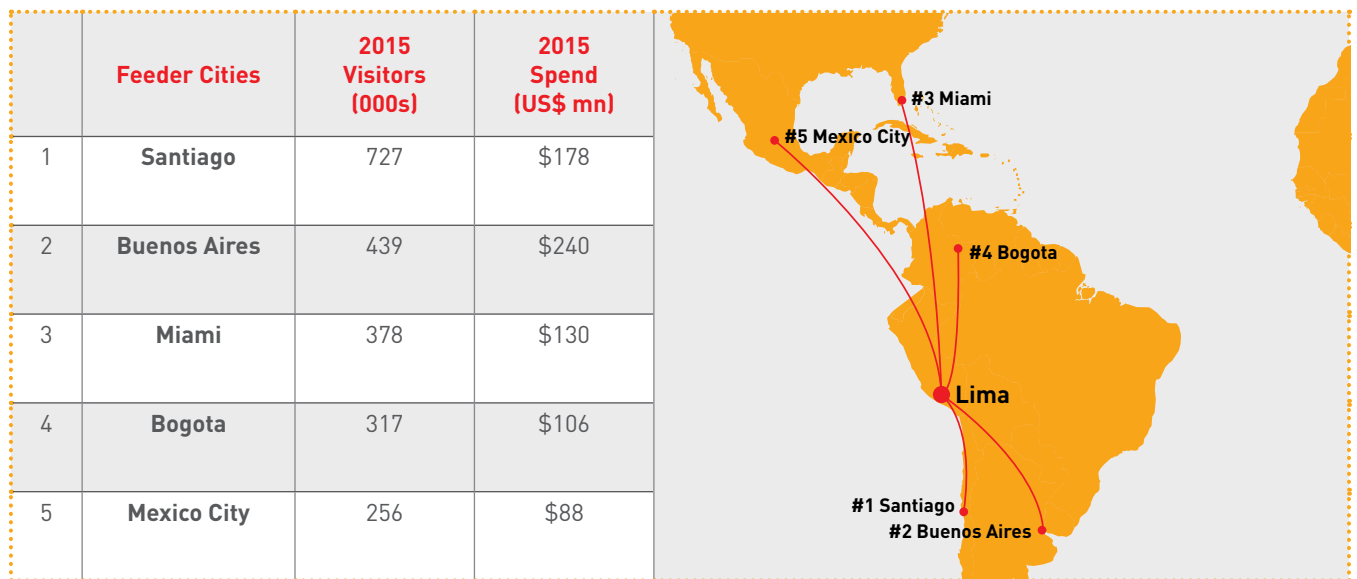
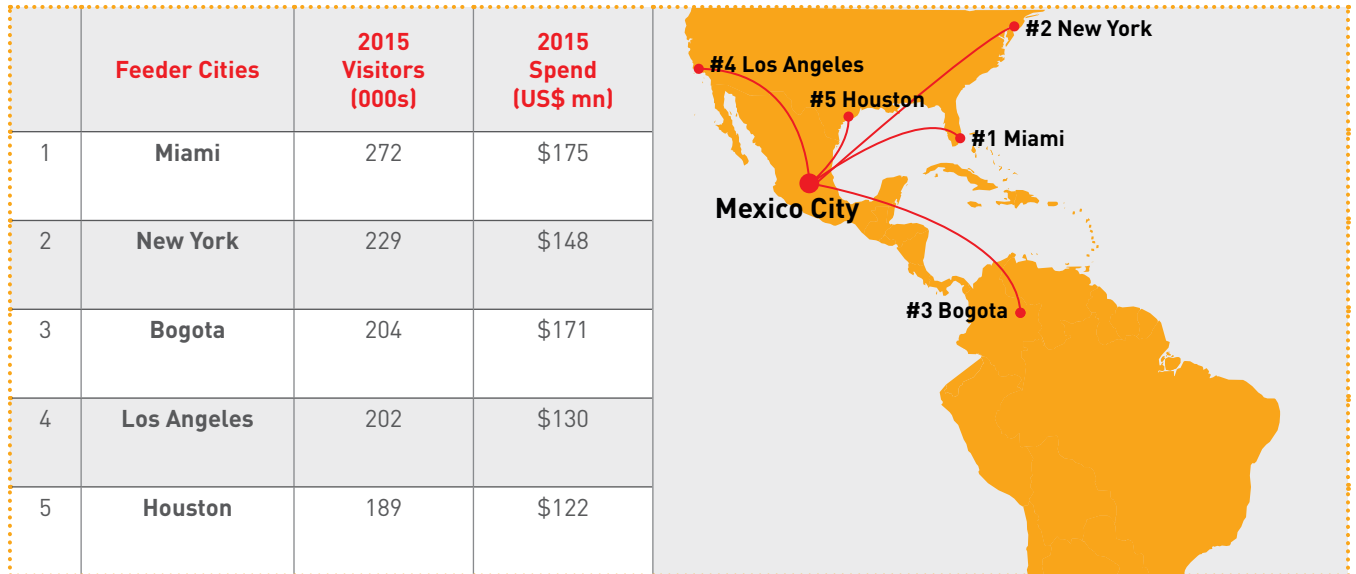


CHART 16 Mexico City's Top 5 Feeder Cities (2015)

For Mexico City, four out of the top five feeder cities are in North America. Miami is the biggest, followed by New York, Bogota, Los Angeles, and Houston. Miami is also the biggest feeder city in terms of visitor spending for Mexico City.

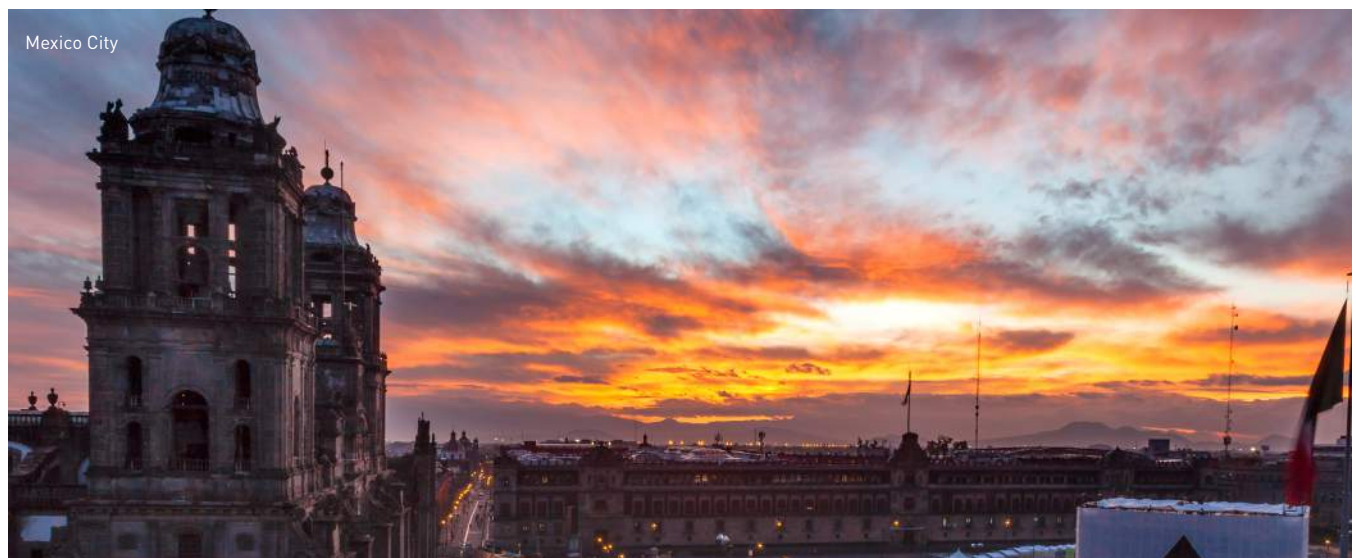
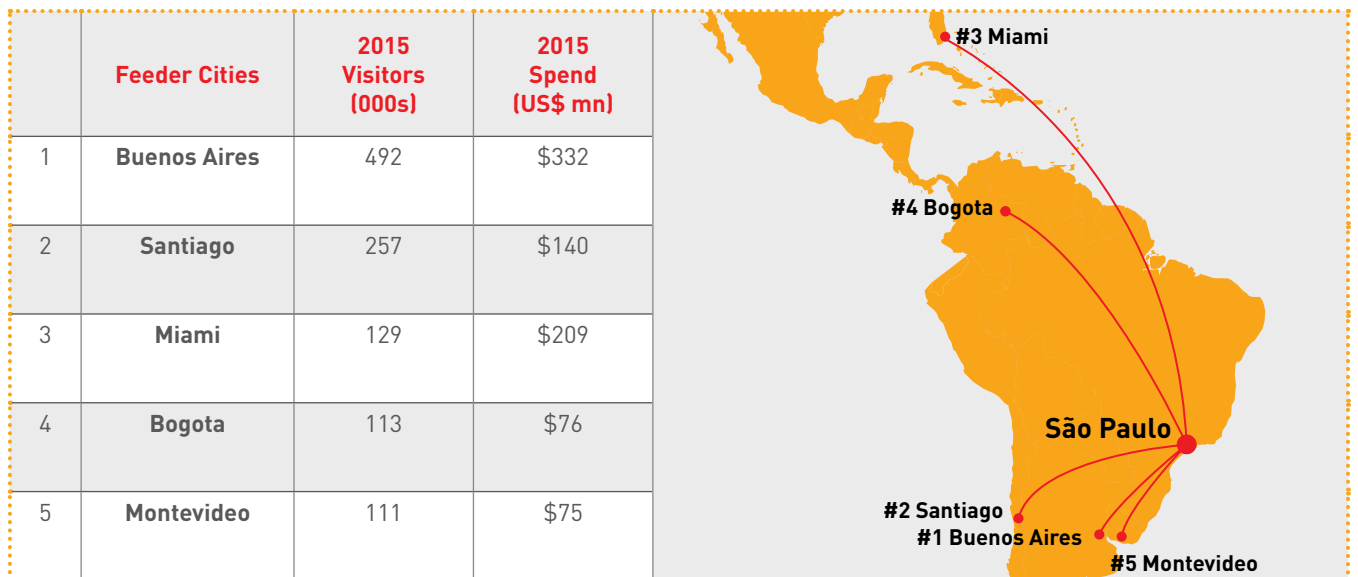




CHART 17 São Paulo's Top 5 Feeder Cities (2015)



São Paulo's top feeder cities, in comparison, are within the region with the exception of Miami, which is ranked third. The biggest is Buenos Aires in both number of visitors and their spending.

Lima, apart from being the top-ranked destination city in Latin America, is also the region's fastest growing. Mexico City, which is ranked second in international visitors, is only the fourth fastest growing, lagging behind Bogota and Punta Cana. Details of the growth rates of the top eight destination cities in Latin America are summarized in **Table 8**.

TABLE 8 Latin America's Fastest Growing Destination Cities by International Overnight Visitors (2009 – 2015 CAGR)

Rank	Destination City	Country	2015 Overnight International Visitors (millions)						2015 Visitor Spend (US\$bn)
			2011	2012	2013	2014	2015	% CAGR 2009 & 2015	
1	Lima	Peru	2.94	3.94	5.01	3.94	4.22	13.9%	\$1.5
2	Bogota	Colombia	0.80	0.83	0.89	1.01	1.10	8.8%	\$1.0
3	Punta Cana	Dominican Re-public	1.84	2.03	2.11	2.33	2.43	6.5%	\$2.7
4	Mexico City	Mexico	2.07	2.28	2.38	2.59	2.82	6.3%	\$2.3
5	Rio de Janeiro	Brazil	0.98	1.13	1.18	1.23	1.27	6.2%	\$0.9
6	São Paulo	Brazil	2.09	2.11	2.22	2.35	2.44	5.1%	\$2.2
7	San Jose	Costa Rica	1.42	1.41	1.43	1.44	1.51	2.9%	\$0.7
8	Buenos Aires	Argentina	2.39	2.22	2.01	2.08	2.18	2.7%	\$2.3

Only destinations with more than 1 million international overnight arrivals in 2015 were included in this ranking. Historical data in each times series presented above has been updated with the latest figures or estimations and may not be comparable to the time series from previous editions of this report

Top 20 Destination Cities in Middle East & Africa

Dubai, fourth in the world, is the top-ranked destination city in the Middle East and Africa region. Dubai is very much in a league of its own in the region. It attracts 14.3 million international visitors in 2015, over three times more than the second-ranked Johannesburg. Riyadh and Abu Dhabi follow in third and fourth, with 4.3 million and 2.7 million respectively. Another South African city, Cape Town, is in fifth, with close to 2 million international visitors.

Dubai's is also in the top rank in terms of visitor cross-border spending, estimated at US\$11.7 billion in 2015, four and a half times bigger than the second-ranked Johannesburg. As Chart 6.1 shows, the rest of the top ten destination cities in the region tend to have between US\$1 billion to US\$2 billion in visitor spending, with visitor spending in Casablanca estimated at US\$600 million.



Dubai attracts 14.3 million international visitors in 2015 over three times more than the second-ranked Johannesburg.

TABLE 9 Middle East & Africa's Top 10 Destination Cities by International Overnight Visitors and Cross-Border Spending (2015)

2015 rank (2014 rank)	Destination City	Country	2015 Overnight International Visitors (millions)						2015 Visitor Spend (US\$bn)
			2011	2012	2013	2014	2015	%Δ 2014 & 2015	
1 (1)	Dubai	UAE	9.91	10.94	12.18	13.20	14.26	8.0%	\$11.7
2 (2)	Johannesburg	South Africa	3.86	4.10	4.00	4.33	4.44	2.7%	\$2.6
3 (3)	Riyadh	Saudi Arabia	4.16	3.73	3.60	4.07	4.27	4.8%	\$1.9
4 (4)	Abu Dhabi	UAE	1.29	1.50	1.85	2.34	2.70	15.2%	\$2.2
5 (5)	Cape Town	South Africa	1.39	1.35	1.57	1.74	1.96	12.7%	\$2.1
6 (6)	Cairo	Egypt	1.55	1.83	1.50	1.55	1.70	9.4%	\$1.3
7 (7)	Amman	Jordan	1.11	1.29	1.17	1.23	1.31	6.5%	\$1.3
8 (8)	Beirut	Lebanon	1.14	0.98	1.07	1.19	1.15	-3.3%	\$1.3
9 (9)	Tel Aviv	Israel	0.97	0.97	1.00	0.97	1.05	7.6%	\$1.5
10 (10)	Casablanca	Morocco	0.81	0.85	0.94	0.95	0.97	1.9%	\$0.6

Historical data in each time series presented above has been updated with the latest figures or estimations and may not be comparable to the time series from previous editions of this report



Dubai's top five feeder cities are Doha, London, Kuwait, Muscat, and Jeddah as shown in **Chart 18**. London's contribution as a feeder city to visitor spending in Dubai, however, is the biggest at US\$1.34 billion estimated for 2015, which is about double the size of visitor spending from Doha at US\$740 million.

CHART 18 Dubai's Top 5 Feeder Cities (2015)

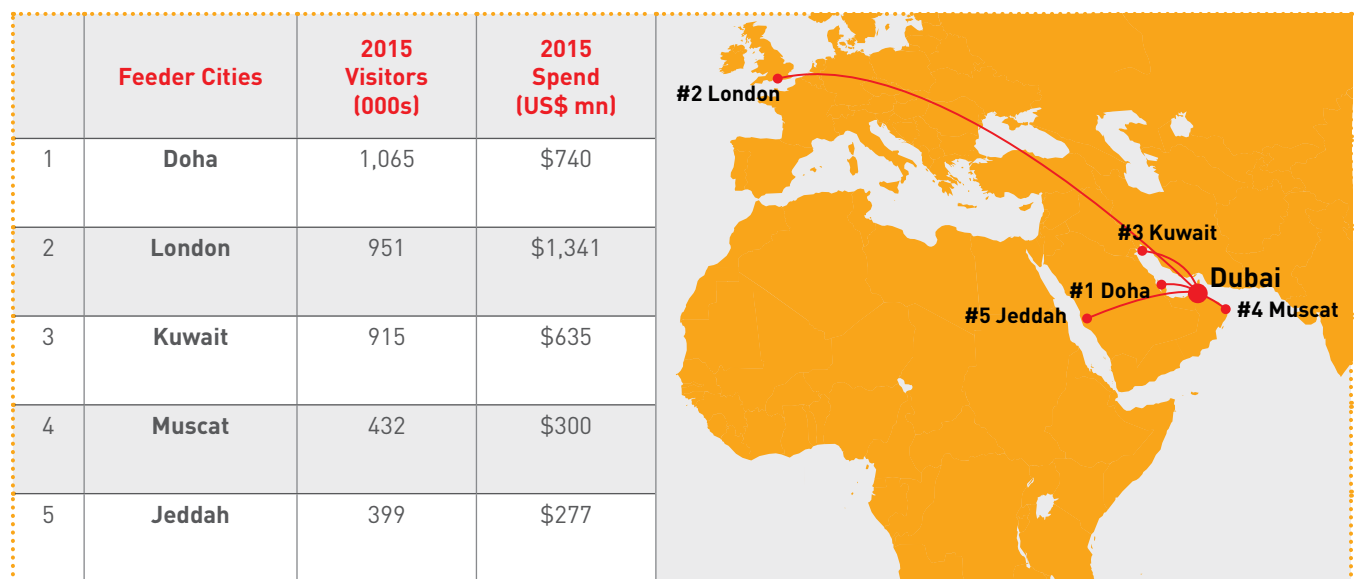
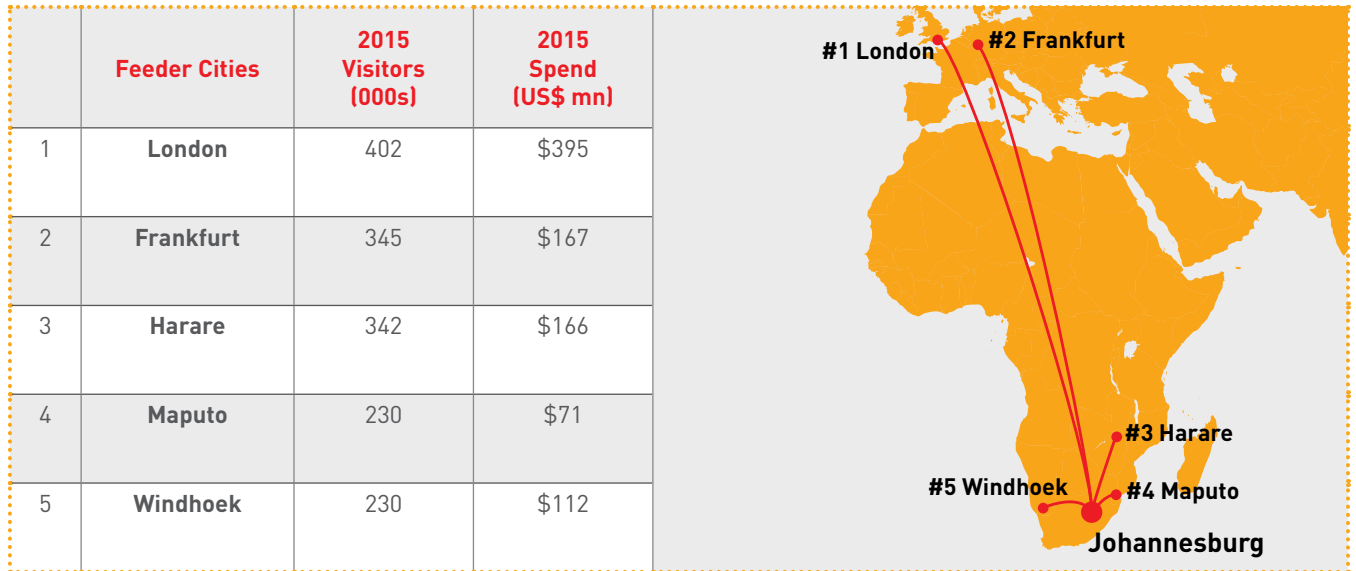


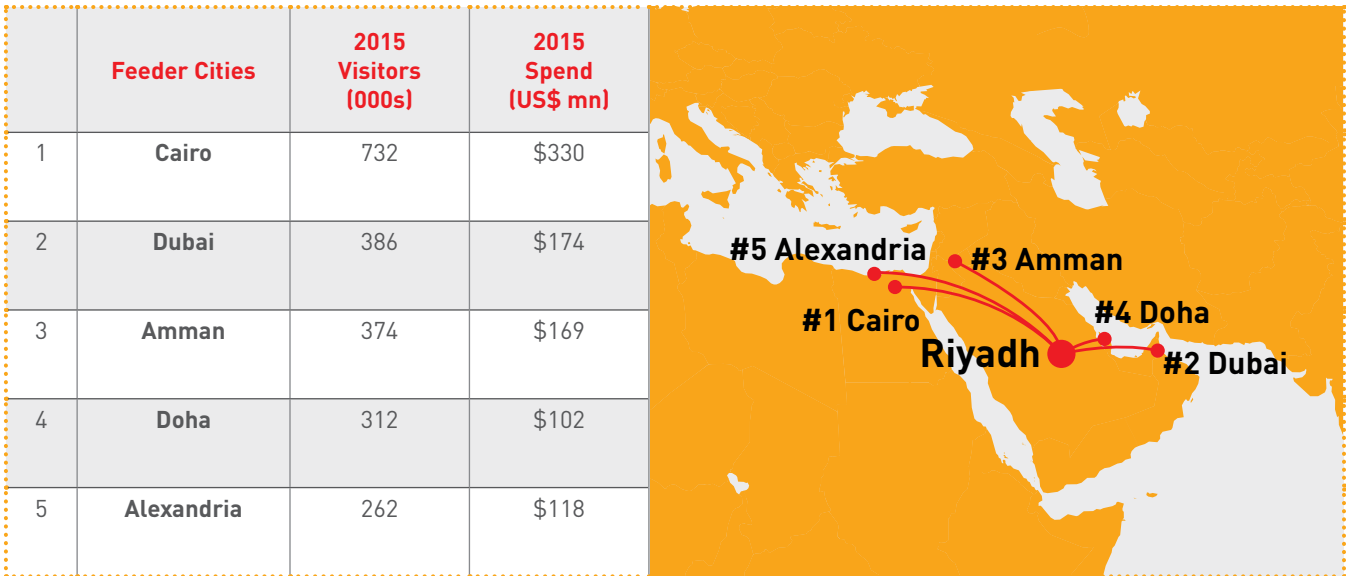
CHART 16 Johannesburg's Top 5 Feeder Cities (2015)

The two top feeder cities for Johannesburg are in Europe – London and Frankfurt. They are followed by Harare, Maputo, and Windhoek in the southern Africa region. London and Frankfurt are also in the first and second ranks in terms of visitor spending in Johannesburg.





CHART 17 Riyadh's Top 5 Feeder Cities (2015)



Riyadh's top five feeder cities are all in the region. Cairo is in the top rank, followed by Dubai, Amman, Doha, and Alexandria. In terms of visitor spending in Riyadh, the ranking is almost the same, with exception that Alexandria is fourth and Doha fifth.

In terms of grow rate, Abu Dhabi is the region's top-ranked destination city with an impressive CAGR of 20.4 percent between 2009 and 2015. Riyadh follows closely behind at 18.0 percent. The details are summarized in **Table 10**.

TABLE 10 Middle East & Africa's Fastest Growing Destination Cities by International Overnight Visitors (2009 – 2015 CAGR)

Rank	Destination City	Country	2015 Overnight International Visitors (millions)						2015 Visitor Spend (US\$bn)
			2011	2012	2013	2014	2015	% CAGR 2009 & 2015	
1	Abu Dhabi	United Arab Emirates	1.29	1.50	1.85	2.34	2.70	20.4%	\$2.2
2	Riyadh	Saudi Arabia	4.16	3.73	3.60	4.07	4.27	18.0%	\$1.9
3	Dubai	United Arab Emirates	9.91	10.94	12.18	13.20	14.26	9.4%	\$11.7
4	Cape Town	South Africa	1.39	1.35	1.57	1.74	1.96	6.9%	\$2.1
5	Johannesburg	South Africa	3.86	4.10	4.00	4.33	4.44	5.0%	\$2.6
6	Tel Aviv-yafo	Israel	0.97	0.97	1.00	0.97	1.05	4.8%	\$1.5
7	Amman	Jordan	1.11	1.29	1.17	1.23	1.31	2.1%	\$1.3
8	Beirut	Lebanon	1.14	0.98	1.07	1.19	1.15	0.1%	\$1.3
9	Cairo	Egypt	1.55	1.83	1.50	1.55	1.70	-1.4%	\$1.3

Only destinations with more than 1 million international overnight arrivals in 2015 were included in this ranking.

Historical data in each times series presented above has been updated with the latest figures or estimations and may not be comparable to the time series from previous editions of this report

Top 10 Destination Cities in North America

New York, ranked sixth in the world, is the top-ranked in North America in international visitors in 2015. It is followed by Los Angeles and Miami in second and third, respectively. The Canadian cities of Toronto and Vancouver follow in fourth and fifth, with Montreal in eighth.

New York is also tops in the region in visitor spending, estimated at US\$17.4 billion in 2015, which is more than 2.3 times bigger than the second-ranked Los Angeles at US\$7.4 billion. The details of the top ten in North America are summarized in **Table 11**.



New York is also tops in the region in visitor spending, estimated at **US\$17.4 billion** in 2015.

TABLE 11 North America's Top 10 Destination Cities by International Overnight Visitors and Cross-Border Spending (2015)

2015 rank (2014 rank)	Destination City	Country	2015 Overnight International Visitors (millions)						2015 Visitor Spend (US\$bn)
			2011	2012	2013	2014	2015	%Δ 2014 & 2015	
1 (1)	New York	USA	10.26	10.59	11.07	11.86	12.27	3.5%	\$17.4
2 (2)	Los Angeles	USA	4.45	4.48	4.60	4.94	5.20	5.3%	\$7.4
3 (3)	Miami	USA	3.25	3.77	4.30	4.40	4.52	2.6%	\$6.4
4 (4)	Toronto	Canada	3.41	3.53	3.68	4.02	4.18	4.0%	\$2.4
5 (5)	Vancouver	Canada	3.12	3.15	3.30	3.50	3.76	7.5%	\$2.7
6 (6)	San Francisco	USA	2.87	2.82	3.05	3.21	3.39	5.8%	\$4.8
7 (7)	Chicago	USA	1.97	2.17	2.19	2.37	2.35	-0.6%	\$3.3
8 (9) ↑	Montreal	Canada	1.94	1.93	1.95	2.04	2.12	3.7%	\$1.2
9 (8) ↓	Washington	USA	2.02	2.01	1.97	2.04	2.06	0.6%	\$2.9
10 (10)	Boston	USA	1.52	1.46	1.48	1.61	1.64	1.9%	\$2.3

Historical data in each times series presented above has been updated with the latest figures or estimations and may not be comparable to the time series from previous editions of this report



With the exception of Toronto, four out of five of New York's biggest feeder cities are from outside of North America. The biggest is London, followed by São Paulo, Paris, Toronto, and Beijing. Even though Beijing is in the fifth rank in terms of visitor numbers, it is the biggest feeder city for New York in terms of spending, estimated at US\$1.3 billion in 2015, more than São Paulo's US\$1.2 billion, and London's US\$1.1 billion, another sign of the far-reaching impact of the massive increase in outbound travel in China.

CHART 21 New York's Top 5 Feeder Cities (2015)

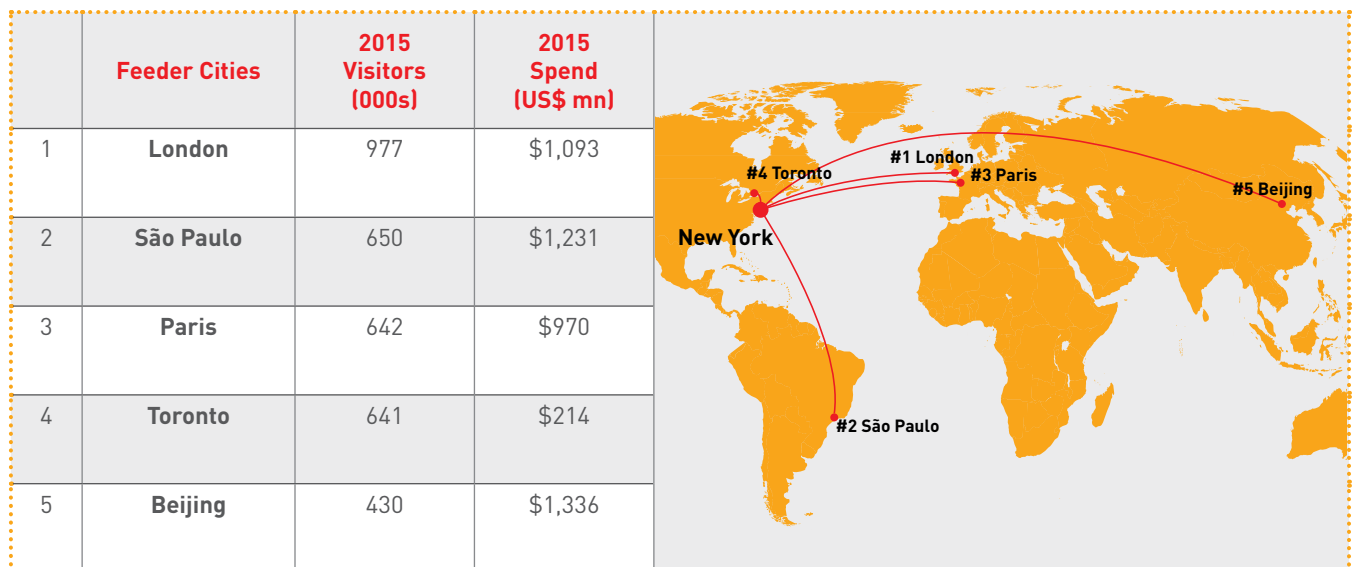
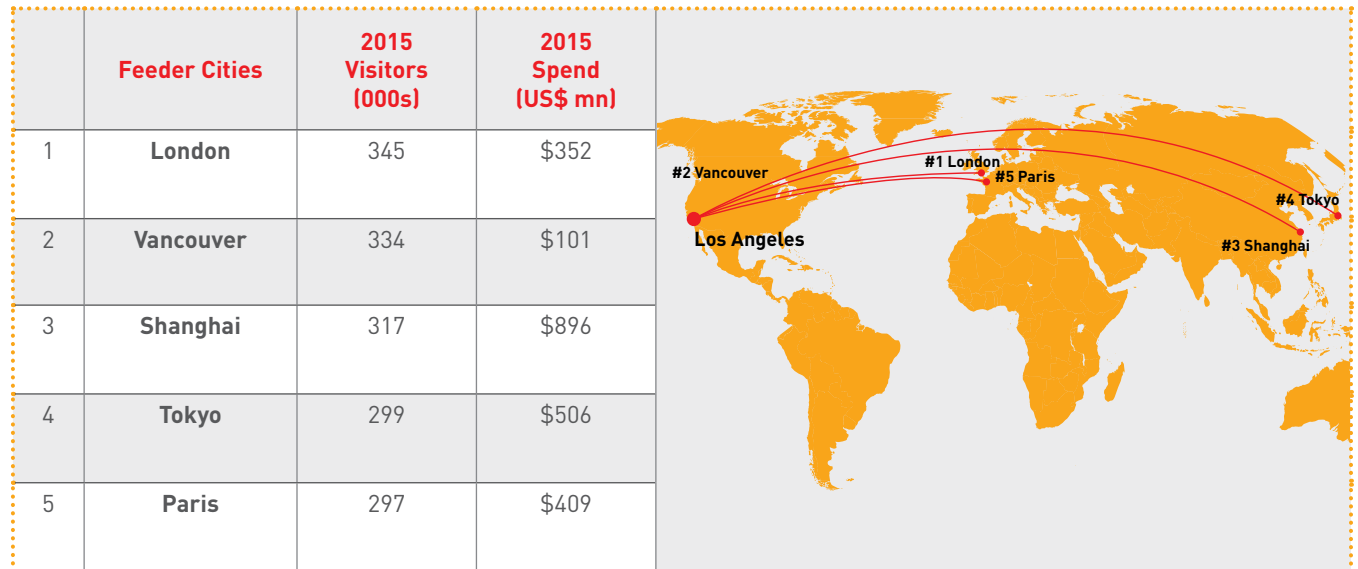


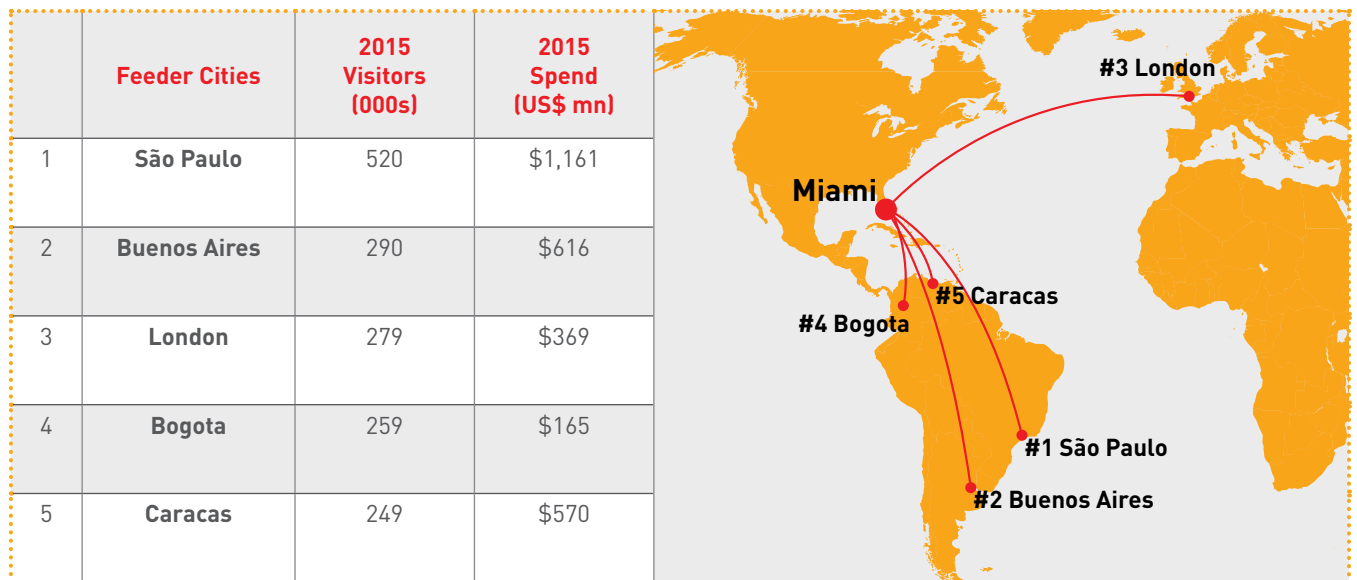
CHART 22 Los Angeles' Top 5 Feeder Cities (2015)

Los Angeles also has very diversified feeder cities. London is the biggest, followed by Vancouver, Shanghai, Tokyo and Paris. In visitor spending terms, Shanghai is the biggest with an estimated US\$896 million in 2015, much higher than Tokyo, in second place, at US\$506 million. Like New York, Los Angeles is also feeling the impact of the massive increase of outbound travel from China. Paris followed with US\$409 million, London with US\$352 million, and Vancouver with US\$101 million.





CHART 23 Miami's Top 5 Feeder Cities (2015)



Miami is closely connected with Latin America as four out of its top five feeder cities are in that region. The exception is London, which is in the third rank. São Paulo is top-ranked, followed by Buenos Aires, London, Bogota and Caracas. São Paulo is also first, in terms of visitor spending in Miami, which is estimated at US\$1.2 billion in 2015, almost twice as high as spending by visitors from second-ranked Buenos Aires.

In terms of CAGR, Houston is the fastest growing in North America since 2009 at 10.5 percent. It is the only destination city in North America with double digit CAGR. It is followed by Los Angeles, Miami, New York, and San Francisco. The details are summarized in **Table 12**.

Houston
is the fastest
growing in
North America
since 2009 at
10.5 percent

TABLE 12 North America's Fastest Growing Destination Cities by International Overnight Visitors (2009 – 2015 CAGR)

Rank	Destination City	Country	2015 Overnight International Visitors (millions)						2015 Visitor Spend (US\$bn)
			2011	2012	2013	2014	2015	% CAGR 2009 & 2015	
1	Houston	USA	1.02	1.13	1.28	1.45	1.52	10.5%	\$2.2
2	Los Angeles	USA	4.45	4.48	4.60	4.94	5.20	7.8%	\$7.4
3	Miami	USA	3.25	3.77	4.30	4.40	4.52	7.5%	\$6.4
4	New York	USA	10.26	10.59	11.07	11.86	12.27	6.0%	\$17.4
5	San Francisco	USA	2.87	2.82	3.05	3.21	3.39	5.9%	\$4.8
6	Toronto	Canada	3.41	3.53	3.68	4.02	4.18	4.3%	\$2.4
7	Boston	USA	1.52	1.46	1.48	1.61	1.64	3.9%	\$2.3
8	Vancouver	Canada	3.12	3.15	3.30	3.50	3.76	3.4%	\$2.7
9	Chicago	USA	1.97	2.17	2.19	2.37	2.35	3.0%	\$3.3
10	Montreal	Canada	1.94	1.93	1.95	2.04	2.12	2.9%	\$1.2

*Only destinations with more than 1 million international overnight arrivals in 2015 were included in this ranking.
Historical data in each times series presented above has been updated with the latest figures or estimations and may not be comparable to the time series from previous editions of this report*

Conclusions

International visitors and their spending play an increasingly critical role in boosting economic dynamism in destination cities around the world. As mentioned earlier, the global economic recovery remains tentative and uneven, and demand for exports continues to be weak. In this context, stronger growth in international visitors and spending can make a significant contribution to income and employment generation for the destination cities.

How resilient are the destination cities in this more challenging global economic environment? One way to assess it is to look at how many feeder cities account for 50 percent of their international visitors. The more the feeder cities, the more diversified the source of international visitors a destination city has, and, everything else being equal, the more resilient it becomes. **Table 13** summarizes the estimates of number of feeder cities that account for 50% of international visitors for the top 20 most diversified destination cities in the world.

It turns out that Istanbul, ranked sixth in the world in international visitors, is the most diversified, with 50 percent of its international visitors coming from 33 feeder cities. London, the top-ranked in the world, is the second most resilient with 26 feeder cities followed by Paris, Amsterdam and Dubai.

Asian destination cities, which are among the fastest growing in the world, appear to be less diversified and hence less resilient. Bangkok, ranked second in the world as a destination city, is in seventh place in resilience, with only 13 feeder cities accounting for 50 percent of its international visitors. Singapore, ranked seventh in the world, is tenth in resilience, while Hong Kong, ranked tenth in the world, is in 12th place in resilience.

The challenge going forward for many of these otherwise very successful destination cities is to diversify their sources of visitors while maintaining their robust rates of growth.

TABLE 13

Rank in International Visitors in 2015	Destination City	No. of Feeder Cities Accounting for 50% of International Visitors (Resilience Rank)
1	London	26 (2)
2	Bangkok	13 (7)
3	Paris	25 (3)
4	Dubai	17 (5)
5	Istanbul	33 (1)
6	New York	15 (6)
7	Singapore	11 (10)
8	Kuala Lumpur	13 (8)
9	Seoul	12 (9)
10	Hong Kong	9 (12)
11	Tokyo	4 (14)
12	Barcelona	10 (11)
13	Amsterdam	24 (4)
14	Rome	14 (7)
15	Milan	10 (11)
16	Taipei	6 (13)
17	Shanghai	7 (12)
18	Vienna	12 (9)
19	Prague	9 (12)
20	Los Angeles	9 (12)



Istanbul, ranked sixth in the world in international visitors, is the **most diversified**, with 50 percent of its international visitors coming from 33 feeder cities.

Appendix A:

Methodology

The 132 Destination Cities of the index.

Asia/Pacific (42 cities):

Ahmedabad, Almaty, Bangkok, Beijing, Bengaluru, Chengdu, Chennai, Coimbatore, Colombo, Dalian, Delhi, Dhaka, Guangzhou, Hangzhou, Hanoi, Harbin, Ho Chi Minh City, Hong Kong, Hyderabad, Islamabad, Jakarta, Karachi, Kolkata, Kuala Lumpur, Lahore, Manila, Melbourne, Mumbai, Nanjing, Osaka, Pune, Qingdao, Seoul, Shanghai, Shenzhen, Singapore, Sydney, Taipei, Tianjin, Tokyo, Xi'an, Xiamen

Europe (36 cities):

Amsterdam, Ankara, Athens, Barcelona, Berlin, Brussels, Bucharest, Budapest, Copenhagen, Dublin, Dusseldorf, Edinburgh, Frankfurt, Geneva, Hamburg, Istanbul, Kiev, Lisbon, London, Madrid, Milan, Minsk, Moscow, Munich, Novosibirsk, Paris, Prague, Rome, Sofia, St Petersburg, Stockholm, Vienna, Vladivostok, Warsaw, Yekaterinburg, Zurich

Latin America (19 cities):

Belo Horizonte, Bogota, Brasilia, Buenos Aires, Caracas, Cordoba, Curitiba, Lima, Medellin, Mexico City, Monterrey, Montevideo, Quito, Recife, Rio de Janeiro, San Jose, Punta Cana*, Santo Domingo, São Paulo

Middle East and Africa (21 cities):

Abu Dhabi, Accra, Amman, Beira, Beirut, Cairo, Cape Town, Casablanca, Dakar, Damascus, Dubai, Durban, Kampala, Johannesburg, Lagos, Maputo, Nairobi, Riyadh, Tehran, Tel Aviv, Tunis

North America (14 cities):

Atlanta, Boston, Chicago, Dallas, Houston, Los Angeles, Miami, Montreal, New York, Philadelphia, San Francisco, Toronto, Vancouver, Washington

* Punta Cana replaces Santiago

Global Air Hub Index

It is an index that seeks to measure the breadth of a city's international connectivity as well as the strength of each connection. Using Amsterdam as an example, for each city pair with Amsterdam as the departure node, we calculate the connectivity score for the city pair as:

$$100 \times \{ \text{Weekly Flight Frequency} \} \times \{ \text{Intra/Inter Regional Multiplier} \} \\ / \{ \text{City Pair with Max Weekly Flight Frequencies} \}$$

Weekly Flight Frequency: is the number of flights per week departing from Amsterdam to a particular city. This is the main driver of the connectivity score and it is sourced from OAG Flight Schedules Data. Airlines will also provide their flight schedules for one year ahead, which is how we obtained the weekly flight frequencies for 2014. While the number of cities that Amsterdam is connected to determines Amsterdam's raw connectivity, the strength of each connection is measured by the weekly flight frequency and weighted by whether or not the connection is Inter-regional or Intra-regional.

Inter/Intra Regional Multiplier: International Destinations from Amsterdam that are Inter-regional (i.e. outside of Western Europe in the case of Amsterdam) are weighted at twice (i.e. x 2) that of International Destinations within the same region as Amsterdam (i.e. intra-regional, within Western Europe).

City Pair with Max Weekly Flight Frequencies: This number is used to normalize the raw connectivity scores. It has absolutely no effect on the relative scores between cities and is used only for ease of presentation when viewing the data.

Every Amsterdam – XXX city pair is thus given its own connectivity value. We add them up to get a connectivity value for Amsterdam itself. We now do this for every one of the 132 cities. Once we have the connectivity scores for all 132 cities, we perform a final normalization so that the scores can be presented out of a maximum of 100 (Index format). The divisor for this is the highest raw 2009 score (in this case London's raw connectivity score in 2009).

Estimation of International Overnight Visitors

City level international overnight arrivals are those who actually stay in the destination city for at least for one night. In order words we only count cases where the disembarkation city is also an overnight destination city. This is opposed to cases where the disembarkation city is merely a transit point while the destination city maybe some other city in the same country.

The sources for city level overnight arrivals by foreign visitors are typically the National Statistics Boards of the relevant countries or their Tourism Boards. The indicators for 122 out of the 132 cities were directly sourced from or estimated from official data. The other 10 cities were estimated using the Airflow Model (see below). The estimation procedures are as follows:

- The 2015 scheduled passenger capacity of 35,557 international city to city pairs
- The historical load factors of the international city-city pairs
- Historical country to country ratios of resident to non-resident bi-directional flows
- Historical country to country ratios of resident to non-resident bi-directional flows
- City hub factor adjustments using the International air connectivity index
- 2015 projected growth rates for each destination city which are applied to the 2014 overnight visitor arrivals on the left

In previous editions of this report Dubai international overnight visitors were at the paid accommodation level only; in this edition however, Dubai Tourism and Commerce Marketing has kindly provided us with estimates of international overnight visitors who stay with friends and family and as such we have revised our data to include this.

The Airflow Model

Every month the OAG collects the airline flight schedules for the next 12 months on a global basis. Using only non-stop flights we extract for each city to city pair the number of

- Weekly flight frequencies
- Passenger Capacity

On any airline flight route, the average % of seats filled (i.e. called the “load factor”) varies. This information is extremely sensitive for competitive reasons and airlines will only release this data with a 1 year lag. Nevertheless, by using the historical load factor on most city to city flight routes, we can estimate a proxy for the current and forecasted load factor. We used a weighted average of the historical load factors with heavier emphasis on the most recent years which ranges from 30% to 100%, but airlines will try to maintain a load factor of between 70 to 80% by changing the number of weekly flights or by changing the aircraft type to increase or decrease passenger capacity. As such, for determining the years for which we do not have load factor numbers we apply an increasing improvement of 5% per year on the historical average, starting at 70% and improving to 85% over time.

Using the data above a first estimate of the number of passengers departing from one city to another can be made using: Estimated Travelers = Load Factor * Passenger Capacity.

Now on any flight there will also be passengers who are returning home after having visited the departure city. For example, in the case of a Caracas to Miami flight there will be US passengers returning back to Miami (after having visited Caracas). We want to net out those passengers. As airlines do not reveal the residency of their passengers there is no way to know at a city to city level what portion of passengers on each flight is returning home. We need to go to the country-country level for this and for that we use UNWTO (United Nations World Tourism Organization) data. They collect the number of annual residents traveling between country pairs and we use these numbers to create a ratio of:

Departure Country A to Arrival Country B Ratio =

$$\frac{\text{Annual Number of Residents from Country A going to Country B}}{\{\text{Annual Number of Residents from Country A going to Country B} + \text{Annual Number of Residents from Country B going to Country A}\}}$$

For example, in the case of the Caracas - Miami route, in 2009 there were 340,403 Venezuelans in total traveling to the US, and 43,752 US residents in total traveling to Venezuela via the Miami – Caracas route implying a ratio of 88.6% which is the estimated ratio of Venezuelans on any given flight from Venezuela to the US. We use this ratio to net out returning US residents and to obtain the number of Venezuelans traveling from Caracas to Miami as follows:

Estimated Venezuelan Resident Travelers from Caracas to Miami =

Estimated Travelers * Ratio of Venezuelan Resident Travelers to
Total Travelers {US & Venezuela}

Where UNWTO data was not available for a country pair (data available for 76% of the country pairs), data was sourced at the National level where available (2% of city pairs) or we used the ratio of the IMF Balance of Payments travel debit accounts to construct a secondary proxy ratio. In this release we have focused on key border regions around the world where the UNWTO cross-country visitor data may give less accurate ratios. In all cases, the general idea was to use overnight visitors (where data was available) instead of overall visitors to construct more accurate departure-arrival ratios of air travelers. This has resulted in some shifts to the flow of travel between these areas (and therefore overall expenditure as well). The border regions include the Mexican-US border, EU countries which share a border, the Singapore-Malaysia border, and the Ukraine-Russia-Belarus-Moldova border areas.

In this release, out of the 132 cities, 10 were estimated using the airflow model as we were unable source for official statistics. They are:

- **Eastern Europe:** Novosibirsk, Yekaterinburg, Kiev, Minsk, Almaty
- **Asia:** Dhaka, Tehran
- **Africa:** Dakar, Lagos, Accra

To estimate the number of visitors to each of the destination cities, the following steps are followed.

- (i) As explained previously, on any given flight there are departing residents from the departure country, returning visitors, and a third group of residuals. The residuals group can be a low proportion of the passengers for typically non-hub cities, and very high for hub cities. To estimate the proportion of this group, we use: $\text{Residuals} = \text{Total Estimated Passengers} - \text{Number of Departing Residents} - \text{Number of Returning Visitors}$

- ❖ (ii) Residuals constitute 2 main groups: (A) non-residents (of either the origin or destination country) who from the origin city are visiting the destination city, and residents of the origin country, and (B) non-residents (of either the origin or destination country) who will be transiting through the destination city without visiting it. We are interested in (a) but in order to separate the residuals into its 2 components we use a relative connectivity ratio “RCR” that is based on the International Air Connectivity Index (IACI) scores previously created.

$$RCRo-d = (IACIo / (IACIo + IACId)) / 2$$

Where:

- ❖ **RCRo-a:** Is the Relative Connectivity Ratio of the Origin City relative to the Destination City
- ❖ **IACIo:** Is the International Air Connectivity Index of the Origin City
- ❖ **IACId:** Is the International Air Connectivity Index of the Destination City

We then separate out (A) using

$$A = \text{Residual} \times RCR \text{ \& } B = \text{Residual} - A$$

We then add A {Non-residents (of either the departing or arrival country) who from the departure city are visiting the arrival city} to the number of residents visiting the arrival country {calculated earlier} to obtain the estimated number of travelers who will visit the destination city, which is equal to:

$$\text{Visitors} = \text{Origin Country Residents} + \text{Non-Residents from other Countries}$$

Estimates of Visitors' Cross-Border Expenditure

In most cases the estimated visitor spend at the city level was directly sourced from official statistics, or estimated using data from national international visitor surveys (59 cities). Where survey level data at the city level was unavailable but available at the national level, we used the later in terms of the national average expenditure per overnight tourist which we multiplied with city level overnight visitors to obtain total expenditure (42 cities). Where survey data was not available at either the city or country level, we calculated and used the average expenditure in destination countries using IMF Balance of Payments Travel Credit data (adjusted down to include only overnight visitors as the Balance of Payments data includes both excursionist and overnight visitors) and the total number of overnight visitors to the country (31 cities).

Data Sources

Indicators	Source
Dynamic 1 Year Forward Flight Schedules	OAG
Traffic by Flight Stage & Load Factor	IATA
Country-Based Tourism Statistics	UNWTO
Country-Based Tourism Statistics	National Tourism Boards
Trade in Services	UN
WEO Data Base	IMF
Global Data Base	CEIC
World Tourism Indicators	WTTC

Glossary

International Visitor: Person who is travelling on a non-stop direct flight to her destination and is not a resident of the destination country. A visitor may make more than one trip, and each trip counts as a new visit. That is, a person who makes 2 trips to a destination as described above counts as 2 visitors to that destination. A person on the return leg home does not count as a visitor.

Visitor Spend: The estimated total amount that visitors spend in the destination city/country. It excludes air ticket expenditure required to get the visitor to the destination city.

Origin Country: The country where international overnight visitors reside

Destination City: The city where passengers disembark (leave the airport) and are counted as visitors (which only includes non-residents of the destination city/country).

Feeder City/Country: Feeder cities both generate international visitors from its pool of residents and also act as a funnel for residents of other cities /countries going to a specific destination. For example, visitors who arrive in London from Frankfurt airport may be either residents of Frankfurt, residents from other parts of Germany who may have domestically flown or driven to Frankfurt to take their flight to London and residents of countries other than Germany who are on their way to London and have either visited Frankfurt before going to London or who are simply transiting through Frankfurt on their way to London. The point is that the feeder city is the most recent place from which travelers embarked before arriving at their destination.

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