



# JFK Terminal 6 Project

## Airline Traffic And Economic Analysis

February 17, 2022  
v2



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## 1. Introduction

This Report contemplates an ASM passenger forecast for John F. Kennedy International Airport (JFK) and JFK's Terminal 6 through 2060 as a key input to JFK Millennium Partners (JMP) in determining the revenue generation ability in Terminal 6. ASM's approach was to segment the overall forecast period into two timeframes. A highly detailed bottom-up forecast of every route and airline was prepared for 2021 through 2026 followed by a GDP-based econometric forecast through 2060 for JFK. A forecast for Terminal 6 was developed using several different combinations of potential airline occupants.

The New York area population, economy, demographics, and air transportation region are analyzed to provide the forecast context, and particularly the outlook for COVID-19 pandemic recovery and beyond for passenger traffic and capacity at JFK. Finally, several key global airline industry trends affecting future airline service potential were examined.

Due to the severe impact that the COVID-19 pandemic has had on passenger traffic and airline capacity, particularly in 2020, this Report utilizes 2019 data as the most recent normal economic and operating environment. To analyze the recovery so far, January – July 2021 data is the latest available for passenger enplanements<sup>1</sup>. When origin-destination traffic is reviewed, January – June 2021 is the most recently available because it is issued on a quarterly basis. Indications are that passenger traffic continued to recover in the second half of 2021 at JFK and throughout the domestic U.S. air transportation system, so the passenger traffic data in this Report is likely understated compared to where JFK is currently on the path to recovery.

More recent and forward-looking airline schedules and capacity are used throughout the Report as available.

Airports are identified in this Report by their three-letter International Air Transport Association (IATA) airport codes. A list of the codes with their respective airport names and locations can be found in Appendix A.

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<sup>1</sup> U.S. Department of Transportation T100 dataset



## 2. Executive Summary

JFK Millennium Partners (a consortium comprised of Vantage Airport Group, RXR Realty, and American Triple I) (JMP) is developing a new Terminal 6 at John F. Kennedy International Airport (JFK). JFK is owned by the City of New York and operated by the Port Authority of New York and New Jersey under a lease with the City of New York expiring in 2060.

### JFK Airport and Market

JFK is the primary gateway airport to the New York-Newark, NY-NJ-CT-PA Combined Statistical Area (New York CSA) as defined by the U.S. Census Bureau. The New York CSA is the largest metropolitan region in the U.S. in terms of population, economic activity, and number of air passengers (71.7 million in 2019). Six airports are in the CSA: JFK, EWR, LGA, HPN, ISP and SWF.

With a 44% total share of passenger traffic, JFK is the largest airport in the New York CSA, the sixth busiest airport in the U.S. in terms of total enplaned passengers (31.2 million in 2019) and the second busiest in the U.S. for origin-destination passengers (26.9 million in 2019). JFK was also the leading international gateway with 16.9 million international passengers in 2019, supported by the substantial connecting networks of its three largest airlines (JetBlue, Delta, and American).

### COVID-19 Recovery

The New York CSA's traffic recovery from the COVID-19 pandemic has lagged other major U.S. air transportation markets due to its relatively high percentage of international passengers and ongoing border restrictions and travel requirements in some of its key markets, particularly Europe. The New York CSA's traffic recovery is expected to accelerate during the second half of 2022, as evidenced by JFK's summer (April – October) seat capacity scheduled at 97.6% of summer 2019, clearly indicating airline anticipation of returning passenger volumes.

### JFK is Strategically Important for Airlines

As the New York CSA is a strategic necessity for any international airline in the North American market, JFK had service from 73 passenger airlines in 2019. In February 2022, 63 airlines have scheduled flights at JFK. Most of the remaining airlines are expected to return as travel restrictions in their home markets ease. JFK benefits from a diverse carrier base that is not dominated by a single airline and is split between U.S. network and regional carriers, foreign-flag airlines, and low-cost carriers.

### Airline Partnerships Grow Passenger Traffic

JFK's airlines use partnerships and codeshares which allow their passengers connecting opportunities with other carriers and the benefits of the three largest alliances of Star Alliance, Oneworld and Skyteam. However, unlike other major world gateways, most of these airline partners are not co-located in JFK, offering a potential opportunity for Terminal 6 to generate additional traffic through the convenience of co-location of aligned partnership including JetBlue partner airlines given the adjacency of Terminal 6 to JetBlue's presence in Terminal 5.



JFK is an important driver of fare and other revenues for airlines. In 2019, JFK's airlines generated \$20.1 billion in leg base fare revenues at JFK, the second highest level in the U.S. behind LAX. One reason for the relatively high leg base fares at JFK is the high percentage of revenue generated from premium cabin passengers (business and first class). JFK has the highest percentage of premium cabin revenue amongst the 20 U.S. airports with the most passenger traffic, which makes JFK particularly important for international airlines who cater to premium-cabin passengers.

### The New York CSA

JFK's future airline traffic will continue to benefit from the inherent strengths of the New York CSA:

- Large population forecasted to grow to 25.2 million by 2030, with 0.3% 2021 – 2030 CAGR
- Diverse and resilient economy that has quickly recovered following past economic downturns and shock events
- Strong employment market with per capita income 30.7% higher than the U.S. average
- Highest number and largest percentage of U.S. households with \$100,000+ income, a strong indicator of travel demand that translates into a high propensity to travel
- Strong business demand underpinned by New York City's status as a global financial center and home to a wide range of business sectors
- One of the most popular travel destinations in the world with 66.6 million visitors in 2019 from a wide range of countries

### Passenger Traffic Forecast

ASM has prepared the following passenger traffic and aircraft movements forecasts for JFK and Terminal 6.

#### JFK Forecasts

A *top-down forecast* for JFK and the New York CSA airports of EWR, LGA and "Others" (HPN, ISP and SWF) for the period 2021 - 2025 using historical baseline enplanement data<sup>2</sup> applied to high-level passenger growth rate assumptions based on the latest forecasts and analyses from industry organizations and authorities, such as IATA, to forecast future passenger traffic at each New York CSA airport split by domestic and international enplanements. The top-down forecast shows the New York CSA airports collectively returning to 2019 domestic levels by 2023 and international levels by 2024. Market conditions before, during and after the pandemic do not indicate a material change in the market split between JFK and the other New York CSA airports.

A *bottom-up forecast* providing a detailed forecast of JFK traffic on a route-by-route, carrier-by-carrier basis using historical movements, seats per movement and load factors combined with changes in each airline's fleet mix, route network recovery, strategy, and source market conditions. JFK's slot limitations were considered as part of this process, where routes with

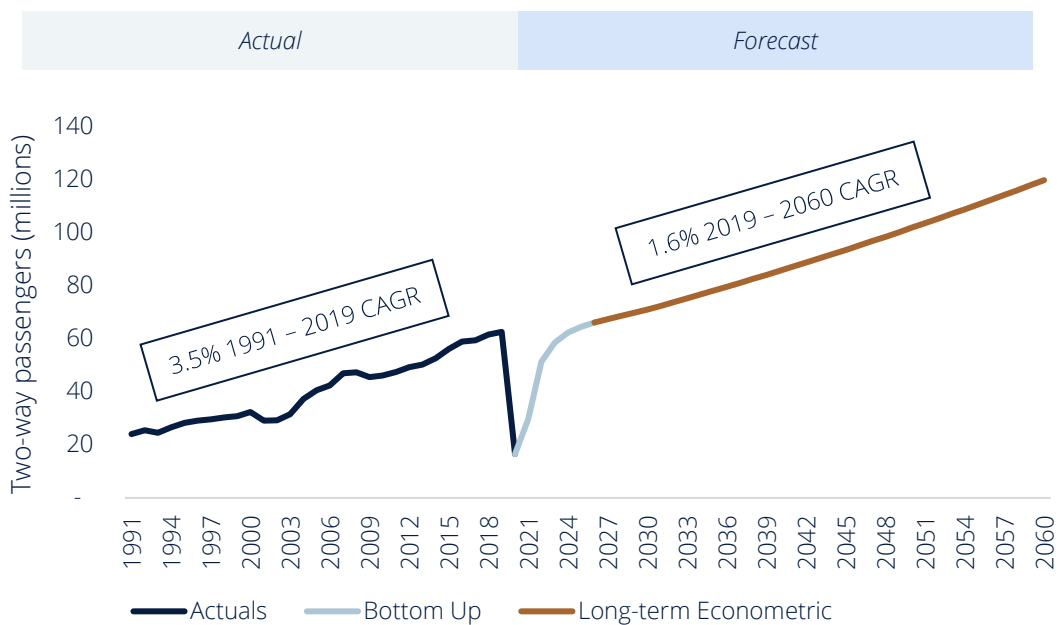
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<sup>2</sup> 2021 enplanements forecast was calculated by applying the monthly load factors to the published airline seat totals for each month.

increasing passenger traffic biased toward growing using larger aircraft and/or higher load factors rather than frequency. The bottom-up forecast shows JFK will return to 2019 levels in 2024 - 2025 with an acceleration in recovery in the next 12 - 24 months. The bottom-up forecast shows that JFK will increase from 62.5 million passengers in 2019 to 66.1 million passengers in 2026, growing 5.6% between 2019 and 2026 which is a CAGR of 0.8%.

A *long-term forecast* for 2027- 2060 using an econometric regression based on the historically close relationship between passenger demand and GDP. The long-term forecast shows 70.9 million passengers at JFK in 2030 and 119.7 million in 2060 without operational constraints or future shocks (e.g. economic downturns, more pandemics) being taken into consideration. The forecasted annual growth rate (CAGR) between 2019 and 2060 is 1.6%, well below the historical CAGR of enplanements at JFK (1991 – 2019) of 3.5%. The 1991 – 2019 figure includes the 9/11 Attacks and 2007 – 2008 Global Financial Crisis, further demonstrating the 1.6% CAGR to be conservative even if it does not factor in major economic downturns.

### JFK Airport (All Terminals) Forecast Results Summary



	Actual	Forecast								
	2019	2021	2025	2030	2035	2040	2045	2050	2055	2060
Total Two-way Passengers	62.5	29.7	64.5	71.0	78.0	85.5	93.4	101.8	110.5	119.7

Passenger demand and aircraft movements growth will be fulfilled with:

- Continuing a trend towards larger aircraft sizes: Between 2009 and 2019, the average seats per aircraft movement at JFK increased by 22 from 153 to 175 for a CAGR of 1.4%. In 2060, the average seats per movement at JFK would be 213<sup>3</sup>, which is a CAGR from 2019 of 0.5%, which is well below the historical trend.
- Higher load factors: Between 2009 and 2019, the average annual load factor at JFK increased by 9.7 percentage points from 73.2% to 82.9%<sup>4</sup>. Even with that increase, in 2019 6.4 million seats departed JFK empty. The 9.7 percentage point increase took only 10 years to materialize over the 2009 to 2019 period; by contrast, the long-term forecast assumes that this same 9.7 percentage point increase would occur over a 26-year period, thus showing this to be a more conservative assumption as compared with historical results. The unconstrained long-term forecast shows an average load factor in 2060 of 95.4%. The increase is expected to be driven by airlines looking to fulfil passenger demand growth in a very important market for their route networks yet constrained by the number of aircraft movement slots. Airlines are also facing pressure to increase operating and cost efficiencies and are improving the technology utilized to sell seats and maximize use of available capacity. The pressures on airline route network profitability and improvements in seat capacity management are both ongoing trends that are expected to continue increasing load factors.
- Increased utilization of existing slots: Airlines are required by the FAA to maintain 80% usage of their aircraft movement slots<sup>5</sup>. In 2019, airlines flew approximately 85.5% of the available aircraft movement slots.<sup>6</sup> As passenger demand grows, airlines add frequency, extend the operating season on routes, and add new markets. Without additional slots to acquire, the growth in flights would be accomplished by operating a higher percentage of the slots they already have.
- Additional flights outside slot-controlled hours: JFK's slot control rules are in effect for 17 hours each day<sup>7</sup>. In 2019, 9.7% of JFK's aircraft movements were scheduled outside of the slot-controlled hours, primarily to Asia, Central America, South America, and Florida<sup>8</sup>. As passenger demand to these regions continues to grow from JFK, airlines will continue to add departures outside the slot control hours.

### Terminal 6 Forecast

A Terminal 6 enplanements forecast which uses the bottom-up forecast and the long-term forecast and is the simple average of eight separate potential combinations of airlines (identified below as the Average airline combination) expected to occupy the terminal provided by JMP. Numerous airline combinations were used because airline negotiations are ongoing and thus

<sup>3</sup> By comparison, a JetBlue A321 neo in standard configuration (not Mint) has 200 seats. Source: JetBlue

<sup>4</sup> Source: U.S. DoT T100

<sup>5</sup> The FAA regulates aircraft movement slots at JFK, with a mandated limit of 80 aircraft movements per hour between 06:00 and 23:00.

<sup>6</sup> Based on U.S. DoT T100 data

<sup>7</sup> JFK's slot controls are in effect from 06:00 to 23:00. In 2019, approximately 8% of scheduled JFK passenger departures occurred outside these hours (Source: Published airlines schedules via [airlinedata.com](http://airlinedata.com))

<sup>8</sup> Source: U.S. DoT T100





the exact airline mix is not yet known. The High airline combination is the airline combination among the eight that produces the largest number of passenger enplanements in 2060 while the Low airline combination is the airline combination producing the smallest number of passenger enplanements in 2060. The Initial Base airline combination in the forecast is based on an airline combination in the financial model as presented to rating agencies.

The terminal will be built in two phases. Phase 1 includes five widebody gates and one narrowbody gate and is expected to start operating in 2025<sup>9</sup>. Phase 2 adds four widebody gates and is expected to start operating in 2027.

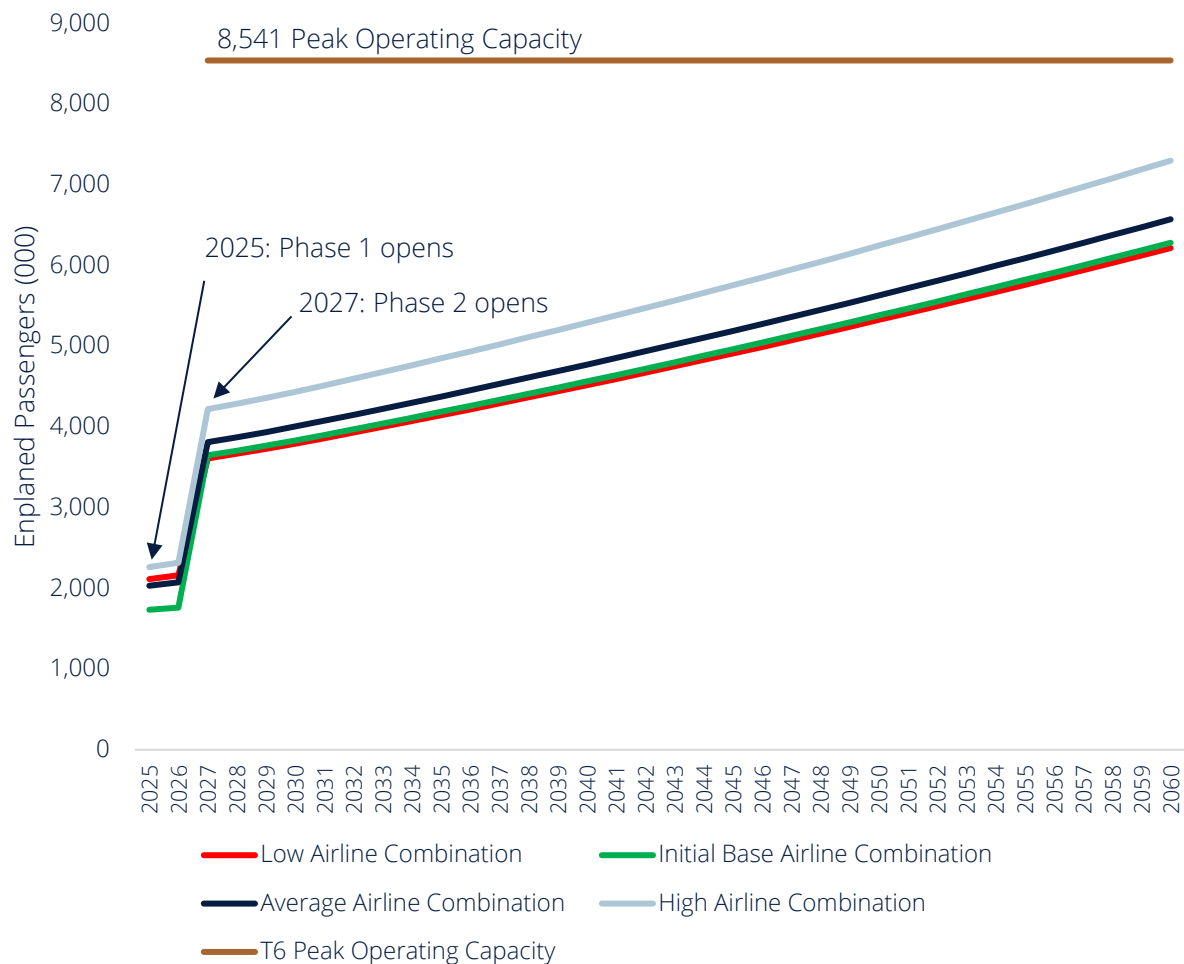
This forecast shows that Phase 1 is anticipated to generate between 2.0 million and 2.3 million passenger enplanements in 2025, assuming a full calendar year of operation. Phase 2 commencing 2027, again assuming a full calendar year, will see between 3.6 million and 4.2 million enplaned passengers. By 2060, the end of the forecast period, Terminal 6 is anticipated to generate between 6.2 million and 7.3 million passenger enplanements, well within the terminal's peak operating capacity of 8.5 million enplaned passengers<sup>10</sup>. The difference between the High and Low airline combinations is approximately 7.0% at the start of Phase 1 in 2025, and 16.9% at the start of Phase 2 in 2027 and at the end of the forecast period in 2060. Material downsides are not likely in lower traffic combinations while upsides are present in the High combination.

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<sup>9</sup> One widebody gate is planned to come online one year after Phase 1 opens (2026).

<sup>10</sup> Peak operating capacity calculated using 1,300 peak hour passengers \* 18-hour operating day \* 365 days per year, as provided by JMP

### Terminal 6 Airline Combination Enplaned Passenger Forecast (000)



	2025	2027	2030	2035	2040	2045	2050	2055	2060	2025-2060	
										Total Enplanements	CAGR
High	2,263	4,221	4,435	4,850	5,291	5,756	6,246	6,761	7,299	197,111	3.4%
Average	2,033	3,812	4,005	4,377	4,772	5,190	5,629	6,091	6,574	177,703	3.4%
Initial Base	1,735	3,649	3,833	4,188	4,565	4,963	5,382	5,822	6,282	169,503	3.7%
Low	2,115	3,612	3,793	4,145	4,517	4,911	5,326	5,761	6,217	168,561	3.1%

Passenger enplanements in the High airline combination are 11.0% higher than the Average airline combination in 2060, while 2060 passenger enplanements in the Low airline combination are 5.4% below the Average airline combination. The Initial Base airline combination being closer to the Low airline combination than the High airline combination indicates that the airline combinations chosen are conservative relative to the possible combinations of the airlines considered potential occupants of Terminal 6.

Passenger enplanements in the Initial Base airline combination are 4.4% lower than the Average airline combination in 2060, suggesting that it is also conservative.

### 3. JFK Terminal 6 Project

JMP, a consortium comprised of Vantage Airport Group, RXR Realty, and American Triple I, is financing, designing, constructing, operating, and managing the new Terminal 6 at John F. Kennedy International Airport (JFK) in New York.

JFK is owned by the City of New York and operated by the Port Authority of New York and New Jersey (Port Authority) under a lease with the City of New York expiring in 2060. In August 2021, the Port Authority Board of Directors approved the key terms to a lease through 2060 with JMP.

The proposed facility includes a central headhouse on the former Terminal 6 site and existing Terminal 7 site. The new Terminal 6 will include a 1.2 million sq. ft. terminal with passenger processing, 100,000 sq. ft. of commercial space, TSA screening facilities, and a new U.S. Customs and Border Protection Federal Inspection Station (FIS) for international arrivals that mixes arrivals with post-security departures in Terminal 5.

The terminal will have 10 new gates, including nine capable of handling international widebody aircraft. In addition to a seamless Terminal 5 connection, which is JetBlue's primary operating base, the new Terminal 6 will also have two JFK AirTrain stops to facilitate connectivity with other JFK terminals and access to additional transit options. Figure 1 is a rendering of the new Terminal 6.

Figure 1: New Terminal 6 at JFK<sup>11</sup>



<sup>11</sup> Source: JMP



## 4. New York & Role of JFK

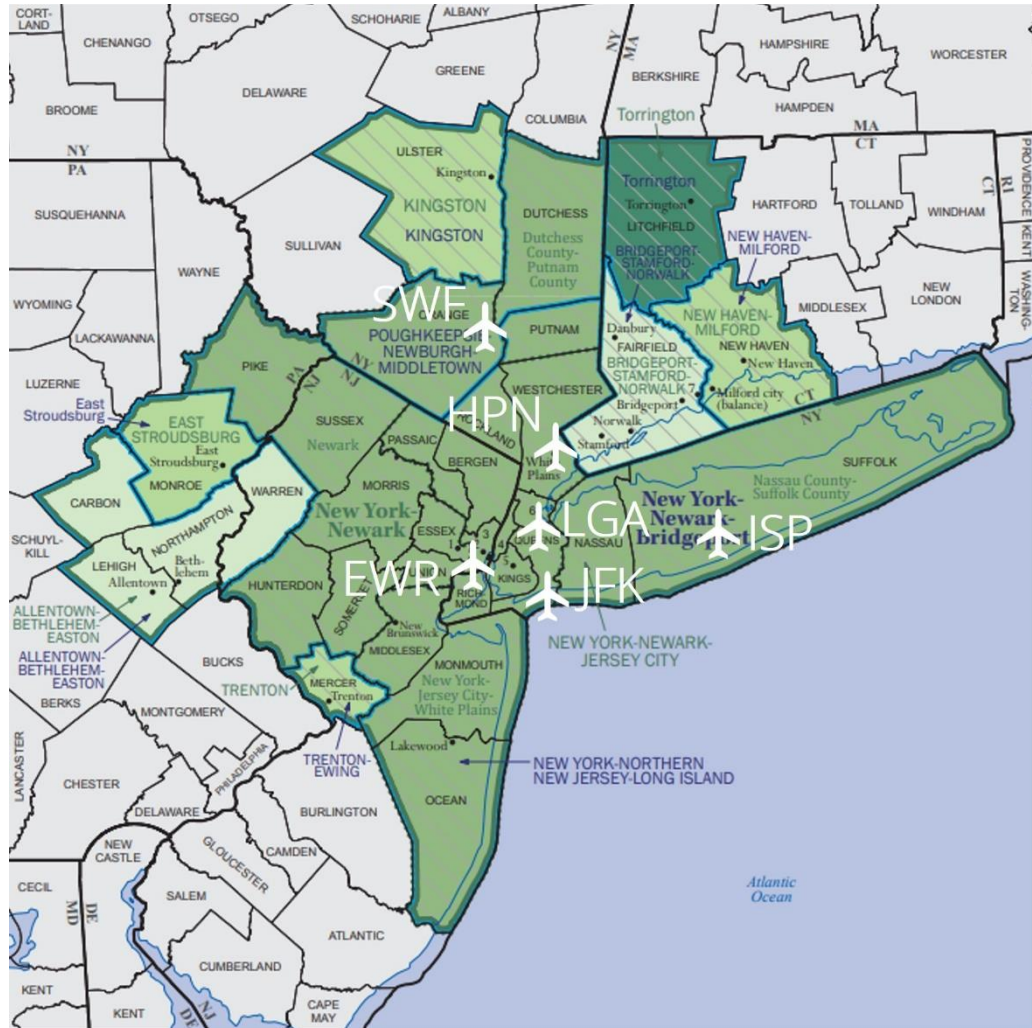
### Key Takeaways

1. The New York CSA has the highest population among all U.S. CSAs with 22.5 million people
2. The New York CSA is the country's largest air transportation market, generating 71.7 million passenger enplanements in 2019
3. JFK is the busiest airport in the New York CSA with a 43.8% share of passenger enplanements in the New York CSA airports in Jan – July 2019
4. JFK's primary catchment area includes 49.3% of the New York CSA's population, while also attracting passengers from other parts of New York City and its New York, New Jersey, Connecticut, and Pennsylvania suburbs
5. JFK is the sixth busiest U.S. airport in passenger enplanements and the country's largest international gateway in 2019
6. JFK is a slot-controlled airport with federally regulated limits on the number of hourly aircraft movements

### New York CSA

The primary definition of the New York region in this Report is the New York-Newark, NY-NJ-CT-PA Combined Statistical Area (New York CSA) as defined by the U.S. Census Bureau. The New York CSA covers a wide geographic area in New York, New Jersey, Connecticut, and Pennsylvania whose population, economy, infrastructure, goods and services, and transportation flows are centered or heavily influenced by New York City and are part of or connected to JFK's catchment area. Figure 2 shows a map of the New York CSA and the location of the region's commercial passenger airports.

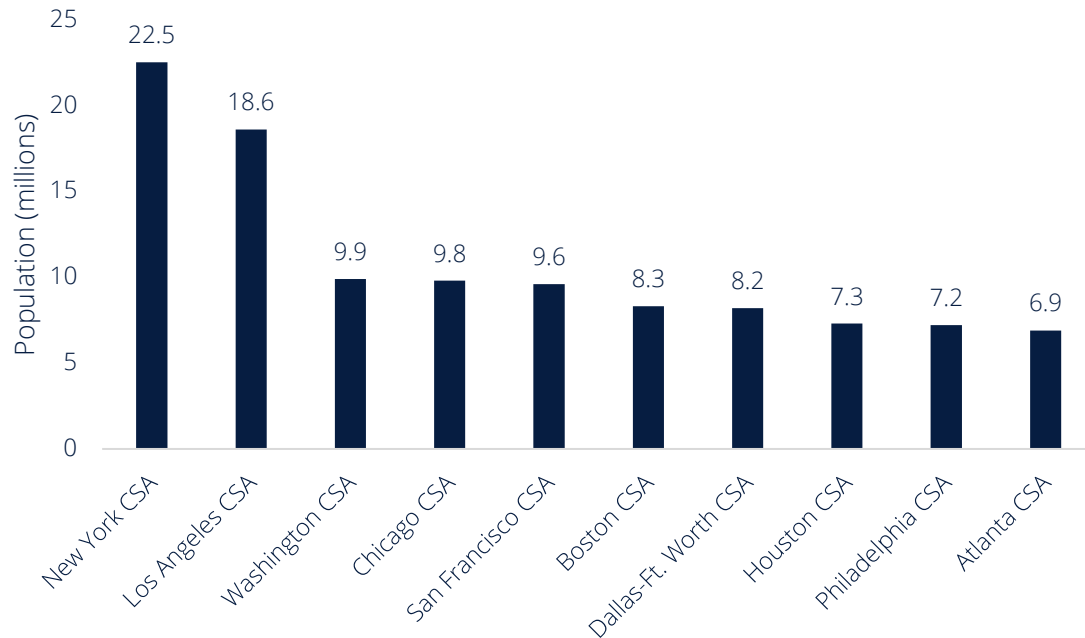
Figure 2: New York CSA<sup>12</sup>



The New York CSA has the largest population in the U.S with 22.5 million people. It has 20.7% more people than the second largest CSA in Los Angeles and 128.0% more than the third largest in Washington. Figure 3 shows the 2020 estimated population for the 10 most populated U.S. CSAs.

<sup>12</sup> Source: U.S. Census Bureau

Figure 3: 2020 10 Largest CSAs by Population<sup>13</sup>



**Region**

Los Angeles CSA  
Washington CSA  
Chicago CSA  
San Francisco CSA  
Boston CSA  
Dallas-Ft. Worth CSA  
Houston CSA  
Philadelphia CSA  
Atlanta CSA

**CSA Definition**

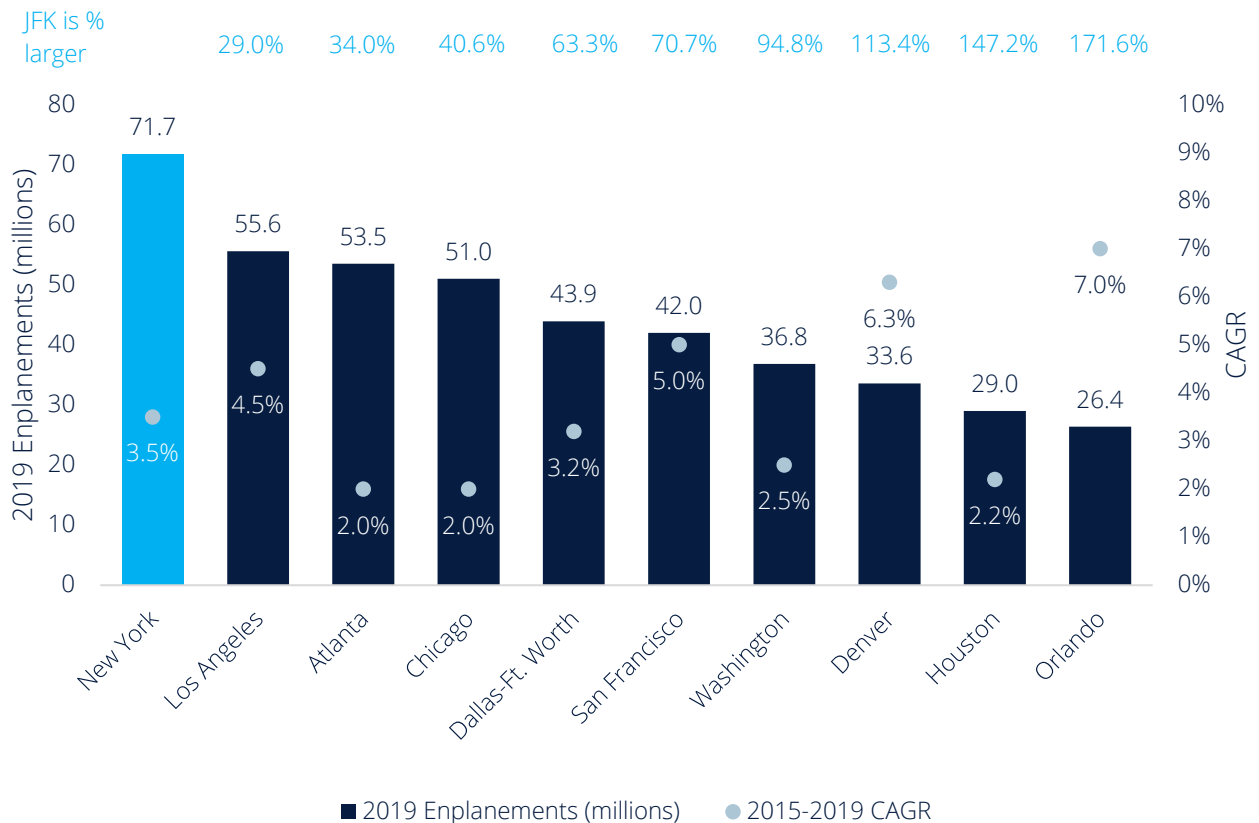
Los Angeles – Long Beach, CA CSA  
Washington – Baltimore – Arlington, DC-MD-VA-WV-PA CSA  
Chicago – Naperville, IL-IN-WI CSA  
San Jose – San Francisco – Oakland, CA CSA  
Boston – Worcester – Providence, MA-RI-NH-CT CSA  
Dallas – Ft. Worth, TX-OK CSA  
Houston – The Woodlands, TX CSA  
Philadelphia – Reading – Camden, PA-NJ-DE-MD CSA  
Atlanta – Athens – Clarke County – Sandy Springs, GA-AL CSA

<sup>13</sup> U.S. Census Bureau

## New York CSA Airports

The New York CSA is also the largest air transportation market in the U.S. in passengers, as shown in Figure 4.

Figure 4: 2019 Largest U.S. Air Transportation Markets<sup>14</sup>



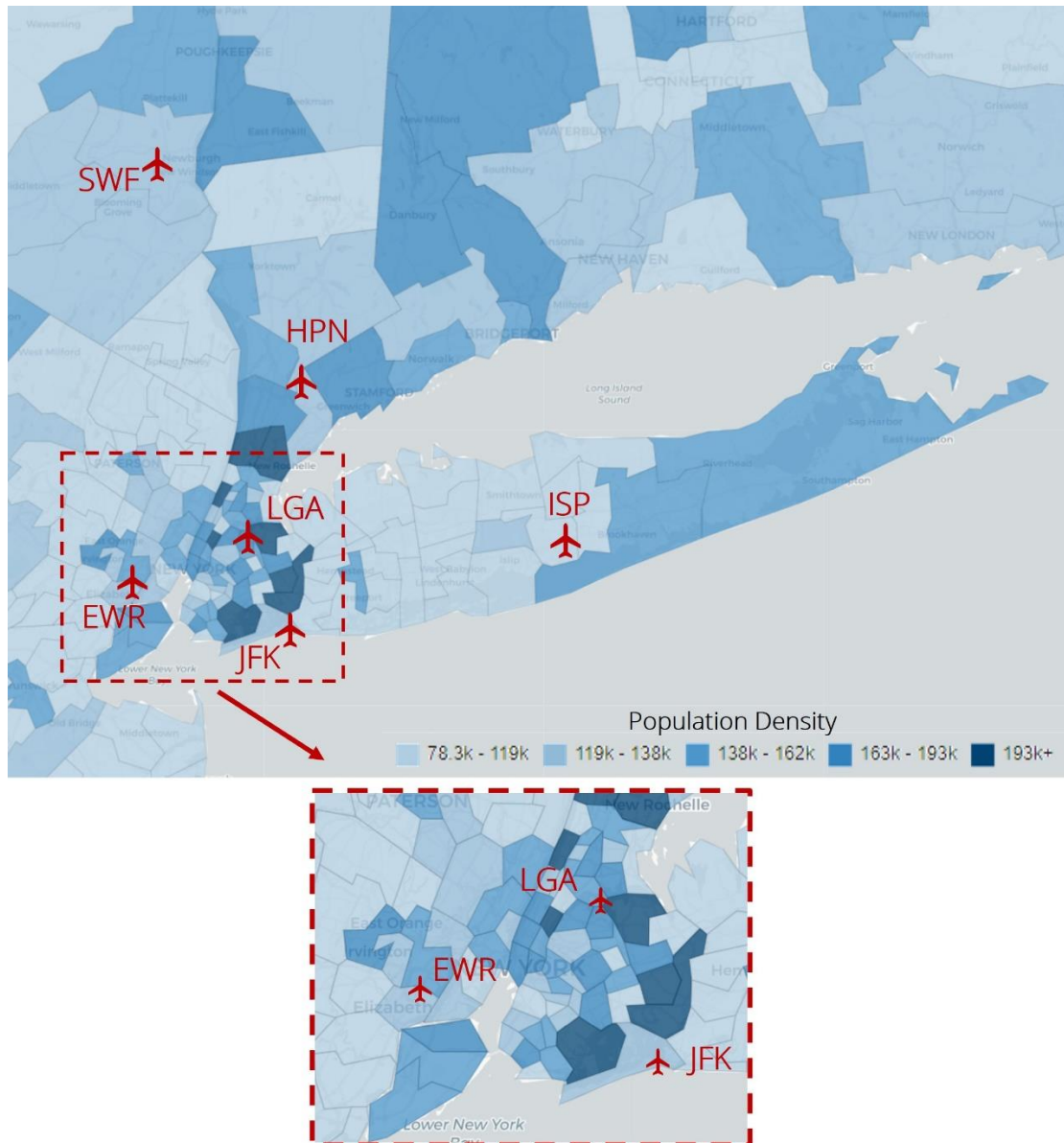
Between 2015 and 2019, the New York CSA had the fifth highest traffic growth rate among the top 10 largest U.S. CSAs with a 3.5% CAGR. Orlando CSA (7.0% CAGR), Denver CSA (7.0% CAGR), San Francisco CSA (5.0% CAGR), and Los Angeles CSA (4.5% CAGR) had higher growth rates than the New York CSA, while the Dallas-Ft. Worth CSA (3.2%), Houston (2.2% CAGR), Atlanta CSA (2.0% CAGR), Chicago CSA (2.0% CAGR), and Washington CSA (2.5% CAGR) trailed behind the New York CSA. The New York CSA's strong growth rate demonstrates robust demand travel in its area, despite the New York CSA being the only one of those five largest CSAs whose airports have the number of aircraft movements limited by slot controls.

<sup>14</sup> Source: U.S. DoT T100. CSA Airports: New York (JFK, EWR, LGA, ISP, HPN, SWF), Los Angeles (LAX, BUR, ONT, SNA, LGB), Chicago (ORD, MDW), Dallas-Ft. Worth (DFW, DAL), San Francisco (SFO, OAK, SJC), Baltimore-Washington (BWI, IAD, DCA), Houston (IAH, HOU), Orlando (MCO, SFB, MLB).



Six airports are included in the New York CSA. Figure 5 shows the location of the six airports as well as the population density in the New York CSA. The primary airports (JFK, EWR & LGA) are all classified as large hubs by the Federal Aviation Administration (FAA).<sup>15</sup> ISP and HPN are considered small hubs by the FAA, while SWF is considered a non-hub airport.

Figure 5: New York CSA Airports and Population Density<sup>16</sup>



<sup>15</sup> Source: FAA, based on calendar year 2020 enplanements. Large hub airports receive 1% or more of annual U.S. commercial enplanements. Small hub airports receive 0.05% to 0.25% of annual U.S. commercial enplanements. Non-hub airports receive less than 0.05% but more than 10,000 of the annual U.S. commercial enplanements.

<sup>16</sup> Source: Population density by Public Use Microdata Area (PUMA), U.S. Census Bureau, 2019 America Community Survey





## JFK's Primary Catchment Area

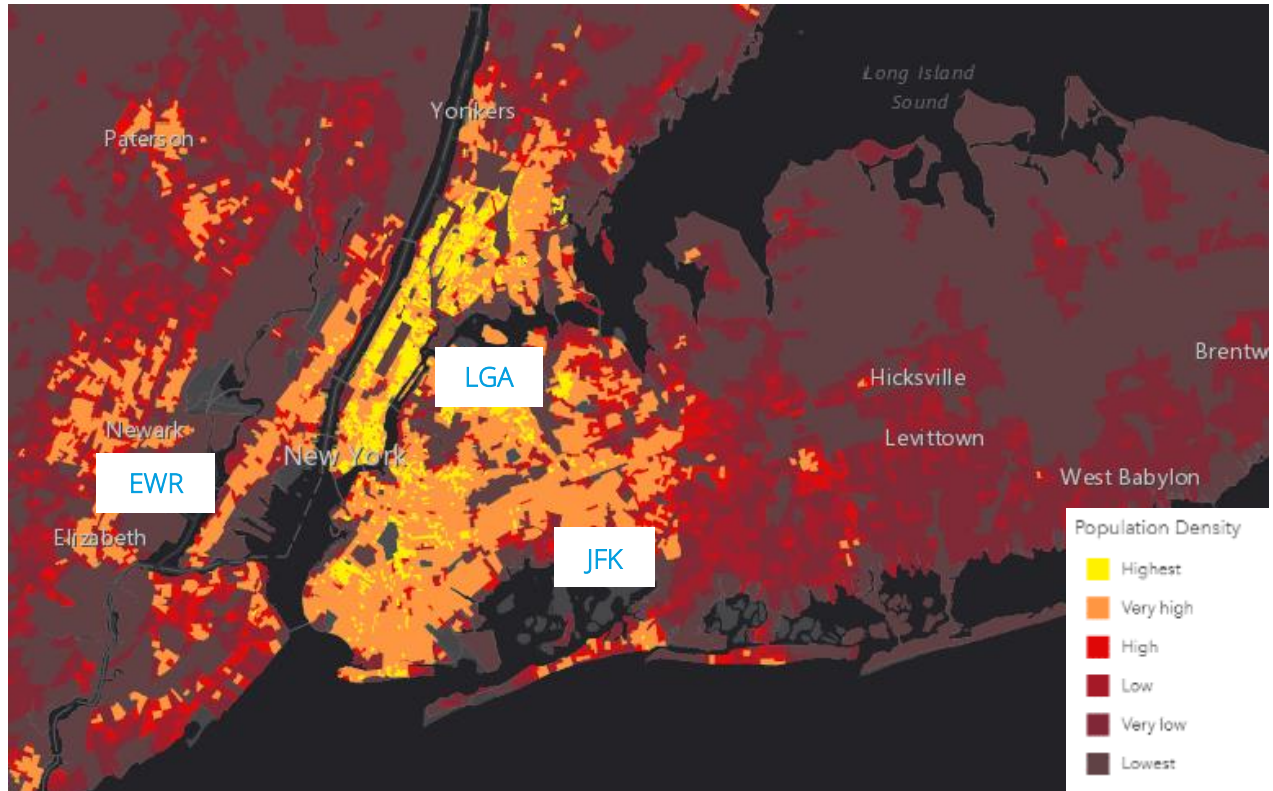
Passenger choice of airports is driven by several factors, location and convenience being key in such a large and densely populated region. The three primary airports (JFK, EWR, and LGA) draw passengers from across the area based on their location. Passengers from Brooklyn, Queens, and Long Island, for example, are substantially closer to JFK than EWR (in both physical distance and journey time) and more likely to choose JFK as their primary airport. On Long Island, 2.9 million residents would have to bypass JFK to reach EWR. Table 1 shows the population distribution across the New York CSA with JFK's primary catchment area and Figure 6 shows the New York City area population density (including New York City and closest suburbs of Long Island, Westchester, and New Jersey).

Table 1: 2020 New York CSA Population<sup>17</sup>

	Population	% of Catchment	% of NY Area
<b>JFK Primary Catchment</b>			
Kings County (Brooklyn)	2,538,934	22.9%	11.3%
Queens County	2,225,821	20.1%	9.9%
New York County (Manhattan)	1,611,989	14.6%	7.2%
Suffolk County	1,474,273	13.3%	6.6%
Bronx County	1,401,142	12.6%	6.2%
Nassau County	1,351,334	12.2%	6.0%
Richmond County (Staten Island)	475,327	4.3%	2.1%
Subtotal – JFK Primary Catchment	11,078,820	100.0%	49.3%
<b>Surrounding County Catchment</b>			
New Jersey	6,966,147	61.0%	31.0%
New York	2,246,802	19.7%	10.0%
Connecticut	1,973,984	17.3%	8.8%
Pennsylvania	226,226	2.0%	1.0%
Subtotal – Surrounding Counties	11,413,159	100.0%	50.7%
<b>Total JFK Catchment</b>	<b>22,491,979</b>	<b>100.0%</b>	<b>100.0%</b>

<sup>17</sup> Source: U.S. Census Bureau

Figure 6: New York City Area Population Density<sup>18</sup>



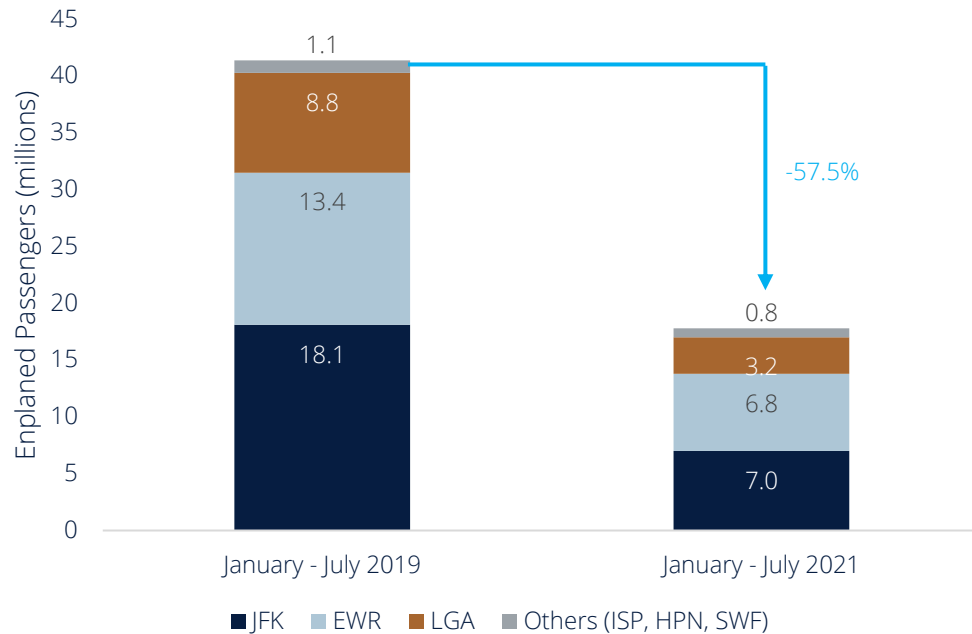
JFK's primary catchment area has a population of 11.1 million people, and on its own would be the second largest CSA in the U.S. behind the Los Angeles CSA. JFK's primary catchment area has 1.2 million more people than the Washington CSA, 1.3 million more people than the Chicago CSA, and 1.5 million more people than the San Francisco CSA.

### Busiest Airport and Primary International Gateway in the New York CSA

JFK is the busiest of the New York CSA airports with a 43.8% share of the region's passenger enplanements prior to the COVID-19 pandemic (January – July 2019). Between January – July 2019 and January – July 2021 the region's passenger enplanements decreased by 57.5% and JFK's share of New York CSA passenger enplanements decreased to 39.8% in January – July 2021, primarily due to the temporary loss of international traffic subject to travel restrictions. Figure 7 summarizes the passenger enplanements at the New York CSA airports.

<sup>18</sup> Source: Esri, HERE, Garmin, U.S. Geological Survey, Environmental Protection Agency, and National Park Service via ArcGIS mapping

Figure 7: New York CSA Airport Departing Enplaned Passengers (millions)<sup>19</sup>



In January – July 2019, JFK generated 67.0% of the New York CSA's international passenger enplanements and 31.0% of its domestic enplanements, as shown in Table 2.

Table 2: New York CSA Airport Departing Enplaned Passengers (millions)<sup>20</sup>

Airport	January – July 2019 Enplanements			New York CSA Share		
	Domestic	International	Total	Domestic	International	Total
JFK	8.3	9.8	18.1	31.0%	67.0%	43.8%
EWR	9.2	4.1	13.4	34.5%	28.2%	32.3%
LGA	8.2	0.6	8.8	30.6%	4.4%	21.3%
Major	25.7	14.6	40.3	96.1%	100%	97.3%
HPN	0.5	0.0	0.5	1.9%	0.0%	1.2%
ISP	0.4	0.0	0.4	1.6%	0.0%	1.1%
SWF	0.1	0.1	0.2	0.4%	0.4%	0.4%
Other	1.0	0.1	1.1	3.9%	0.5%	2.7%
<b>Total</b>	<b>26.7</b>	<b>14.7</b>	<b>41.4</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

<sup>19</sup> Source: Sabre Market Intelligence

<sup>20</sup> Source: U.S. DoT T100

Airport	January – July 2021 Enplanements			New York CSA Share		
	Domestic	International	Total	Domestic	International	Total
JFK	4.1	2.9	7.0	31.1%	66.5%	39.8%
EWR	5.4	1.4	6.8	40.4%	33.1%	38.6%
LGA	3.2	0.0	3.2	24.3%	0.4%	18.4%
Major	12.7	4.3	17.0	95.7%	100%	96.8%
HPN	0.3	0.0	0.3	2.1%	0.0%	1.6%
ISP	0.3	0.0	0.3	2.0%	0.0%	1.5%
SWF	0.0	0.0	0.0	0.2%	0.0%	0.2%
Other	0.6	0.0	0.6	4.3%	0.0%	3.2%
<b>Total</b>	<b>13.3</b>	<b>4.3</b>	<b>17.6</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Substantial connecting service offered by JetBlue, Delta, and American make JFK a key access point for international traffic connecting beyond New York to other domestic destinations as well as to Canada, Latin America, and the Caribbean. Delta and American are members of the major international airline alliances (Skyteam and Oneworld, respectively), while JetBlue has relationships with several international airlines that enable passenger connections between the carriers<sup>21</sup>.

### Role of Other New York CSA Airports

International service is also offered at Newark Liberty International Airport (EWR), which is a domestic and international hub for United Airlines and some of its Star Alliance airline partners.

The region's third major airport, LaGuardia Airport (LGA), is a largely domestic airport because it does not have facilities for international arrivals (e.g. passenger customs and immigration processing at a Federal Inspection Station), so flights arriving from outside the U.S. must depart from airports capable of pre-clearing passengers. In 2019, pre-cleared flights to LGA were operated from Aruba, Bermuda, the Bahamas, and Canada (Halifax, Ottawa, Montreal, and Toronto).<sup>22</sup>

In addition to the three primary airports, the New York CSA is also served by secondary airports in Islip (ISP), White Plains (HPN), and Newburgh (SWF).

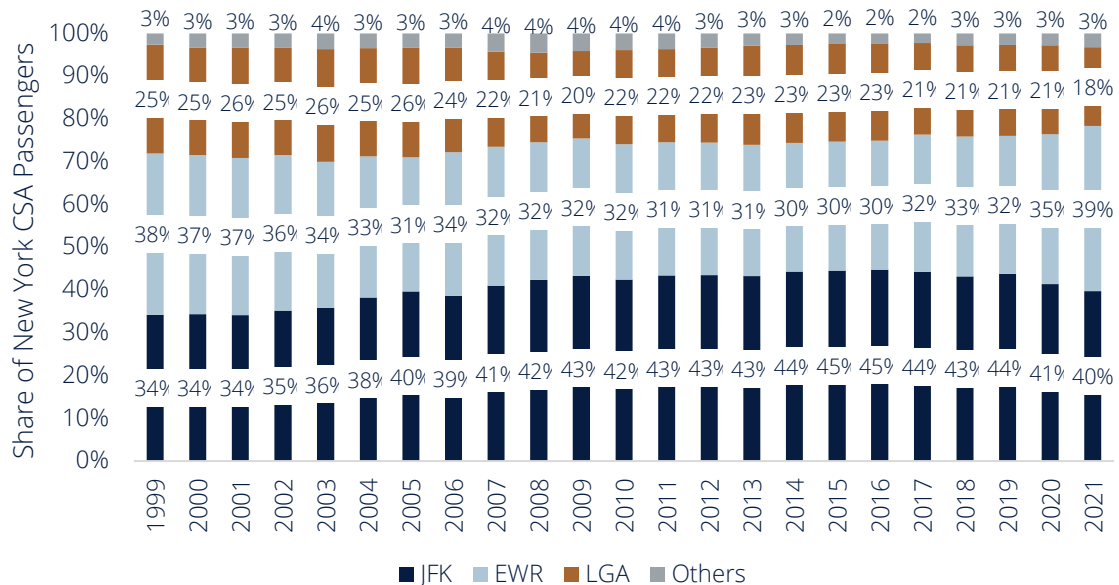
### JFK's Passenger Traffic Share

JFK's share of New York CSA passengers has consistently been in the low to mid 40% range since the late 2000's, having increased 5 – 10 percentage points during the 2000s, as shown in Figure 8.

<sup>21</sup> Source: Skyteam, Oneworld, and airline websites

<sup>22</sup> Source: airlinedata.com

Figure 8: New York CSA Airports Passenger Traffic Share (January – July Each Year)<sup>23</sup>



JFK's increased market share was comprised of approximately five to six percentage points from EWR while three to four market share points shifted to JFK from LGA. The increase in JFK's share of New York CSA passenger traffic was primarily due to the launch and growth of JetBlue and the development of Delta's hub at JFK. JFK's share of New York CSA international passenger traffic increased from 63% - 65% during the 2000s to 67% - 69% in the 2010s. JFK's share of New York CSA domestic passenger traffic climbed from 21% to 31% - 33% during the 2000s and has remained close to that level since.<sup>24</sup>

All three major New York airports have limits on the number of aircraft movements due to runway and airspace constraints. Each airport is subject to federally regulated slot control and coordination, as detailed in the next section of this Report. In 2016, the FAA relaxed the slot restrictions at EWR which resulted in the airport's share of passenger enplanements increasing by approximately two percent over the two years that followed, coming from both JFK and LGA. While EWR is not at the same level of slot coordination as JFK and is also experiencing infrastructure re-development, constraints at EWR and across the New York CSA airports do not create an opportunity for substantial share shift from JFK over the long term.

<sup>23</sup> Source: U.S. DoT T100. Other airports are ISP, HPN, SWF.

<sup>24</sup> Source: U.S. DoT T100



## Airport Slot Constraints

Slots are the granting of permission for one aircraft movement, which is either a takeoff or a landing at an airport, so each flight requires a pair of slots to operate. They are used at airports with runway or airspace constraints necessitating limits on the number of aircraft movements.

Slot pairs are typically granted seasonally (summer or winter) and by day-of-week and 30-minute increment (a 6:00 slot could be used anytime between 6:00 and 6:29). They are usually grandfathered from one year to the next if an 80% usage requirement is met.

Airlines can and frequently do trade or lease slots at an airport with other carriers. Slot pair exchanges are usually done to optimize an airlines' schedule, add flights when one carrier cannot obtain more slots on their own, or ensure that a slot's 80% usage requirement is met.

Most airports around the world follow slot guidelines published and managed by IATA, who:

- Identifies the coordinating authority at each airport
- Provides a standardized process for applying and granting slots as well as performance management (monitoring the 80% usage requirement)
- Creates a common platform for exchanging or trading slots among airlines

Under the slot guidelines, the amount of control varies by the level of airport operational capacity available:

- Level 1 airports have the operational infrastructure to meet airline needs all the time, so no formal slot coordination process is needed. Almost all the airports in the U.S. are Level 1.
- Level 2 airports have the potential for some congestion at peak times that is resolved by mutual agreement between airlines and with the airport management. There is typically some governance over the hourly aircraft movements with the airport authority or an independent slot coordinator. EWR is a Level 2 airport, along with ORD, LAX, and SFO in the U.S.
- Level 3 airports have operational demand that exceeds the airport infrastructure or capacity which requires active coordination. JFK, LGA, and DCA are the only Level 3 airports in the U.S.

## U.S. Slot Regulation

In the U.S., the FAA has jurisdiction over slot regulations<sup>25</sup> that are then coordinated by the local airport authorities. The FAA regulations mostly follow the IATA guidelines. The Port Authority manages slots at JFK, LGA, and EWR.

Under the FAA regulations, slots are considered an operating privilege and not property, so they cannot be bought or sold.

The FAA's slot regulations at JFK and LGA are technically temporary, although they are routinely extended without material changes<sup>26</sup>. Slots at both airports can only be traded or leased

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<sup>25</sup> Under the U.S. Code of Federal Regulations 14 CFR 93

<sup>26</sup> The current FAA Order Limiting Operations at JFK dates back to January 2008 and has now been extended eight times



through the end of the Order period, which is currently October 29, 2022 (end of the official summer schedule period).<sup>27</sup>

### New York CSA Airport Slot Control Program

Table 3 summarizes the fully coordinated slot rules at JFK and LGA. Since EWR is a Level 2 airport, similar types of rules are not in place.

**Table 3: JFK and LGA Airport Slot Rules<sup>28</sup>**

Rule	JFK	LGA
Hourly Aircraft Movement Limit	80	71 <sup>a</sup>
Minimum Usage	80%	80%
Usage Measured	Daily during schedule season	All days over 2 months
Hours of Control	06:00 – 22:59 daily	06:00 – 21:50 Mon – Fri <sup>b</sup> 12:00 – 21:59 Sun
Buy or Sell Slots	Not authorized	Not authorized
Trade or Lease Slots	Allowed	Allowed

a. LGA was at 75 aircraft movements per hour and slots grandfathered under previous 75 aircraft movements per hour limited are allowed to continue until surrendered back to the FAA

b. LGA slot controls are not in effect on Saturdays

Recognizing decreased demand for flights during the COVID-19 pandemic, the FAA joined authorities in other global regions in waiving the 80% usage requirement on a temporary basis. The waiver is in effect through October 29, 2022 when the current Order expires. Since domestic U.S. travel demand has started to recover faster than international travel demand, the current 80% usage requirement waiver only applies to international aircraft movements (even though slots are not assigned on a domestic/international basis).

### Slot Allocation Process

The IATA airport slot guidelines include a formal allocation process for airlines and airports that starts approximately six months before a season starts so airlines know which slots they can use in their flight schedules. When planning their flight schedules, JFK's airlines must balance their JFK slot times with the slot times available at the airport on the other end of the route to get the right departure and arrival times, which is often a reason for trading slots with other airlines.

If an airline fails to meet the 80% usage requirement, is reducing its capacity, or is surrendering slots for other reasons, those slots are returned to the FAA for distribution to other carriers. JFK and LGA have waiting lists for slots that become available, and the FAA uses a prioritization process to re-allocate returned slots based on an airlines' new entrant status, intended slot usage (new service, extending existing season, etc), or other factors decided at the time. Voluntary slot surrenders at a constrained and highly valuable airport like JFK are relatively rare.

<sup>27</sup> Docket FAA-2007-29320

<sup>28</sup> Source: FAA Order Limiting Operations at JFK and LGA





Airlines have been required to surrender slots back to the FAA as a remedy following Department of Transportation or Department of Justice merger and acquisition evaluations or other transactions that are judged to limit competition. It can include slot surrenders by one or more of the involved airlines or limits on slot usage (e.g. prohibiting certain routes). The reallocation process for the surrendered slots is typically aimed at mitigating the relevant competitive concern. For example, the FAA has frequently used slot auctions to encourage new entrants. The U.S. Department of Transportation required Delta and Westjet to divest eight slot pairs at LGA to get their codeshare<sup>29</sup> partnership approved in 2020.

The number of aircraft movements per hour at an airport, and therefore the number of available slots, is primarily dictated by runway and airspace capacity. There is currently no expectation of runway or airspace capacity increasing in the New York CSA for the foreseeable future, so it is highly unlikely that the number of slots at JFK or LGA will increase. As the number of aircraft movements grows at EWR, it is possible that the airport will eventually revert to Level 3 (it moved to Level 2 in 2016). In terms of future evolution, aircraft and air traffic control technology that increases the number of potential runway or airspace operations is being developed, although its potential impact on the New York CSA airports is currently uncertain.

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<sup>29</sup> Codesharing is the practice by two or more airlines publish or market the same flight using each airline's own flight number. For example, Delta operates its flight 262 between JFK and Paris, with Air France selling the same flight as Air France flight 5301.





## 5. JFK Passenger Traffic

### Key Takeaways

1. JFK generated 31.2 million passenger enplanements in 2019, 54.3% of which were international and 86.2% were origin-destination. A high percentage of origin-destination passengers is an advantage for JFK because it represents a more stable source of passengers than connecting passengers.
2. In January – July 2021, JFK generated 38.7% of the passenger enplanements during the same 2019 months, including 49.8% of its domestic enplanements and 29.3% of its international enplanements
3. International traffic had been slower to return, primarily due to European border restrictions and travel requirements that were mostly lifted in November 2021
4. JFK has historically shown resilience in passenger traffic recovery following economic crises and exogenous events, with only three years needed to recover enplanements following the 9/11 Attacks and 2007 - 2008 Global Financial Crisis
5. Passenger traffic recovered throughout 2021 with January 2021 passenger traffic at 23.6% of 2019 levels and November 2021 JFK passenger traffic at 78.3% of 2019 levels, showing significant signs of recovery<sup>30</sup>

This section covers passenger traffic at JFK, including the busiest markets, passenger connections, as well as domestic and international passenger traffic trends.

### Passenger Volumes at JFK

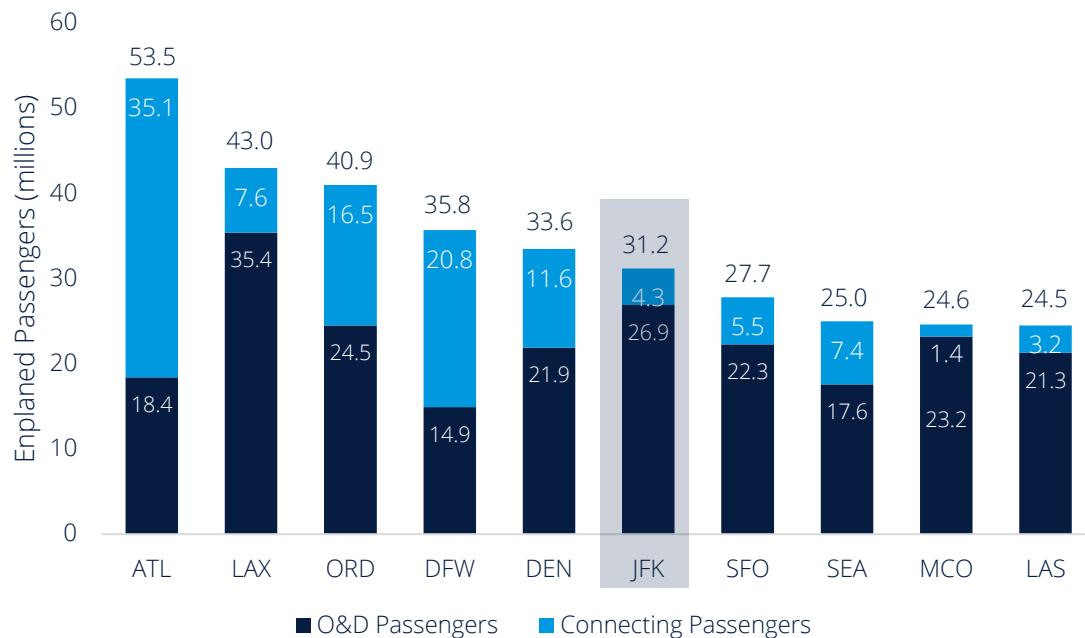
JFK was the 20<sup>th</sup> busiest airport in the world based on passenger traffic in 2019. The airports with more traffic than JFK include eight in Asia, five in the U.S. four in UK/Europe, and one each in the Gulf and India<sup>31</sup>.

In 2019, JFK was the sixth busiest airport in the U.S. in terms of enplaned passengers with 31.2 million and second busiest for origin-destination passengers with 26.9 million, as shown in Figure 9.

<sup>30</sup> Source: Port Authority of New York & New Jersey monthly passenger traffic reports

<sup>31</sup> Source: Airports Council International World Airport Traffic Ranking

Figure 9: 10 Busiest U.S. Airports by 2019 Revenue Enplaned Passengers<sup>32</sup>



ATL was the busiest airport in the United States with 53.5 million enplaned passengers. ATL is the primary hub for Delta and therefore relies on connecting passengers for a substantial portion of its traffic. JFK, however, draws on the size and strength of the larger New York CSA origin-destination market for its passenger traffic. None of the other top 10 busiest U.S. airports are in the northeast.

In terms of the other primary New York CSA airports, EWR was the 12<sup>th</sup> busiest U.S. airport with 23.2 million enplaned passengers and LGA was the 21<sup>st</sup> busiest U.S. airport with 15.4 million enplaned passengers in 2019.

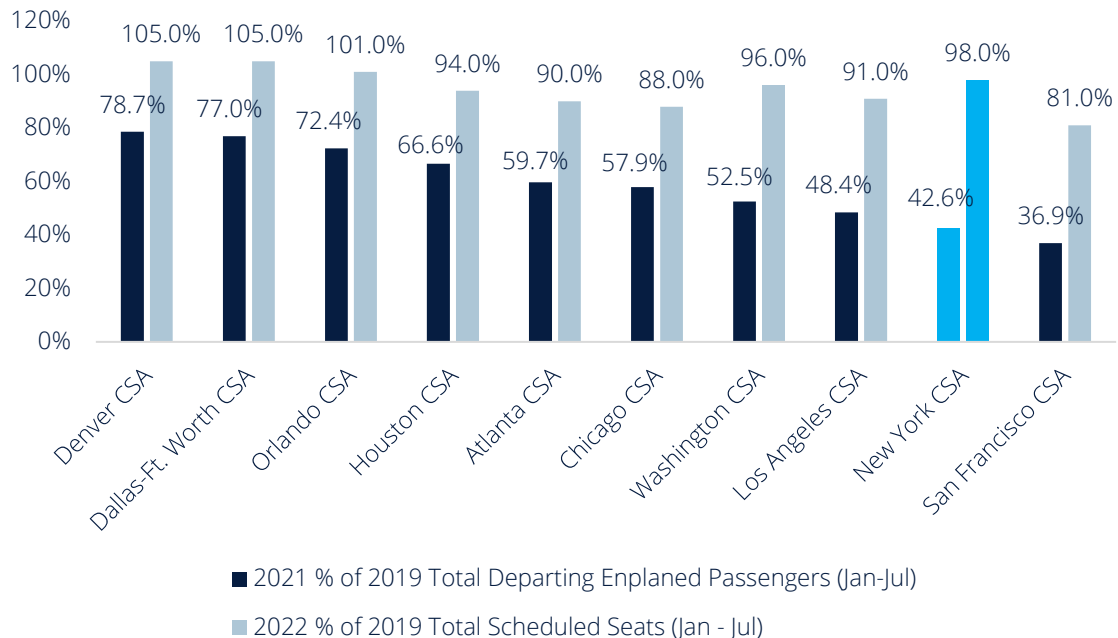
### COVID-19 Pandemic Passenger Traffic Recovery

The New York CSA's traffic recovery is lagging most of the other 10 largest U.S. CSAs, as shown in Figure 10. The primary reason is that 35.4% of the New York CSA's enplaned passengers were international in 2019<sup>33</sup>, and international passenger traffic has been slower to recover than domestic passenger traffic due to border restrictions and more requirements than domestic travel (e.g. statutorily imposed quarantines, mandatory pre-departure and post-arrival COVID testing).

<sup>32</sup> Source: U.S. DoT T100 for enplaned passengers, and U.S. DoT O&D Survey for origin-destination passengers.

<sup>33</sup> Source: U.S. DoT T100

Figure 10: Passenger Traffic and Seat Capacity Recovery in 10 Largest U.S. CSAs<sup>34</sup>



The Los Angeles CSA area is the second largest U.S. air transportation market and is also trailing other U.S. CSAs with more domestic-oriented passenger traffic. The Los Angeles CSA had the second highest proportion of international traffic in the U.S. with 23.0% of 2019 passenger enplanements<sup>35</sup>. The common traffic trend between the New York CSA and Los Angeles CSA demonstrates that the slower pace of traffic recovery relates to international travel restrictions and not a negative change in the New York CSA's regional dynamics.

### JFK Remains Largest U.S. International Gateway

JFK retains its position as the largest international gateway in the U.S. In January - July 2021, JFK generated 29.3% of the international traffic that it did during the same months in 2019. Other international gateways are experiencing international traffic volumes closer to their 2019 levels largely because their primary international markets saw fewer border-related travel restrictions (e.g. Mexico) and have a higher proportion of leisure traffic that is leading the recovery. As the COVID-19 pandemic recovery progresses, and in particular European travel restrictions ease, JFK's international traffic is expected to fully rebound and JFK retain its position as the leading U.S. international gateway.

<sup>34</sup> Source: traffic – U.S. DoT T100, capacity – airlinedata.com (published schedules as of January 26, 2022). CSA Airports: New York (JFK, EWR, LGA, ISP, HPN, SWF), Los Angeles (LAX, BUR, ONT, SNA, LGB), Chicago (ORD, MDW), Dallas-Ft. Worth (DFW, DAL), San Francisco (SFO, OAK, SJC), Baltimore-Washington (BWI, IAD, DCA), Houston (IAH, HOU), Orlando (MCO, SFB, MLB).

<sup>35</sup> Source: U.S. DoT T100



## Enplaned Passenger Trends

JFK's enplanements grew by 37.3% over the past 10 years (2009 – 2019), as shown in Table 4.

Table 4: JFK Historical Enplaned Domestic and International Passengers<sup>36</sup>

Year	Enplaned Passengers (000)			Annual Percent Change		
	Domestic	International	Total	Domestic	International	Total
2000	6,996	9,018	16,014	-	-	-
2001	6,610	7,844	14,454	-5.5%	-13.0%	-9.7%
2002	7,234	7,284	14,518	9.4%	-7.1%	0.4%
2003	8,188	7,497	15,686	13.2%	2.9%	8.0%
2004	9,992	8,579	18,570	22.0%	14.4%	18.4%
2005	10,937	9,267	20,204	9.5%	8.0%	8.8%
2006	11,399	9,735	21,134	4.2%	5.0%	4.6%
2007	12,696	10,716	23,412	11.4%	10.1%	10.8%
2008	12,591	11,057	23,648	-0.8%	3.2%	1.0%
2009	11,982	10,727	22,709	-4.8%	-3.0%	-4.0%
2010	11,549	11,390	22,940	-3.6%	6.2%	1.0%
2011	11,881	11,782	23,663	2.9%	3.4%	3.2%
2012	12,090	12,454	24,544	1.8%	5.7%	3.7%
2013	11,971	13,066	25,036	-1.0%	4.9%	2.0%
2014	12,470	13,775	26,245	4.2%	5.4%	4.8%
2015	13,142	14,811	27,953	5.4%	7.5%	6.5%
2016	13,509	15,762	29,270	2.8%	6.4%	4.7%
2017	13,436	16,118	29,554	-0.5%	2.3%	1.0%
2018	14,032	16,644	30,676	4.4%	3.3%	3.8%
2019	14,160	17,015	31,175	0.9%	2.2%	1.6%
2020	4,146	4,150	8,296	-70.7%	-75.6%	-73.4%
Compound Annual Growth Rate						
2000-2005	9.3%	0.5%	4.8%			
2006-2010	0.3%	4.0%	2.1%			
2000-2019	3.8%	3.4%	3.6%			
2009-2019	1.7%	4.7%	3.2%			
2014-2019	2.6%	4.3%	3.5%			

Between 2009 and 2019, JFK's enplaned traffic grew at an average of 3.2% per year, faster than the national average growth rate of 3.0% per year. During that decade, JFK's international passenger enplanements increased by 58.6% while JFK's domestic passenger enplanements grew by 18.2%.

In 2019, 31.2 million passengers enplaned at JFK, 1.6% more than 2018. International passenger enplanements grew by 2.2% over 2018 while domestic enplanements increased 0.9% from the previous year. However, 2018 was a relatively strong growth year with 3.8% more enplanements than 2017 (30.7 million to 29.6 million). Over the two-year period 2017 – 2019, JFK's

<sup>36</sup> Source: U.S. DoT T100



enplanements grew by 5.5%, including 5.4% growth in domestic enplanements and a 5.6% increase in international enplanements.

In 2019, domestic enplanements accounted for 54.6% of JFK's total passenger enplanements while international enplanements accounted for 45.4%. Over the past 10 years, the share of domestic enplanements has grown at JFK. In 2009, domestic enplanements accounted for 52.8% and international enplanements accounted for 47.2% of JFK's total. Capacity growth by JetBlue and the domestic component of Delta's hub at JFK are major contributors to the traffic shift.

### Passenger Traffic Growing Faster Than Seat Capacity

Passenger enplanement growth at JFK between 2017 and 2019 exceeded the increase in seat capacity. Over those two years, the number of enplaned passengers grew by 5.4% while departing domestic seats at JFK increased by 2.9% and departing international seats increased by 2.0% for a total growth of 2.4%. The increased capacity was primarily driven by airline use of larger aircraft. Between 2017 and 2019, domestic departures from JFK increased by only 0.7% and international departures declined by 0.2% for a total change of 0.4%.

The increasing size of aircraft airlines are using at JFK can be seen in an increase in the number of seats per departure. Between 2009 and 2019, the average number of seats per departure increased by four from 173 to 177 between 2017 and 2019 and has grown by 25 seats over the past 10 years from 152 seats to 177 seats, an increase of 16.5%.

### COVID-19 Passenger Traffic Recovery

From January – July 2021, JFK enplaned passengers had returned to 38.7% of the enplaned passenger levels during the same period of 2019, as shown in Table 5.

**Table 5: JFK Enplaned Domestic and International Passengers<sup>37</sup>**

Passenger Type	Jan – July Enplaned Passengers (000)		Share		2021 as % of 2019
	2019	2021	Jan – July 2019	Jan – July 2021	
Domestic	8,278	4,125	45.7%	58.9%	49.8%
International	9,826	2,883	54.3%	41.1%	29.3%
Total	18,104	7,008	100.0%	100.0%	38.7%

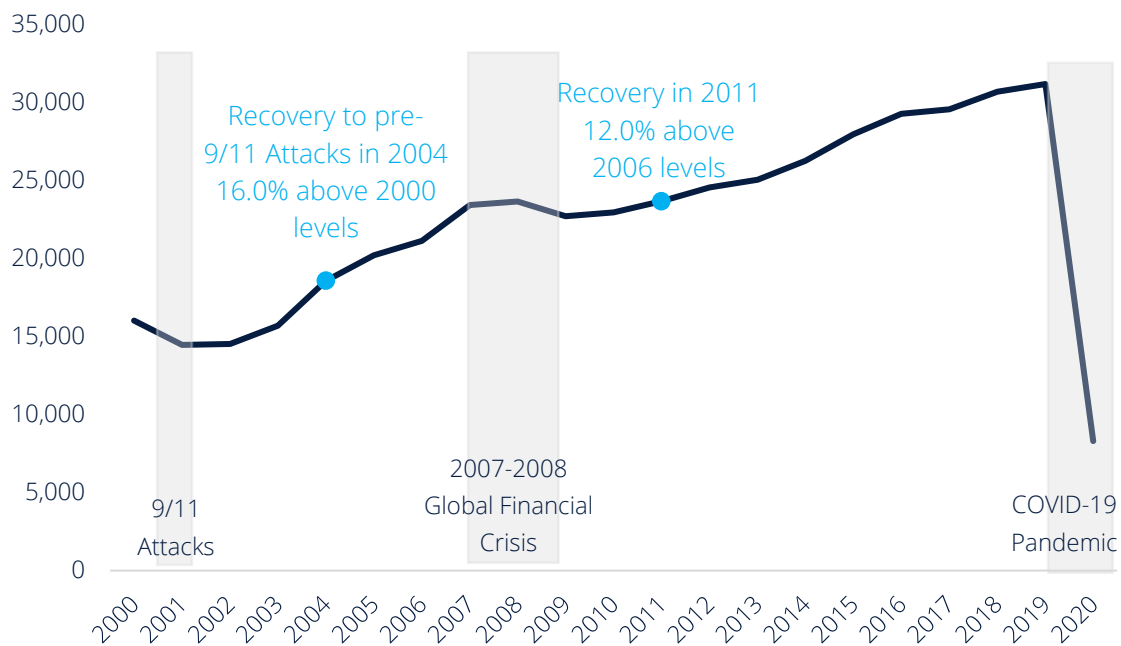
The share of domestic traffic increased from 45.7% during the first seven months of 2019 to 58.9% during the first seven months of 2021. International passenger demand, and particularly European and Asian passenger traffic, is returning more slowly than domestic demand due to ongoing travel restrictions.

<sup>37</sup> Source: U.S. DoT T100

## JFK Passenger Traffic Resilient Following Economic Downturns

Passenger traffic at the New York CSA airports, and JFK in particular, has been resilient in recovering from the major economic downturns of the past two decades, as can be seen in Figure 11.

Figure 11: JFK Historical Enplaned Passengers (000)<sup>38</sup>



Following both the 9/11 Attacks and 2007 - 2008 Global Financial Crisis, JFK's enplaned traffic levels recovered in approximately three years and resumed a growth trajectory. During the year traffic reached pre-crisis levels, passenger enplanements grew beyond pre-crisis levels by 12.0% (2007 - 2008 Global Financial Crisis) and 16.0% (9/11 Attacks), which shows that the New York CSA rebounds strongly during economic recoveries.

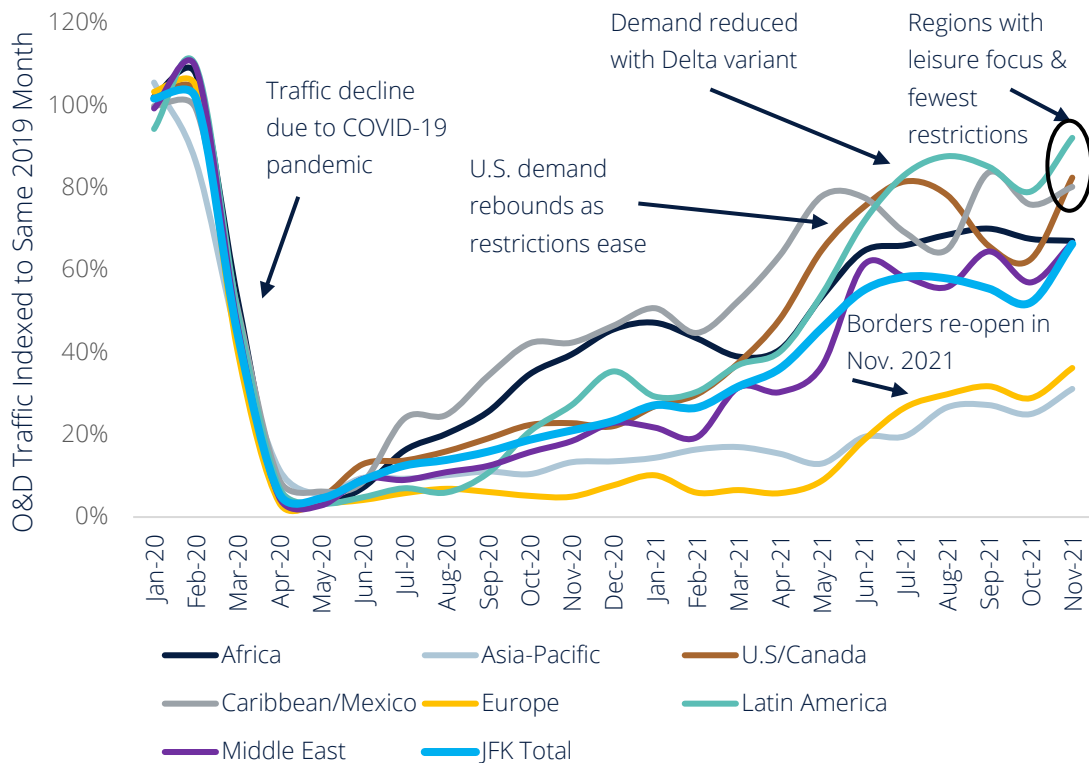
## 2021 Passenger Traffic Recovery

As of November 2021, JFK's total origin-destination traffic had recovered to 66.3% of November 2019 levels. Domestic and Canadian origin-destination traffic reached 82.4% of November 2019 levels while international origin-destination traffic was 54.4% of November 2019. While there have been setbacks associated with COVID-19 waves in the U.S. and other global regions, traffic recovery has been relatively steady throughout 2021. The pace and magnitude of recovery in each region has been closely associated with the ability to travel (e.g. travel restrictions and COVID-19 case rates) and the amount of leisure travel in the region. Domestic, Caribbean, Mexico, and Latin American origin-destination traffic have recovered the most. Strict border controls have minimized traffic recovery in Europe and Asia-Pacific (heavily influenced by China).

<sup>38</sup> Source: U.S. DoT T100

Figure 12 shows the recovery trajectory of JFK's origin-destination traffic as indexed to the respective month in 2019 for global regions.

Figure 12: JFK Origin-Destination Traffic Indexed to Corresponding 2019 Month<sup>39</sup>



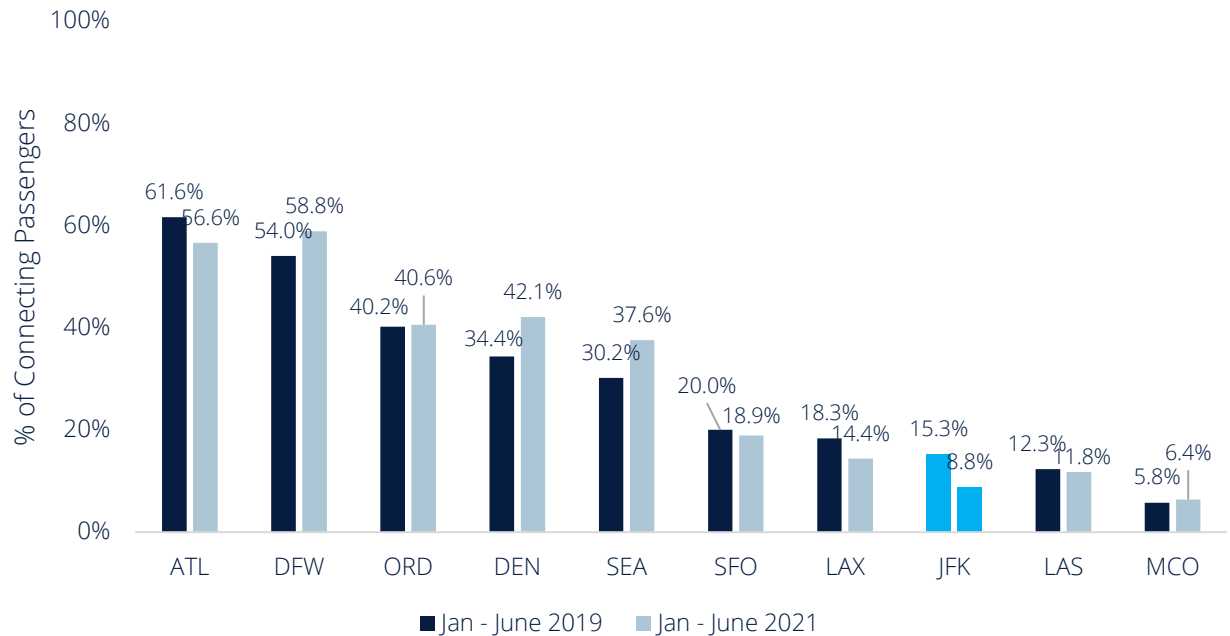
### Passenger Connections

The ability to generate origin-destination passenger traffic from a large and strong region like the New York CSA makes JFK attractive to airlines because it is a more stable source of passengers than connections. Connecting passengers have more options in where they connect. For example, a passenger from Buffalo flying to Europe could reasonably connect in Boston, New York, Philadelphia, Charlotte, or Washington. A passenger based in the New York CSA is highly likely to fly from a New York CSA airport, making origin-destination passengers a more stable source of passenger traffic.

Approximately 15.3% of JFK's enplaned passengers were connecting between flights in the first half of 2019, which was the third lowest among the 10 busiest U.S. airports by enplaned connecting passengers, as shown in Figure 13.

<sup>39</sup> Source: Sabre Market Intelligence (origin-destination traffic)

Figure 13: 10 Busiest U.S. Airports by Percentage of Connecting Passengers<sup>40</sup>



ATL had the highest proportion of connecting passengers at 61.6% during the 2019 period. JFK's relatively low connecting percentage is due to its being an origin-destination point for international traffic in the New York CSA.

During the first half of 2021, 8.8% of JFK's enplaned passengers were connecting to other flights which was the lowest among the 10 busiest U.S. airports<sup>41</sup>. The decrease from 2019 is primarily due to the reduction in European service resulting from travel restrictions and border closures, meaning there were fewer connecting flights being offered.

The percentage of connecting passengers at JFK declined over the five-year period before the COVID-19 pandemic, with the total number of connecting passengers at similar levels as it was in 2006 – 2007, as shown in Table 6.

<sup>40</sup> Source: U.S. DoT T100 for enplaned passengers, and U.S. DoT O&D Survey for origin-destination passengers. Data through June only because O&D survey is on a quarterly basis.

<sup>41</sup> Source: U.S. DoT T100, U.S. DoT O&D Survey





Table 6: JFK Historical Origin-Destination and Connecting Passengers<sup>42</sup>

Year	Enplaned Passengers (000)		Percent Total	
	Origin-Destination	Connecting	Origin-Destination	Connecting
2000	10,226	5,788	63.9%	36.1%
2001	11,626	2,828	80.4%	19.6%
2002	11,486	3,032	79.1%	20.9%
2003	12,936	2,750	82.5%	17.5%
2004	15,324	3,246	82.5%	17.5%
2005	17,225	2,979	85.3%	14.7%
2006	17,170	3,964	81.2%	18.8%
2007	18,576	4,835	79.3%	20.7%
2008	18,578	5,070	78.6%	21.4%
2009	17,962	4,747	79.1%	20.9%
2010	18,143	4,797	79.1%	20.9%
2011	18,845	4,818	79.6%	20.4%
2012	19,584	4,960	79.8%	20.2%
2013	19,955	5,082	79.7%	20.3%
2014	20,188	6,057	76.9%	23.1%
2015	22,494	5,458	80.5%	19.5%
2016	23,969	5,301	81.9%	18.1%
2017	24,683	4,872	83.5%	16.5%
2018	26,089	4,587	85.0%	15.0%
2019	26,866	4,309	86.2%	13.8%

Compound Annual Growth Rate		
2000-2005	11.0%	-12.4%
2006-2010	1.4%	4.9%
2000-2019	5.2%	-1.5%
2009-2019	4.1%	-1.0%
2014-2019	5.9%	-6.6%

Economic and tourism growth in the New York CSA has increased origin-destination passenger demand to the New York CSA. Airlines have responded by shifting connecting traffic to other East Coast hubs (e.g. American moving some connecting traffic to Philadelphia). Origin-destination passengers represented 86.2% of JFK enplanements in 2019. While the origin-destination share has grown by six points since 2015, it has been at or close to the 80% - 85% range for most of the last 20 years.

<sup>42</sup> Source: U.S. DoT T100, U.S. DoT O&D Survey



In 2019, 19.2% of JFK's connecting passenger enplanements involved JetBlue or one of its partners connecting passengers with JetBlue<sup>43</sup>, which means a material share of JFK's connecting traffic used Terminal 5 and those airlines will have additional connecting opportunities in the new Terminal 6.

#### Primary Airlines Investing in JFK

The COVID-19 pandemic is not expected to produce a material change in the proportion of connecting passengers at JFK over the long term. As the three primary connecting airlines at JFK (JetBlue, Delta, and American) rebuild their capacity, none is showing indications that JFK's role is changing within their networks. All three airlines are making significant investments in the New York CSA. JetBlue is involved in Terminal 6 and is maintaining its headquarters in New York City. In April – October 2022 (summer schedule) 37.0% of all JetBlue flights are scheduled to depart or arrive at JFK, the largest capacity investment in the airline's route network. JetBlue and American are building the Northeast Alliance with a major strategic focus on JFK, while Delta continues its development of JFK Terminal 4.

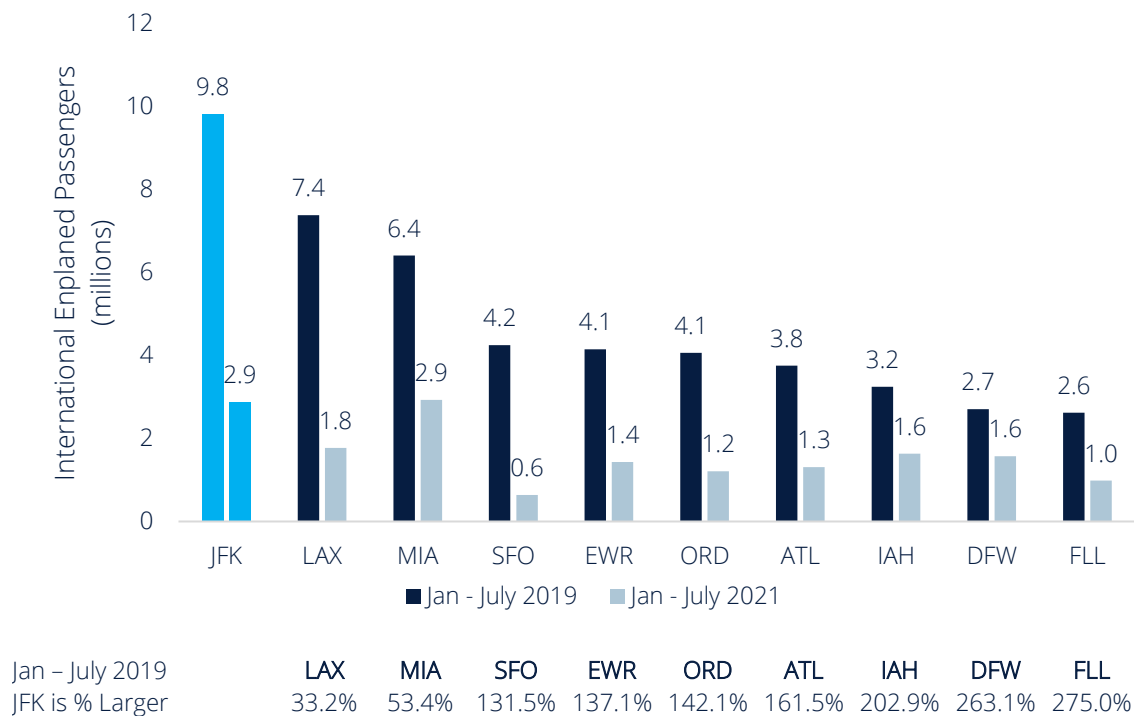
#### International Passenger Traffic

In January – July 2019, JFK was the largest international gateway in the U.S. with approximately 9.8 million international passenger enplanements. JFK generated 33.2% more international enplanements than the second largest international gateway, LAX. EWR was the fifth busiest international gateway in the U.S. with approximately 4.1 million international enplaned passengers. Figure 14 compares the enplaned international traffic from the 10 busiest international passenger airport gateways in the U.S.

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<sup>43</sup> Source: Sabre Market Intelligence. JetBlue partners include Aer Lingus, Emirates, Hawaiian, Icelandair, Qatar Airways, South African Airways. American is currently a partner but excluded here because the analysis pre-dates the Northeast Alliance.

Figure 14: January – July 2019 10 Busiest International Gateway U.S. Airports by International Enplaned Passengers<sup>44</sup>



JFK, LAX, and SFO have seen the largest decrease in international enplaned passengers between January - July 2019 and January – July 2021 due to strict COVID-19 travel restrictions and border closures in Europe (for JFK) and Asia (for LAX and SFO).

### Europe is Largest International Region From JFK

Europe is the largest regional destination for JFK international enplanements with 42.0% of international enplanements in January – July 2019 that is driven by the economic ties between the New York CSA and Europe, popularity of Europe and New York as leisure destinations for their respective residents, and JFK's geographic location as an efficient hub between other North American cities and Europe. The January – July 2021 figures remain low for European traffic because the U.S. border re-opened to Europeans in November 2021. Table 7 shows the volumes and share of international enplanements from JFK to world regions.

<sup>44</sup> Source: Bureau of Transportation Statistics

Table 7: 2019 World Destinations for JFK International Enplanements<sup>45</sup>

Region	Jan – July 2019		Jan – July 2021	
	Total (000)	Share	Total (000)	Share
Europe	4,316	42.0%	584	18.1%
Caribbean	2,161	21.0%	1,350	41.8%
Asia	1,106	10.8%	88	2.7%
Middle East	826	8.0%	353	10.9%
South America	640	6.2%	224	6.9%
Mexico	546	5.3%	296	9.2%
Africa	248	2.4%	143	4.4%
Central America	190	1.9%	161	5.0%
Canada	153	1.5%	0	0.0%
Oceania <sup>46</sup>	88	0.9%	30	0.9%
<b>Total</b>	<b>10,274</b>	<b>100.0%</b>	<b>3,230</b>	<b>100.0%</b>

The economic, cultural, political, and social connections between New York and Europe have remained strong throughout the many crises both regions have historically faced together, and the COVID-19 pandemic is not likely to change the dynamic. New York's familiarity and desirability as a destination for Europeans will influence travellers' decision making and therefore support JFK's traffic recovery.

Among the 10 busiest U.S. airports for international enplanements in January – July 2019, JFK had the most enplanements to Europe, the Middle East, and Africa. JFK had the second most enplanements to the Caribbean (~12,000 enplanements fewer than Miami) and South America. The Caribbean is largely a leisure destination, although the Caribbean ethnic communities in the New York CSA generate some passenger traffic (known as VFR – visiting friends and relatives). Asian passenger traffic includes business, leisure, and VFR components traveling in both directions.

<sup>45</sup> Source: U.S. DoT T100. Regions as defined by [airlinedata.com](http://airlinedata.com).

<sup>46</sup> Oceania includes Australia, New Zealand, and their Pacific islands



## JFK's Busiest International Markets

In 2019, the 20 busiest international passenger markets from JFK accounted for 52.1% of total international traffic, as shown in Table 8.

Table 8: International Origin-Destination Market Traffic and Airline Service<sup>47</sup>

Rank	Market	Origin-Destination Passengers (000)	% of International Origin-Destination Passengers	Air Miles from JFK	2019	
					Avg. Daily Scheduled Nonstop Departures	Number of Airlines Providing Nonstop Service
1	London <sup>a</sup>	1,540	9.9%	3,452	23	5
2	Paris <sup>b</sup>	784	5.0%	3,635	8	5
3	Mexico City	480	3.1%	2,090	10	5
4	Santiago (DR)	469	3.0%	1,470	9	2
5	Madrid	437	2.8%	3,590	5	5
6	Santo Domingo (DR)	431	2.8%	1,549	8	2
7	Milan <sup>c</sup>	373	2.4%	3,995	5	5
8	Amsterdam	358	2.3%	3,644	6	3
9	Seoul <sup>d</sup>	356	2.3%	6,906	3	2
10	Frankfurt	350	2.2%	3,855	4	3
11	Cancun	302	1.9%	1,555	6	4
12	Rome	288	1.8%	4,277	4	4
13	Dubai	283	1.8%	6,849	2	1
14	Tel Aviv	259	1.7%	5,677	3	2
15	Moscow <sup>e</sup>	242	1.6%	4,661	3	1
16	Tokyo <sup>f</sup>	241	1.5%	6,744	4	2
17	Istanbul	239	1.5%	4,999	3	1
18	Hong Kong	234	1.5%	8,070	3	1
19	Dublin	234	1.5%	3,180	3	2
20	Kingston	228	1.5%	1,573	5	4
<b>Top 20 Markets</b>		<b>8,126</b>	<b>52.1%</b>		<b>117</b>	
Other Markets		7,457	47.9%		361	
<b>Total International</b>		<b>15,583</b>			<b>478</b>	

a. London includes LCY, LGW, LHR, STN

b. Paris includes CDG, ORY

c. Milan includes MXP, LIN

d. Seoul includes GMP, ICN

e. Moscow includes DME, SVO

f. Tokyo includes HND, NRT

The two largest international markets, London and Paris together generated 2.3 million annual passengers or 14.9% of JFK's total international passenger traffic in 2019. All of JFK's top 20 international markets were served nonstop at that time. Eight of the 20 top markets were flown by at least four airlines, while four of the routes were served nonstop by a single carrier. The

<sup>47</sup> Source: Traffic – U.S. DoT O&D Survey for departing passengers, Capacity – airlinedata.com. Airline frequencies include regional affiliates.



large passenger traffic demand on most of these routes is driven by both business and leisure travel. Passengers are coming from both the U.S. and Europe, which provides a hedge against a decrease in demand in either market.

The 2019 top 20 international markets regained 27.6% of the origin-destination traffic during the first half of 2021 than they had in the first six months of 2019<sup>48</sup> due to the travel restrictions and border closures in some of JFK's largest international markets, especially Europe and Asia. Nonstop service in all top 20 2019 markets is restored from JFK during the summer 2022 schedule with an average of 114 daily departures, or 93.6% of the 121 average daily departures in the same markets during the summer 2019 schedule<sup>49</sup>, indicating a strong rebound of JFK international traffic demand in 2022.

### **Domestic Passenger Traffic**

In 2019 the 20 largest domestic passenger markets generated 76.6% of JFK's total domestic passengers, as shown in Table 9.

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<sup>48</sup> Source: U.S. DoT O&D Survey

<sup>49</sup> Source: Published schedules on [airlinedata.com](http://airlinedata.com) as of February 4, 2022. M

Table 9: Domestic Origin-Destination Market Traffic and Airline Service<sup>50</sup>

Rank	Market	Origin-Destination Passengers (000)	% of Domestic Origin-Destination Passengers	Air Miles from JFK	2019	
					Avg. Daily Scheduled Nonstop Departures	Number of Airlines Providing Nonstop Service
1	Los Angeles <sup>a</sup>	1,807	16.0%	2,475	40	4
2	San Francisco <sup>b</sup>	1,078	9.5%	2,586	24	4
3	Miami <sup>c</sup>	893	7.9%	1,090	21	3
4	Orlando	603	5.3%	944	13	3
5	Las Vegas	470	4.2%	2,248	10	3
6	San Juan	396	3.5%	1,597	8	2
7	Seattle	390	3.4%	2,421	9	4
8	Phoenix	319	2.8%	2,153	8	3
9	Atlanta	291	2.6%	760	10	2
10	San Diego	283	2.5%	2,446	6	3
11	Tampa	263	2.3%	1,005	7	2
12	Austin	260	2.3%	1,521	6	3
13	Salt Lake City	241	2.1%	1,990	7	2
14	West Palm Beach	236	2.1%	1,028	5	2
15	Charlotte	204	1.8%	541	11	3
16	Chicago <sup>d</sup>	198	1.7%	740	8	3
17	New Orleans	190	1.7%	1,182	5	2
18	Buffalo	189	1.7%	301	10	2
19	Denver	182	1.6%	1,626	4	2
20	Jacksonville	173	1.5%	829	6	2
<b>Top 20 Markets</b>		<b>8,667</b>	<b>76.6%</b>		<b>218</b>	
Other Markets		2,649	23.4%		135	
<b>Total Domestic</b>		<b>11,316</b>			<b>353</b>	

a. Los Angeles includes BUR, LAX, LGB, ONT, SNA

b. San Francisco includes OAK, SFO, SJC

c. Miami includes FLL, MIA

d. Chicago includes MDW, ORD

The Los Angeles and San Francisco CSAs are the largest, accounting for 16.0% and 9.5% of JFK's total domestic traffic respectively. Half of JFK's top 20 domestic markets are more than 1,500 miles away, which reflects a preference for JFK because nonstop flights from LGA are prohibited beyond that distance (with minor exceptions)<sup>51</sup>. Four of the remaining 10 largest markets are in Florida, a popular and frequent destination for many New Yorkers. All of JFK's top 20 domestic service averaged at least four daily departures in 2019 and were served by at least two airlines.

<sup>50</sup> Source: Traffic – U.S. DoT O&D Survey, Capacity – airteldata.com. Airline frequencies include regional affiliates. Qantas LAX-JFK flight is excluded from the frequency because the airline does not have local traffic rights on the route.

<sup>51</sup> Known as the Perimeter Rule



### 2021 Domestic Traffic Recovery

In the first half of 2021, passenger traffic in JFK's 2019 top 20 origin-destination markets recovered to 49.8% of the levels seen in the first half of 2019.

All 20 markets continued to have nonstop service with the summer 2022 schedule shows an average of 251 daily departures in the same markets compared to 261 average daily departures in summer 2019, or 94.7% of the summer 2019 frequency and 100.5% of the summer 2019 seats.<sup>52</sup>. Not only does the restoration of these flights represent a strong domestic recovery for JFK, but also shows confidence in international passenger demand returning as airlines would expect some of the passengers on the domestic flights to be connecting to international destinations from JFK.

### Global Passenger Traffic Recovery

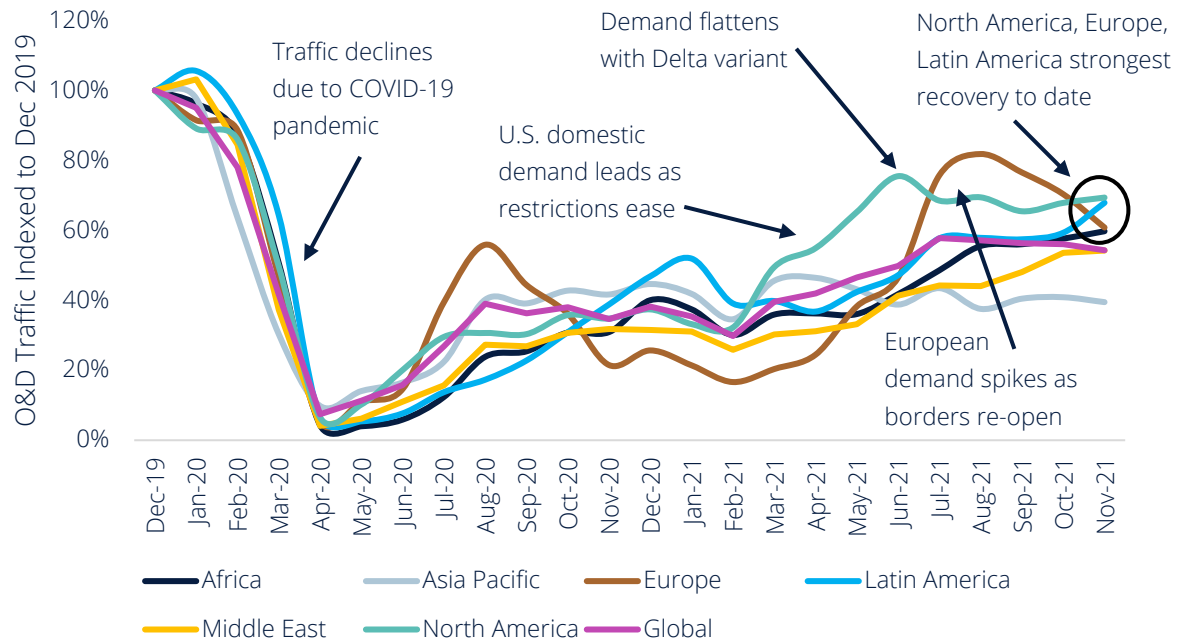
JFK's largest passenger traffic market, North America, is the global region whose passenger traffic has recovered the most. In November 2021, North American origin-destination traffic reached 69.4% of December 2019 levels. Europe and Latin America are the other two global regions with the strongest traffic recovery in November 2021 as shown in Figure 15 and are also regions exhibiting the strongest post-pandemic traffic recovery at 60.8% and 67.9% of December 2019 passenger traffic respectively. Those two regions combined with North America indicate a strong recovery for 75.9% of JFK's 2019 passenger enplanements.

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<sup>52</sup> Published schedules on [airlinedata.com](http://airlinedata.com) as of February 4, 2022



Figure 15: Global Region Passenger Traffic (Indexed to December 2019)<sup>53</sup>



**Nov 2021 Region Origin-Destination Traffic vs Dec 2019**

Region	
North America	69.4%
Latin America	67.9%
Europe	60.8%
Africa	59.7%
Global Total	54.3%
Middle East	54.2%
Asia Pacific	39.5%

In the U.S. at the end of December 2021 passenger volumes were edging close to 2019 levels at 81.8% with domestic and Mexico based traffic being the driving forces, as shown in Figure 16 and Figure 17. North America has been the global region whose passenger traffic has been impacted the least by the COVID-19 pandemic, thus demonstrating its resilience.

<sup>53</sup> Source: Sabre Market Intelligence

Figure 16: U.S. Passenger Checkpoint Throughput (7-Day Rolling Average)<sup>54</sup>

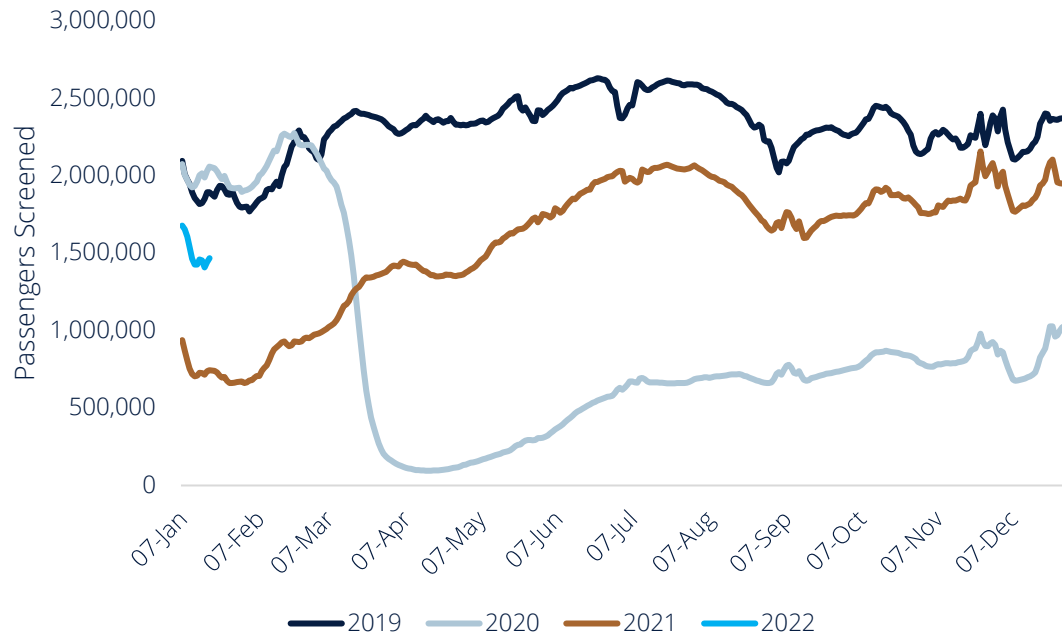
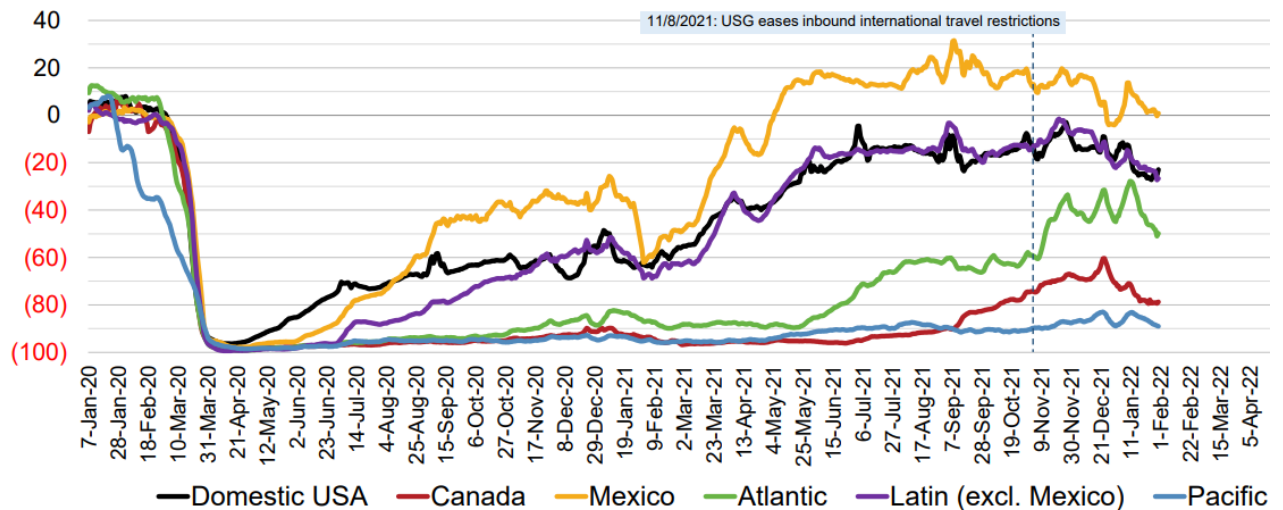


Figure 17: 7-Day Rolling Change (%) vs Pre-Pandemic in Onboard Passengers<sup>55</sup>



<sup>54</sup> Source: U.S. Transportation Security Administration

<sup>55</sup> Source: Airlines for America (Includes Alaska, American, Delta, Hawaiian, JetBlue, Southwest, United and branded codeshare partners)

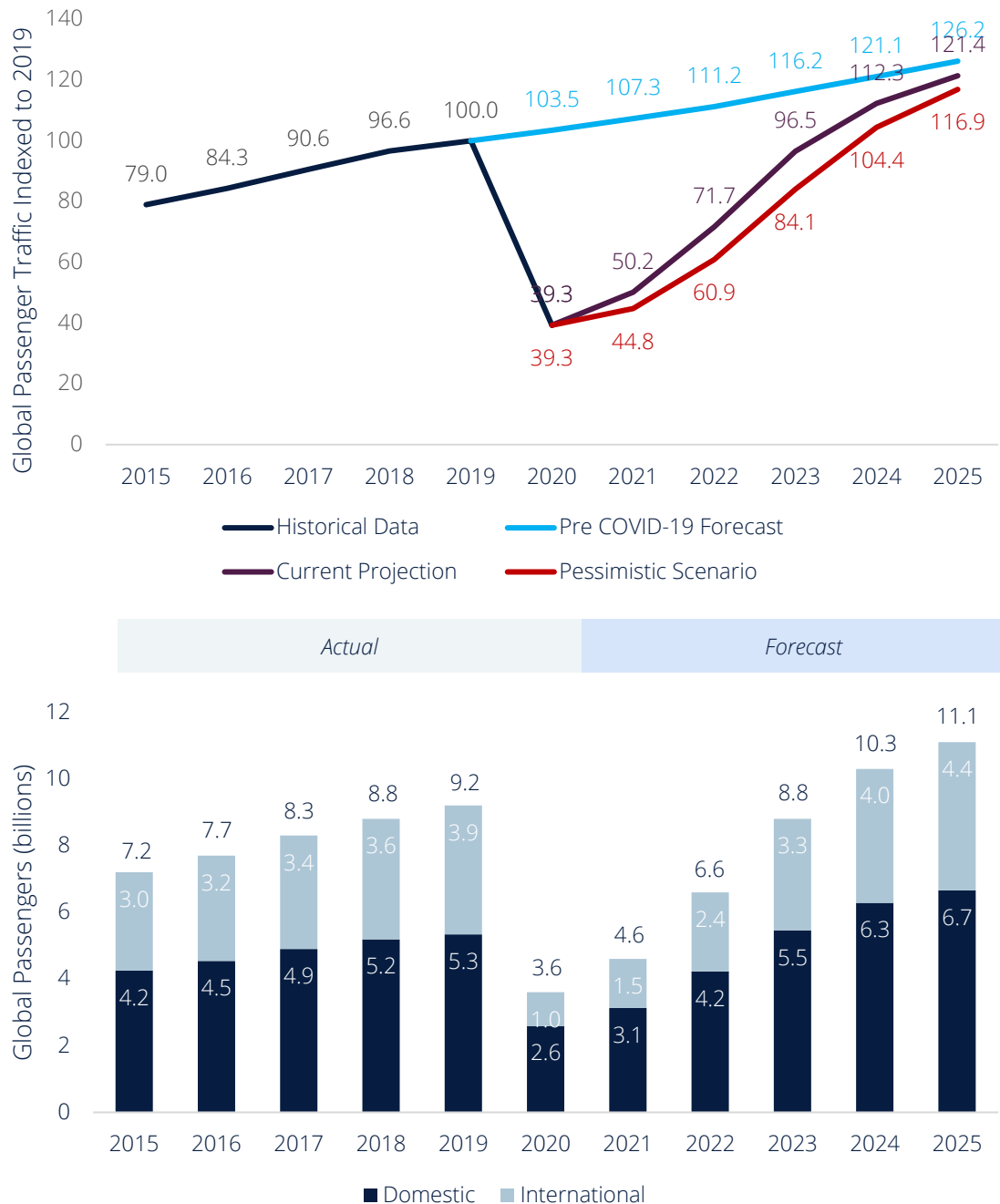


The visible uptick in transatlantic travel is representative of pent-up demand that markets have experienced when border restrictions have been relaxed and markets re-opened.

Elsewhere, China domestic passenger volumes have consistently been above 2019 levels, however their tight border restrictions have curtailed international traffic recovering. The implications of this are widely felt across the Asia Pacific region. China is expected to open its markets later in 2022, with the re-opening process being more cautious than those in the Americas, Europe, and the Gulf.

The consensus of industry forecasts is that global passenger traffic will recover to 2019 levels in 2024, with domestic travel achieving and indeed exceeding these levels in 2023, as shown in Figure 18.

Figure 18: Global Passenger Traffic Forecasts<sup>56</sup>



<sup>56</sup> Source Airports Council International World Forecasts

## 6. Airline Service Trends

### Key Takeaways

1. JFK has a diverse carrier base without a single dominating airline, yet three strong based airlines (Delta, JetBlue, American)
2. 61 of 73 airlines operating at JFK in December 2019 are returning in February 2022
3. JFK's summer 2022 schedule includes 97.6% of the seat capacity of summer 2019, including 109.6% of domestic seats and 88.8% of international seats, clearly indicating airline anticipation of returning passenger volumes
4. Strong recovery of international routes with 111 nonstop international routes scheduled from JFK in summer 2022, compared with 123 in the summer 2019 schedule
5. JetBlue and American are growing their departures and number of nonstop routes from JFK in support of their Northeast Alliance

This section covers JFK's airline service, including market composition and share, schedules and capacity, and airline partnerships. JFK is served by a multitude of international airlines as the New York CSA is a strategically and geographically vital component of any airline's North American route network.

### Airlines Serving JFK

A total of 73 passenger airlines served JFK as of December 2019 with 61 airlines having scheduled service in February 2022. Table 10 shows the regional distribution where JFK's airlines are based with the full list shown in Table 11. Five airlines are new entrants at JFK since December 2019<sup>57</sup>.

**Table 10: Regional Distribution of JFK Scheduled Passenger Airlines<sup>58</sup>**

Region of Airline Base	Number of Scheduled Airlines Serving JFK	
	December 2019	February 2022
Europe	23	20
Asia-Pacific <sup>a</sup>	18	10
Middle East	7	7
U.S. (Network & Low Cost)	5	7
U.S. (Regional)	5	3
Africa	5	4
Latin America	4	4
Mexico	3	3
Caribbean	2	2
Canada	1	1
<b>Total</b>	<b>73</b>	<b>61</b>

a. Asia-Pacific includes Australian airlines

<sup>57</sup> New entrant airlines at JFK are Azores Airlines, Eastern Airlines, Neos Air, United Airlines, and VivaAerobus.

<sup>58</sup> Source: Published schedules on [airlinedata.com](http://airlinedata.com).

Table 11: JFK Scheduled Passenger Airlines (December 2019 and February 2022)<sup>59</sup>

U.S. Flag Airlines	Foreign Flag Airlines		
<b>Network &amp; Low Cost</b>	<b>Europe</b>	<b>Asia Pacific</b>	<b>Middle East</b>
Alaska Airlines	Aer Lingus	Air China	El Al
American Airlines	Aeroflot	Air India	Emirates
Delta Air Lines	Air Europa	All Nippon Airways (ANA)	Etihad
Eastern	Air France	Asiana	Kuwait Airways
Hawaiian Airlines	Air Serbia	Azerbaijan Airlines	Qatar Airways
JetBlue Airways	Air Italy	Cathay Pacific	Royal Jordanian
United	Alitalia (ITA)	China Airlines	Saudi Arabian Airlines
	Austrian Airlines	China Eastern	
<b>Regional</b>	British Airways <sup>b</sup>	China Southern	<b>Africa</b>
Cape Air	Brussels Airlines	EVA Airways	Egyptair
Endeavor <sup>a</sup>	Finnair	Hainan Airlines	Ethiopian Airlines
Envoy <sup>a</sup>	Iberia	Japan Airlines	Kenya Airways
Republic Airways <sup>a</sup>	Icelandair	Korean Air	Royal Air Maroc
SkyWest <sup>a</sup>	KLM	Philippine Airlines	South African Airways
	LOT Polish	Qantas	
<b>Canada</b>	Lufthansa	Singapore Airlines	<b>Latin America</b>
WestJet	Neos	Uzbekistan Airways	Aerolineas Argentinas
	Norwegian <sup>c</sup>	Xiamen Airlines	Avianca <sup>e</sup>
	OpenSkies		Copa
	Swiss	<b>Mexico</b>	LATAM <sup>f</sup>
	TAP Portugal	Aeromexico <sup>d</sup>	
	Turkish Airlines	Interjet	<b>Caribbean</b>
	Ukraine International	Volaris	Caribbean Airlines
	Virgin Atlantic	VivaAerobus	Cayman Airways

December 2019 only

December 2019 & February 2022

February 2022 only (new since December 2019)

- Envoy Air flies for American Airlines. Endeavor and SkyWest fly for Delta Air Lines. Republic Airways flies for American Airlines and Delta Air Lines and is counted once.
- British Airways includes both British Airways and Iberiajet.
- Norwegian includes both Norwegian Air Shuttle and Norwegian Air UK.
- Aeromexico includes both Aeromexico and Aerolitoral.
- Avianca includes Avianca, Avianca Costa Rica, Avianca Brasil and Taca.
- LATAM includes LATAM, LATAM Brasil and LATAM Ecuador

The airlines that have not yet returned service to JFK are likely to do so, most notably the Chinese and Australian airlines still facing very strict international travel restrictions<sup>60</sup>. Several carriers have either ceased operation<sup>61</sup> or are no longer serving longhaul markets<sup>62</sup>.

<sup>59</sup> Source: Published schedules on [airlinedata.com](http://airlinedata.com). See notes with Table 6 for airline combinations.

<sup>60</sup> Airlines that have not yet returned are Air China, China Southern, Hainan, and Qantas

<sup>61</sup> Airlines ceasing operation are Air Italy and Interjet

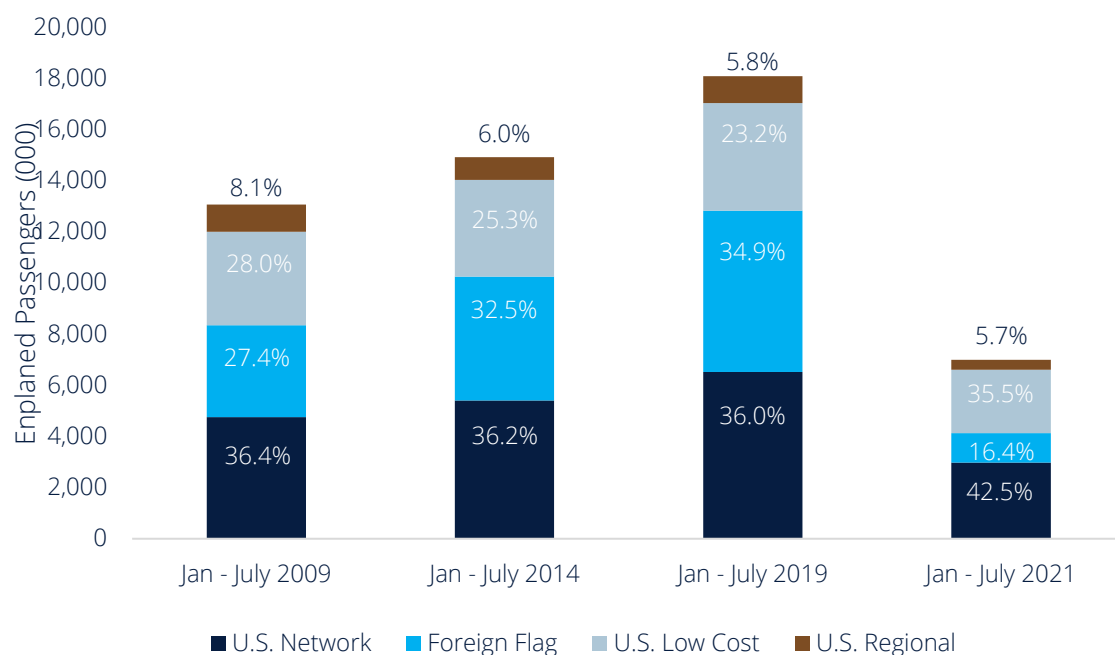
<sup>62</sup> Airlines no longer operating longhaul service are Norwegian and Level

The number of U.S. regional airlines is lower in 2022 than 2019 because Delta and American have reduced the number of regional carriers who are contracted to operate on their behalf at JFK. However, the remaining regional airlines can still operate the same total capacity in 2022 that operated before the COVID-19 pandemic, so a reduction in the number of airlines does not necessarily mean that Delta's or American's 2022 total capacity at JFK will be lower than before the COVID-19 pandemic.

### Airline Market Shares

JFK has a diverse carrier base that is not dominated by a single airline. U.S. network airlines accounted for the largest share of JFK passenger enplanements in 2019, as shown in Figure 19. In January – July 2019, U.S. network and regional carriers combined represented 41.8% of JFK enplanements while foreign-flag and U.S. low-cost airlines accounted for 34.9% and 23.2% respectively.

Figure 19: JFK Historical Enplaned Passengers by Airline Type<sup>63</sup>



Between January – July 2009 and the same months in 2019, U.S. network carriers grew their enplanements by 37.0% while the enplanements carried by their regional affiliates has remained steady at 1.1 million passengers. Although the share of U.S. low-cost airline enplanements at JFK declined between January and June 2009 and the same months in 2019, the total number of passengers carried by those airlines increased by 14.6%. Some of the changes that occurred during the 2010s is due to a wave of industry consolidation in the U.S., including the acquisition of Virgin America by Alaska Airlines. In January – July 2021, the share of enplanements carried by U.S. low-cost carriers increased to 35.5%.

<sup>63</sup> Source: U.S. DoT T100. Scheduled airlines only.



Delta and JetBlue accounted for approximately half of JFK's enplaned passengers in January – July 2019, with American Airlines having a 10.4% enplanement share during the same period. Table 12 compares enplaned passengers by airline between January and July of 2014 and the same months in 2019 and 2021.

**Table 12: JFK Historical Enplaned Passengers (Jan – July)<sup>64</sup>**

	Enplaned Passengers (000)			Percent of JFK Total		
	2014	2019	2021	2014	2019	2021
<b>U.S. Flag Airlines</b>						
<b>Network &amp; Regional</b>						
Delta	3,672	5,234	2,355	24.6%	28.9%	33.6%
American	1,921	1,881	842	12.9%	10.4%	12.0%
Alaska	-	414	81	0.0%	2.3%	1.2%
Hawaiian	46	50	30	0.3%	0.3%	0.4%
Other Network & Regional	20	1	17	0.1%	0.0%	0.2%
United	376	-	46	2.5%	0.0%	0.7%
US Airways	270	-	-	1.8%	0%	0%
Subtotal-Network & Regional	6,305	7,579	3,371	42.2%	41.9%	48.1%
<b>Low Cost</b>						
JetBlue	3,467	4,202	2,485	23.2%	23.2%	35.5%
Sun Country	35	2	0	0.2%	0.0%	0.0%
Virgin America <sup>a</sup>	278	-	-	1.9%	0.0%	0.0%
Subtotal-Low Cost	3,780	4,204	2,485	25.3%	23.2%	35.5%
<b>Total-U.S. Flag Airlines</b>	<b>10,085</b>	<b>11,783</b>	<b>5,856</b>	<b>67.5%</b>	<b>65.1%</b>	<b>83.6%</b>
<b>Foreign Flag Airlines</b>						
Norwegian <sup>b</sup>	51	444	-	0.3%	2.5%	0.0%
British Airways	374	386	30	2.5%	2.1%	0.4%
Virgin Atlantic	180	331	9	1.2%	1.8%	0.1%
Air France	257	322	69	1.7%	1.8%	1.0%
Emirates	222	256	82	1.5%	1.4%	1.2%
Avianca	140	237	74	0.9%	1.3%	1.0%
LATAM	269	209	33	1.8%	1.2%	0.5%
Lufthansa	156	180	21	1.0%	1.0%	0.3%
ITA (Alitalia)	146	175	27	1.0%	1.0%	0.4%
Cathay Pacific	200	175	4	1.3%	1.0%	0.1%
Other Foreign Flag	2,852	3,605	803	19.1%	19.9%	11.5%
<b>Total-Foreign Flag</b>	<b>4,848</b>	<b>6,321</b>	<b>1,152</b>	<b>32.5%</b>	<b>34.9%</b>	<b>16.4%</b>
<b>JFK Total</b>	<b>14,933</b>	<b>18,104</b>	<b>7,008</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

a. Virgin America was acquired by Alaska Airlines, and is included in Alaska's 2019 figures

b. Norwegian no longer operates transatlantic services

<sup>64</sup> Source: U.S. DoT T100. U.S. network carriers include regional affiliates.

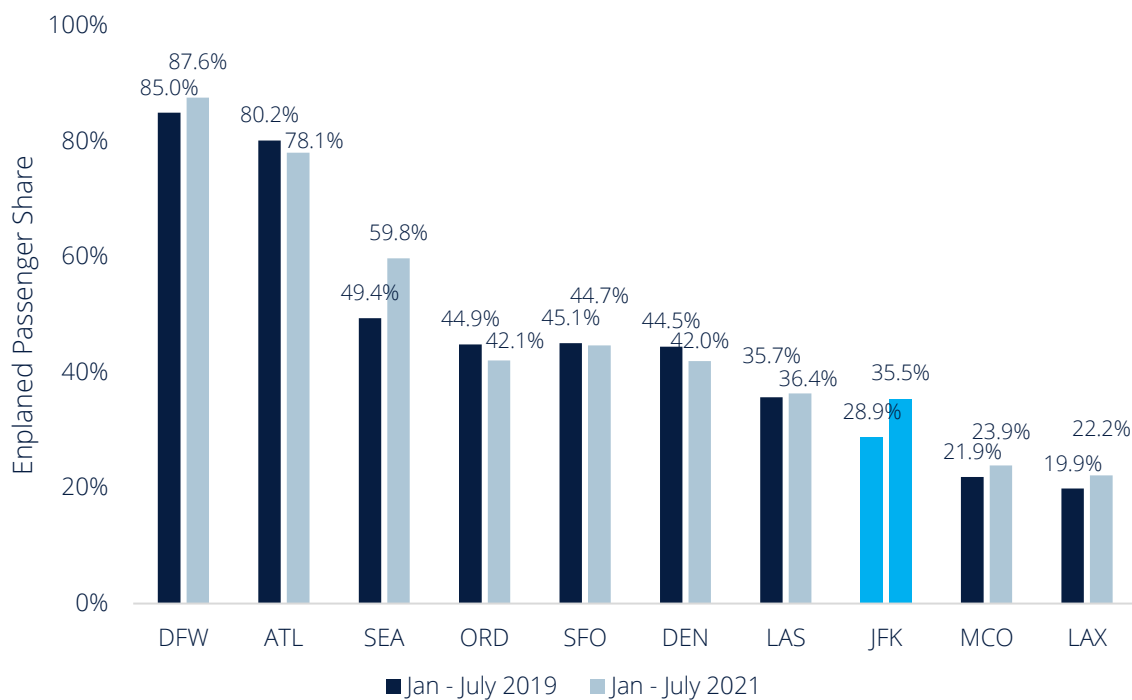


The largest four foreign flag airlines in 2019 (Norwegian, British Airways, Virgin Atlantic, and Air France) had JFK enplanement shares of approximately 2.0% in January - July 2019. Norwegian moved from a small airline at JFK in 2014 to its busiest foreign flag airline in 2019, although it is no longer operating transatlantic routes.

### JFK Not Dependent on Single Carrier

The enplaned passenger share carried by JFK's busiest airline, Delta, was lower at JFK in January - July 2019 than the share held by the largest carrier at most of the other 10 busiest U.S. airports, as shown in Figure 20, further illustrating the lack of JFK's reliance on a single carrier for its existing or future passenger traffic.

Figure 20: Share of Passengers Carried by Largest Airlines at Busiest 10 U.S. Airports<sup>65</sup>



		Airport's Largest Airline								
2019	American	Delta	Alaska	United	United	United	Southwest	Delta	Southwest	American
2021	American	Delta	Alaska	United	United	United	Southwest	JetBlue	Southwest	Delta

Although Delta's passenger share at JFK has increased between the first seven months of 2019 and 2021, the effect is temporary until more international service returns. Meanwhile, JFK's share carried by its largest airline is still lower than most of the other 10 busiest U.S. airports, thereby demonstrating the ongoing diversity of JFK's carrier base.

<sup>65</sup> Source: U.S. DoT T100. Includes regional airline affiliates.



## Airline Alliances and Partnerships

JFK's largest domestic airlines, JetBlue, Delta, and American, have partnerships with some of JFK's other airlines that create opportunities to connect passengers between them. Carrying additional passengers for connections can enable airlines to increase their capacity, and thereby further grow passenger traffic. Some of JFK's airlines connect with other airlines through membership in one of the three multi-carrier alliances (Star, Oneworld, and Skyteam). The physical link between Terminal 6 and Terminal 5 creates an opportunity for Terminal 6 airlines to connect with JetBlue.

A comparison of the enplaned market shares of JFK's major domestic airlines by individual airline and by airline alliance is shown in Table 13.

**Table 13: Comparison of JFK Enplanement Market Share<sup>66</sup>**

January – July 2019					
	Airline (and regional affiliates)		Airline, regional affiliate, and alliance partners		
	Enplaned Passengers (000)	Share	Alliance Name	Enplaned Passengers (000)	Share
Delta Air Lines	5,234	28.9%	Skyteam	6,621	36.6%
American Airlines	1,881	10.4%	Oneworld	3,336	18.4%
JetBlue	4,202	23.2%	Star Alliance	1,519	8.4%
Subtotal	11,317	62.5%		11,476	63.4%
All Other Airlines	6,787	37.5%		6,628	36.6%
<b>Total</b>	<b>18,104</b>	<b>100.0%</b>		<b>18,104</b>	<b>100.0%</b>

January – July 2021					
	Airline (and regional affiliates)		Airline, regional affiliate, and alliance partners		
	Enplaned Passengers (000)	Share	Alliance Name	Enplaned Passengers (000)	Share
Delta Air Lines	2,355	33.6%	Skyteam	2,632	37.6%
American Airlines	842	12.0%	Oneworld	1,111	15.9%
JetBlue	2,485	35.5%	Star Alliance	444	6.3%
Subtotal	5,681	81.1%		4,187	59.8%
All Other Airlines	1,326	18.9%		2,821	40.2%
<b>Total</b>	<b>7,008</b>	<b>100.0%</b>		<b>7,008</b>	<b>100.0%</b>

<sup>66</sup> Source: Traffic – U.S. DoT T100. Airline Alliances – alliance websites (membership as of December 3, 2021 used for analysis)

Among the major alliances, Oneworld will be recovering the most JFK seat capacity during the February – April 2022 timeframe, growing its departing seats by 6.0% from the same period in 2019. Skyteam has scheduled 85.4% of its 2019 seats over the next three months and Star Alliance has scheduled 84.6% of its 2019 seats over the same period.<sup>67</sup> Connections to the rapidly recovering domestic market are influencing Delta's and American's partners to restore and grow their JFK capacity. Part of Star Alliance's capacity change comes from the re-launch of United service at JFK in March 2022.<sup>68</sup>

While there are a multitude of airline partnerships present at JFK, the carriers are spread among different terminals. Unlike some other major gateway airports around the world, JFK's airlines are not necessarily co-located or in close proximity based on their alliance membership or other partnership. Terminal 6 offers a potential for partner carriers to co-locate there, as well as offering the opportunity to directly connect in Terminal 5 with JetBlue, one of JFK's primary airlines. Terminal 6 is not affiliated with one of the major airline alliances and JetBlue has been open to partnering with alliance and non-aligned airlines, so Terminal 6 can be home to a wide range of JFK's airlines with different types of partnership arrangements and strategies.

### JetBlue Partnerships

JetBlue, while not a member of the three major alliances, does have partnerships with several other airlines. Some of those partners are also members of an alliance while others are independent. JetBlue and its partners carried 6.7 million passengers January - July 2019 and 3.5 million during the same months in 2021. Table 14 shows the enplanements of JetBlue and its partners.

**Table 14: JFK Enplanements by JetBlue and its Partners (000)<sup>69</sup>**

Airline	Jan – July 2019	Jan – July 2021
JetBlue Airways	4,202	2,485
American Airlines	1,881	842
Emirates	256	82
Aer Lingus	135	14
Qatar Airways	109	63
Icelandair	51	12
South African Airways	50	0
Hawaiian Airlines	49	30
<b>Total</b>	<b>6,733</b>	<b>3,528</b>

The combination of JetBlue and its partner carriers have scheduled 114.1% more departing seats during February – April 2022 than the same period in 2019. JetBlue, Aer Lingus, American, and Qatar Airways have scheduled more seats than 2019, with Emirates at 96.7% and Icelandair

<sup>67</sup> Source: Published schedules on [airlinedata.com](http://airlinedata.com)

<sup>68</sup> United is returning to JFK in March 2022, its first flights there since October 2015. United has a hub at EWR, so the resumption of flights at JFK demonstrates its strategic importance for airlines to serve the New York CSA. Source: [airlinedata.com](http://airlinedata.com)

<sup>69</sup> Source: Traffic – U.S. DoT T100. JetBlue Partners – airline website (membership as of December 3, 2021 used for analysis)



at 97.7% of February – April 2019. The size and desirability of the New York market, as well as the ability to connect to JetBlue are part of JetBlue’s partners’ decision to quickly restore capacity back to JFK.

### Northeast Alliance

The most significant change currently happening in JFK’s airline passenger traffic and capacity share stems from the Northeast Alliance, a partnership between JetBlue and American first announced in July 2020. The two airlines are codesharing on some of their New York routes, with both carriers growing and adjusting their New York CSA route networks to increase connectivity and benefit from each other’s strategic market strengths. As a result, both carriers serve more markets, carry more passengers, and generate more revenue than each could on its own. The Northeast Alliance has been a major contributing factor to both airlines growing their presence at JFK. Table 15 shows the change in nonstop routes and departures for each carrier between February – April 2019 and the same period in 2022.

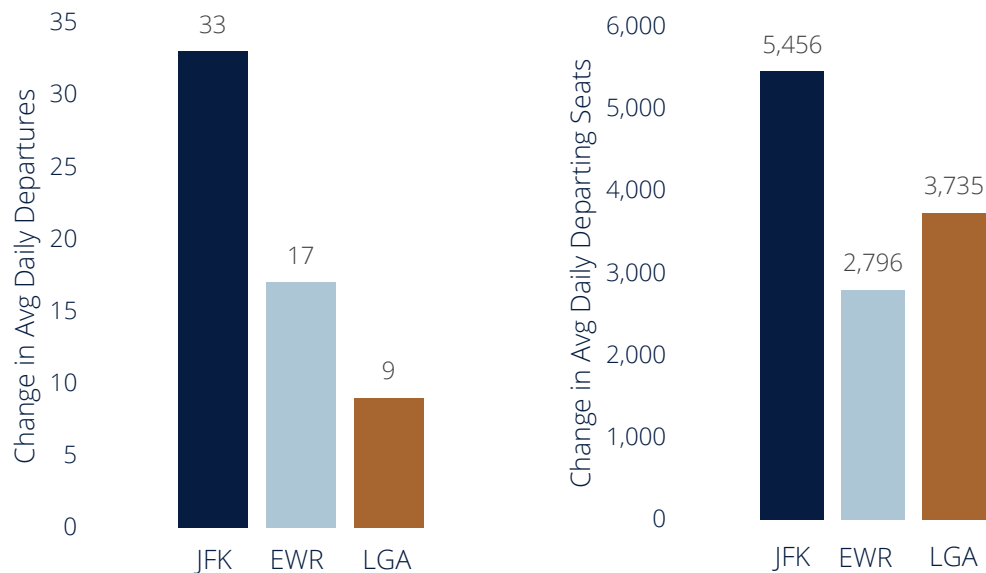
**Table 15: Northeast Alliance Airline Growth at JFK (February - April of Each Year)<sup>70</sup>**

	Average Daily JFK Departures			Nonstop JFK Routes		
	2019	2022	Change	2019	2022	Change
JetBlue	151	173	14.6%	68	84	23.5%
American	89	100	12.3%	43	54	25.6%
<b>Combined</b>	<b>240</b>	<b>273</b>	<b>13.7%</b>	<b>94</b>	<b>111</b>	<b>18.1%</b>

Between February – April 2019 and February – April 2022, JetBlue increased its departing seats from JFK by 11.6% while American increased its departing seats by 21.9%, for a combined increase of 15.0%. While the two carriers have similarly grown at LGA and EWR, the level of capacity investment is highest at JFK as shown in Figure 21.

<sup>70</sup> Source: Published schedules in [airlinedata.com](http://airlinedata.com) as of January 6, 2022. American Airline figures include regional affiliates. Combined nonstop routes shows number of routes served by at least one of the carriers in the respective timeframe.

Figure 21: Capacity Growth by Northeast Alliance at Major New York Airports February - April 2019 vs February - April 2022<sup>71</sup>



### Airline Joint Ventures

Three groups of airlines at JFK operate transatlantic services as part of joint ventures. These partnerships enable the airlines in each group to share the revenues and costs of their flights as well as collectively plan the routes, capacities, and fares. The airlines codeshare with the others in their group, which enables them to sell across each other's distribution channels. Table 16 shows the composition of the joint venture groups.

Table 16: Airline Transatlantic Joint Venture Groupings

Joint Venture Airlines	Alliance Affiliation
Aer Lingus	Oneworld
American	
British Airways	
Finnair	
Iberia	
Air France	Skyteam
Delta	
KLM	
Virgin Atlantic	
Air Canada	Star Alliance
Lufthansa	
United	

<sup>71</sup> Source: Published schedules in [airlinedata.com](http://airlinedata.com) as of January 6, 2022. American Airline figures include regional affiliates. Combined nonstop routes shows number of routes served by at least one of the carriers in the respective timeframe.



In 2019, the three joint venture groups collectively generated 66.6% of JFK's enplaned passengers to Europe. The Skyteam group held the largest share at 37.6% while the Oneworld group had a 24.9% share and Star Alliance a 4.1% share, as shown in Table 17<sup>72</sup>.

**Table 17: 2019 Transatlantic Joint Venture Enplaned Passengers from JFK to Europe<sup>73</sup>**

Joint Venture Alliance Group	Enplaned Passengers (000)	Share of JFK – Europe Enplanements
Skyteam <sup>a</sup>	2,896	37.6%
Oneworld <sup>b</sup>	1,915	24.9%
Star <sup>c</sup>	317	4.1%
Not in Joint Venture	2,574	33.4%
<b>Total</b>	<b>7,703</b>	<b>100.0%</b>

a. Includes Virgin Atlantic to best compare with current airline alignment. The airline entered the joint venture in February 2020

b. Includes Aer Lingus to best compare with current airline alignment. The airline entered the joint venture in December 2020.

c. Star share is lowest as Lufthansa was only one of three joint venture airlines serving JFK at the time.

While the three groups are organized around the three major airline alliances, not all of the alliance members belong to the joint ventures. The joint ventures have therefore created a new partnership tier that supersedes the alliances themselves, which itself has potential implications for how strongly the alliances hold together in the future. On the other hand, joint venture members can use the alliance's infrastructure for the joint venture which limits the investment required to operate the partnership.

### Joint Ventures Beyond Transatlantic

While airline joint ventures are most fully developed across the Atlantic, joint venture partnerships have emerged in other regions. They too are mostly centered around the three major airline alliances, although not involving all alliance members. For example, Delta has a transpacific joint venture with fellow Skyteam member Korean Air, and Star Alliance partners United and ANA as well as Oneworld members American and Japan Airlines have similar partnerships. In the Americas, Delta and Aeromexico are joint venture partners while Delta and LATAM have applied for a joint venture partnership that is currently in the approval process.

### Joint Venture Members Share Financial Risks and Rewards

Sharing costs and revenues spreads the risk across each joint venture's members and creates an incentive for all to work toward the success of each route and flight. The arrangement has encouraged member airlines to expand to new, untapped routes such as Lufthansa's entry into the Frankfurt – St. Louis market (aided by a large financial incentive from the St. Louis

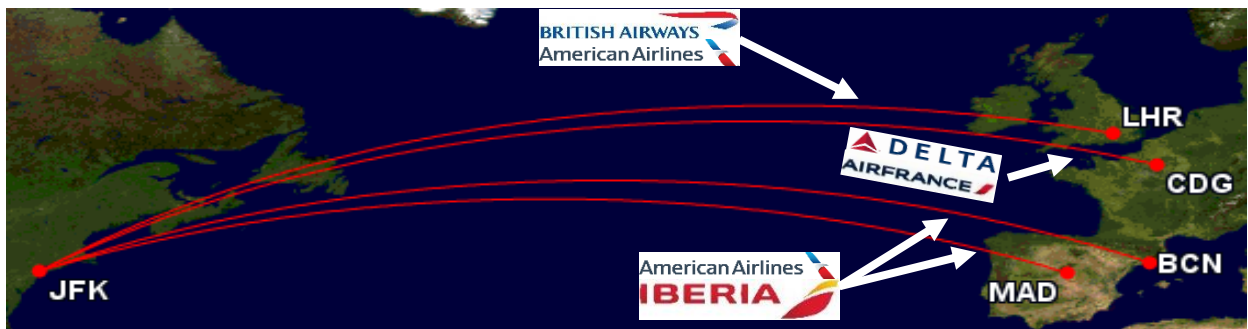
<sup>72</sup> Source: U.S. DoT T100. Aer Lingus is included in Oneworld figures and Virgin Atlantic is included in Skyteam figures despite their not having been part of their respective joint ventures in 2019. They have since joined, so their figures are added to best equate the situation in 2019 to current circumstances.

<sup>73</sup> Source: U.S. DoT T100 from [airlinedata.com](http://airlinedata.com)

community) and Virgin Atlantic launching London – Austin flights. From an airline planning perspective, the joint venture increases the number of options by enabling a route to be served by the airline with the optimal revenues and costs as well as the available capacity.

A large and important market like New York is likely to benefit from the joint ventures. Member airlines serve their large, core markets from JFK with valuable slot assets, which discourages capacity (particularly frequency) consolidation. Markets an airline might not have been able to grow on its own can potentially increase its traffic by utilizing the capacity of another joint venture member. In 2019, four European markets (Barcelona, Paris, London, and Madrid) were served nonstop from JFK by two carriers within their respective joint ventures, as shown in Figure 22.

Figure 22: JFK - Europe Markets Served by Multiple Joint Venture Carriers in 2019<sup>74</sup>



### Scheduled Airline Capacity and Routes

During the summer 2019 season (April – October 2019), scheduled nonstop service was offered to 191 destinations from JFK, including 64 domestic and 127 international airports. An average of 607 daily departures were scheduled, including 346 domestic and 261 international departures. Table 18 shows the distribution of JFK's departures by global destination region during the summer 2019 season.

<sup>74</sup> Source: [airlinedata.com](http://airlinedata.com)

Table 18: Summer 2019 JFK Scheduled Nonstop Capacity (Departing)<sup>75</sup>

Region	Average Daily Seats	Share of JFK Seats	Average Daily Departures	Share of JFK Departures
Domestic	45,959	42.4%	346	56.9%
Europe	27,933	25.8%	97	16.0%
Caribbean	12,727	11.7%	72	11.8%
Asia	6,535	6.0%	21	3.5%
Middle East	5,136	4.7%	15	2.5%
South America	3,501	3.2%	15	2.5%
Mexico	2,886	2.7%	17	2.8%
Africa	1,621	1.5%	6	1.0%
Canada	1,087	1.0%	12	2.0%
Central America	1,026	0.9%	7	1.2%
International	62,452	57.6%	262	43.1%
<b>Total</b>	<b>108,411</b>	<b>100.0%</b>	<b>608</b>	<b>100.0%</b>

While most of JFK's scheduled departures were flying to domestic destinations, because smaller aircraft are typically flown within the U.S., only 42.4% of JFK's departing seats flew domestically. Approximately 57.6% of JFK's departing seats were scheduled to be flown to international destinations.

### Summer 2022 JFK Flight Schedule

JFK airlines are planning a summer 2022 schedule with almost the same number of average daily departing seats and flights as the summer of 2019.<sup>76</sup> Some regional differentiation exists based on current travel restrictions or requirements still in place (e.g. testing, quarantine). Domestic seat capacity is planned at 9.6% higher than summer 2019, while international seat capacity is 11.2% lower than summer 2019. Table 19 compares the summer 2019 and the summer 2022 schedule as currently published.

<sup>75</sup> Source: [airlinedata.com](http://airlinedata.com)

<sup>76</sup> Summer Season is April – October





Table 19: JFK Summer 2022 Schedule Compared to Summer 2019 Schedule<sup>77</sup>

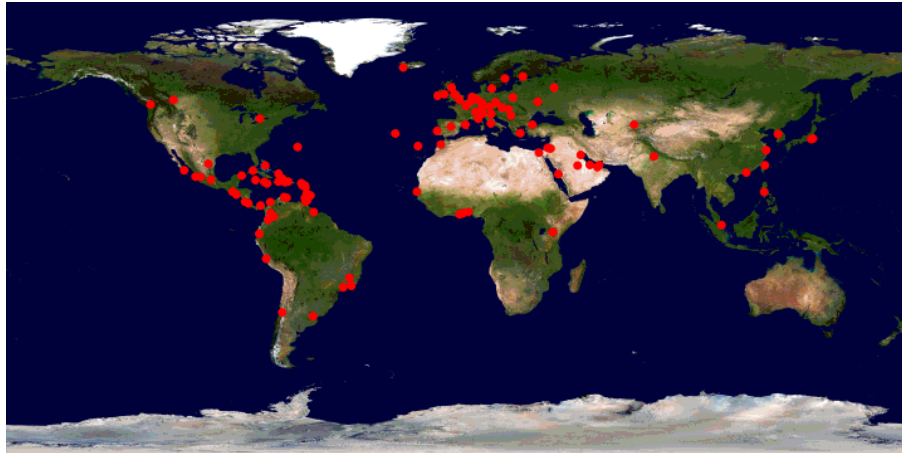
Region	Average Daily Seats			Average Daily Departures		
	2019	2022	2022 as % of 2019	2019	2022	2022 as % of 2019
Domestic	45,959	50,373	109.6%	346	364	105.3%
Europe	27,933	24,110	86.3%	97	88	90.9%
Caribbean	12,727	10,477	82.3%	72	61	84.3%
Asia	6,535	4,625	70.8%	21	16	77.9%
Middle East	5,136	5,156	100.4%	15	16	104.6%
South America	3,501	4,802	137.2%	15	23	154.2%
Mexico	2,886	2,307	80.0%	17	13	78.9%
Africa	1,621	1,471	90.8%	6	5	90.3%
Canada	1,087	484	44.6%	12	4	34.4%
Central America	1,026	2,041	198.9%	7	13	186.6%
International	62,452	55,474	88.8%	262	240	91.6%
<b>Total</b>	<b>108,411</b>	<b>105,847</b>	<b>97.6%</b>	<b>608</b>	<b>604</b>	<b>99.4%</b>

Based on scheduling patterns throughout the COVID-19 pandemic, the summer 2022 capacity currently published is likely higher than the capacity that will operate. Airlines put as much capacity as possible out for sale to enable as much revenue generation as they can. As demand patterns emerge, they cut back capacity in weaker markets to protect route network profitability. How much capacity is eventually pulled from the schedule will depend on how COVID-19 progresses, along with vaccination programs and the easing or tightening of travel restrictions.

In summer 2019 there were 123 nonstop international routes scheduled from JFK, with 111 nonstop international routes in the summer 2022 JFK schedule. Figure 23 includes the JFK international nonstop routes operated during the summer 2019 schedule compared to those currently scheduled for the summer 2022 season.

<sup>77</sup> Summer 2022 schedule as published on [airlinedata.com](http://airlinedata.com) as of January 29, 2022

Figure 23: Summer 2019 and Summer 2022 JFK International Scheduled Nonstop Destination Cities<sup>78</sup>



#### Europe

Amsterdam, NL  
Athens, GR  
Barcelona, ES  
Belgrade, RS  
Berlin, DE  
Brussels, BE  
Budapest, HU  
Copenhagen, DK  
Dublin, IE  
Dusseldorf, DE  
Edinburgh, UK  
Frankfurt, DE  
Funchal, PT  
Geneva, CH  
Glasgow, UK  
Helsinki, FI  
Keflavik, IS  
Krakow, PL  
Kyiv, UA  
Lisbon, PT  
London, UK  
Madrid, ES  
Malaga, ES  
Manchester, UK  
Milan, IT  
Moscow, RU  
Munich, DE

Nice, FR  
Oslo, NO  
Paris, FR  
Ponta Delgada, PT  
Prague, CZ  
Rome, IT  
Shannon, IE  
Stockholm, SE  
Tarbes-Lourdes, FR  
Venice, IT  
Vienna, AT  
Warsaw, PL  
Zurich, CH

#### Central America

Guatemala City, GT  
Liberia, CR  
Panama City, PA  
San Pedro Sula, HN  
San Salvador, SV

#### Canada

Calgary, AL  
Montreal, QC  
Toronto, ON  
Vancouver, BC

#### Caribbean

Antigua, AG  
Aruba, AW  
Barbados, BB  
Bermuda, BM  
Curacao, AN  
Grenada, GD  
Grand Cayman, KY  
Havana, CU  
Kingston, JM  
La Romana, DO  
Montego Bay, JM  
Nassau, BS  
Pointe A Pitre, GP  
Port au Prince, HT  
Providenciales, TC  
Puerto Plata, DO  
Punta Cana, DO  
Saint Lucia, LC  
Santiago, DO  
Santo Domingo, DO  
Sint Maarten, SX  
St. Kitts, KN  
St. Lucia, LC  
St. Vincent & Grenadines, VC  
Tobago, TT  
Trinidad, TT

#### Asia

Beijing, CN  
Chengdu, CN  
Chongqing, CN  
Delhi, IN  
Fuzhou, CN  
Guangzhou, CN  
Hong Kong, HK  
Manila, PH  
Mumbai, IN  
Seoul, KR  
Shanghai, CN  
Singapore, SG  
Taipei, TW  
Tashkent, UZB  
Tokyo, JP

#### Middle East

Abu Dhabi, AE  
Amman, JO  
Baku, AZ  
Doha, QA  
Dubai, AE  
Istanbul, TR  
Jeddah, SA  
Kuwait City, KW  
Riyadh, SA  
Tel Aviv, IL

#### Africa

Abidjan, CI  
Accra, GH  
Cairo, EG  
Casablanca, MA  
Dakar, SN  
Johannesburg, ZA  
Lagos, NG  
Lome, TG  
Nairobi, KE

#### Mexico

Cancun, QI  
Guadalajara, JA  
Mexico City, DF  
Monterey, NL  
Puerto Vallarta, JA  
Los Cabos, BS

#### South America

Belo Horizonte, BR  
Bogota, CO  
Buenos Aires, AR  
Cali, CO  
Caracas, VE  
Cartagena, CO  
Georgetown, GY  
Guayaquil, EC  
Lima, PE  
Medellin, CO  
Rio de Janeiro, BR  
Santiago, CL  
Sao Paulo, BR

Summer 2019 only

Summer 2019 & 2022

Summer 2022 (new since Summer 2019)

<sup>78</sup> Source: airlinedata.com. Summer 2022 schedule as published on January 29, 2022.



The number of domestic markets served nonstop from JFK increased from 67 to 72 between the summer 2019 schedule and summer 2022 schedule. The number of average summer schedule daily domestic departures from JFK increased from 357 to 367 between 2019 and 2022<sup>79</sup>. Although total U.S. airline capacity was reduced during the COVID-19 pandemic, airlines typically maintained service in as many places as possible to ensure access to any possible revenue that could be generated. The travel that has occurred during the pandemic has primarily been leisure-oriented, so some airlines responded by adding leisure-focused destinations to their route networks using capacity previously committed to business markets. The trend can be seen in the new domestic destinations being served from JFK in summer 2022 compared to summer 2019 including Bangor (Maine), Bozeman (Montana), and Key West (Florida).

Most of the airports that have lost nonstop service to JFK do not represent a loss in access to their regions because flights are available to other airports. These include:

- Houston Hobby (HOU): Service moved to Houston Intercontinental (IAH)
- Long Beach (LGB): Service moved to LAX and available at other Los Angeles CSA airports
- Oakland (OAK): Service available to SFO and SJC

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<sup>79</sup> Source: Published schedules on [airlinedata.com](http://airlinedata.com) as of January 6, 2022. Summer schedule is April – October.

## 7. Airfare Revenue

### Key Takeaways

1. JFK has high airfares, as it generated the second largest amount of leg base fare revenue among U.S. airports, despite being sixth busiest in passenger enplanements
2. JFK is one of the top 10 leg base fare revenue generating airports in the route networks of each of its three largest airlines (Delta, JetBlue, American)
3. JFK has the highest premium base fare revenue as a percentage of total base fare revenue among the 20 busiest U.S. airports, increasing its attractiveness to airlines

This section analyzes the strong fare revenues airlines generate at JFK, including the significant financial contribution of business and first-class cabin passengers to JFK airlines' route profitability.

### Fare Revenue at Large Airports

JFK is an important part of domestic and international airline route networks. Not only is it the primary gateway to the largest U.S. metropolitan area, but it is also important to airlines as a significant driver of revenues. In 2019, JFK's airlines generated \$20.1 billion in leg base fare revenue<sup>80</sup> from the passengers travelling on flights.

While JFK is the sixth largest U.S. airport in terms of passenger enplanements, it ranked second in passenger leg base fare revenues in 2019, as shown in Table 20.

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<sup>80</sup> Source: Sabre Market Intelligence for domestic and international passengers. Fare revenue is leg-based, so it includes an allocation for the fare revenue generated by the passenger's JFK flight segments, including passengers connecting at JFK. A leg-based metric is used because it is closest to the methodology airlines use to measure their performance in a market.

Table 20: 2019 Leg Base Fare Revenue at Busiest U.S. Airports<sup>81</sup>

Revenue Rank	Enplaned Passenger Rank	Airport	Leg Base Fare Revenue (billions)	Leg Base Fare Revenue/Enplaned Passengers
1	2	LAX – Los Angeles	\$22.8	\$529
<b>2</b>	<b>6</b>	<b>JFK – New York</b>	<b>\$20.1</b>	<b>\$645</b>
3	1	ATL – Atlanta	\$19.0	\$355
4	7	SFO – San Francisco	\$17.1	\$616
5	3	ORD – Chicago	\$16.5	\$402
6	12	EWB – Newark	\$12.9	\$557
7	4	DFW – Dallas/Ft. Worth	\$12.2	\$342
8	5	DEN – Denver	\$10.2	\$304
9	8	SEA – Seattle	\$9.8	\$391
10	14	IAH – Houston	\$9.7	\$441

LAX generated the most leg base fare revenue among the top U.S. airports and is 13.2% higher than JFK. However, it took 38.0% more enplaned passengers than JFK to reach that level, demonstrating the value of JFK passengers to airline revenues. ATL, the largest U.S. airport by passenger enplanements generated approximately \$1.1 billion less than JFK in leg base fare revenue. JFK's leg base fare revenue per enplaned passenger was the highest among the 10 busiest U.S. airports.

JFK's revenue rank is higher than its enplaned passenger rank because airlines can charge higher fares at JFK than other airports, which is an important component of strong route network profitability. The unit measurement of base fares is yield, or the base fare revenue charged per mile (expressed in cents/mile). JFK's leg yield was second highest among the 10 busiest U.S. airports before the COVID-19 pandemic (September – November 2019) and currently (September – November 2021), as shown in Table 21. Since yield is a function of flight length, the yield figures have been adjusted to the average flight length at JFK to enable a consistent comparison between airports.

<sup>81</sup> Source: Enplanement ranking – U.S. DoT T100, Leg fare revenue – Sabre Market Intelligence

Table 21: Adjusted Leg Yield at Busiest U.S. Airports<sup>82</sup>

Airport	September – November 2019		September – November 2021	
	Adjusted Leg Yield	Avg. Flight Distance	Adjusted Leg Yield	Avg. Flight Distance
SFO	11.9	2,404	11.7	2,062
<b>JFK</b>	<b>11.7</b>	<b>2,817</b>	<b>11.3</b>	<b>2,452</b>
LAX	10.3	2,411	10.6	2,014
EWR	12.0	1,909	9.7	1,739
ATL	10.4	977	9.5	941
IAH	10.7	1,419	9.4	1,168
ORD	10.0	1,336	9.0	1,297
DFW	9.7	1,203	8.9	1,097
SEA	9.4	1,504	8.8	1,432
DEN	9.3	1,028	8.2	981

JFK was a significant revenue driver for each of its largest market share airlines (JetBlue, Delta, and American) before the COVID-19 pandemic and is a key ingredient in each carrier's recovery. In September - November 2019 and September – November 2021, JFK ranked among the top 10 leg base fare revenue generating airports in each of those three airline route networks, as shown in Table 22.

Table 22: JFK Major Airline Leg Base Fare Revenue Ranking (September – November)<sup>83</sup>

JetBlue			Delta			American		
Revenue Rank			Revenue Rank			Revenue Rank		
2019	2021	Airport	2019	2021	Airport	2019	2021	Airport
<b>1</b>	<b>1</b>	<b>JFK</b>	1	1	ATL	1	1	DFW
2	2	BOS	2	2	DTW	2	2	CLT
3	3	FLL	3	3	MSP	3	4	ORD
4	6	MCO	<b>4</b>	<b>4</b>	<b>JFK</b>	4	3	MIA
5	4	LAX	5	6	LAX	5	6	LAX
6	8	SFO	6	5	SLC	6	7	PHL
7	7	SJU	7	7	SEA	7	5	PHX
8	5	EWR	8	8	LGA	8	10	LHR
9	9	PBI	9	10	AMS	<b>9</b>	<b>8</b>	<b>JFK</b>
10	18	DCA	10	11	CDG	10	9	DCA

## JFK Airfares

Table 23 compares average domestic one-way base airfares among the New York CSA airports in 2019 (excluding SWF because of its low total passenger traffic). JFK's average domestic base fare was the highest among the larger New York CSA airports. The list of top 20 domestic JFK markets

<sup>82</sup> Source: Sabre Market Intelligence. Yield adjusted to JFK average flight distance in each year (2,817 in 2019 and 2,452 in 2021)

<sup>83</sup> Source: Sabre Market Intelligence. Figures include leg base revenue generated by each airline as the marketing airline (passengers might fly part or all their itineraries on an affiliated regional carrier or a partner airline).



was itself influenced by the 1,500-mile perimeter rule at LGA with 10 of JFK's top 20 domestic markets being 1,500 miles or more from JFK. In those longer haul markets, JFK had a 53.7% share of New York CSA traffic compared with 35.6% of the top 20 markets as a whole. EWR, the other major airport with longhaul capability, also had a share premium in the ex-perimeter markets although it was not as pronounced as JFK. EWR's share of the 10 ex-perimeter markets was 37.4% and 33.8% across all of the top 20 JFK domestic markets.

The availability of nonstop flights from JFK, but not LGA, had an upward influence on average fares. JFK's share of New York CSA traffic was lower in markets within the LGA perimeter. Austin, for example, is one of JFK's top 20 domestic markets and is just 21 miles beyond the LGA perimeter. The Dallas – Ft. Worth CSA<sup>84</sup> generated more traffic from JFK and LGA in total than Austin, but its location within the LGA perimeter<sup>85</sup> created more of a traffic split between JFK and LGA.

JFK's average base fares were highest in its largest domestic market, Los Angeles. The proportion of business traffic on the route is high, with a substantial amount of premium cabin capacity operating in the market especially between JFK and LAX.

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<sup>84</sup> Dallas – Ft. Worth CSA includes DFW and DAL airports

<sup>85</sup> DFW is 1,391 miles from JFK



Table 23: Comparison of 2019 Airfares in JFK's Top 20 Domestic Origin-Destination Markets<sup>86</sup>

Rank	Market	JFK Departing Origin-Destination Passengers	Distance from JFK (miles)	Share of New York Passengers	Average one-way domestic base airfare				
					JFK	EWB	LGA	ISP	HPN
1	Los Angeles <sup>a</sup>	1,806,785	2,475	63.2%	\$303	\$277	\$230	\$227	\$265
2	San Francisco <sup>b</sup>	1,077,596	2,586	51.4%	\$283	\$301	\$241	\$255	\$244
3	Miami <sup>c</sup>	893,065	1,089	26.6%	\$162	\$148	\$148	\$99	\$182
4	Orlando <sup>d</sup>	602,896	944	24.8%	\$143	\$126	\$135	\$98	\$169
5	Las Vegas	469,766	2,248	50.9%	\$239	\$217	\$177	\$171	\$238
6	San Juan	396,499	1,598	66.6%	\$188	\$191	\$171	\$220	\$283
7	Seattle	390,153	2,422	59.5%	\$237	\$250	\$252	\$254	\$269
8	Phoenix	319,198	2,153	48.8%	\$218	\$230	\$209	\$204	\$251
9	Atlanta	290,699	760	16.4%	\$150	\$159	\$153	\$62	\$208
10	San Diego	282,992	2,446	52.7%	\$257	\$257	\$230	\$219	\$266
11	Tampa	262,945	1,005	26.4%	\$155	\$152	\$147	\$103	\$180
12	Austin	260,141	1,521	50.1%	\$199	\$212	\$186	\$182	\$209
13	Salt Lake City	241,444	1,990	66.5%	\$251	\$254	\$229	\$195	\$290
14	West Palm Beach	235,700	1,028	19.1%	\$161	\$168	\$174	\$118	\$192
15	Charlotte	204,425	541	21.6%	\$115	\$109	\$125	\$124	\$228
16	Chicago <sup>e</sup>	197,866	740	8.6%	\$139	\$186	\$135	\$136	\$215
17	New Orleans	190,139	1,182	35.2%	\$162	\$152	\$165	\$156	\$188
18	Buffalo	188,919	301	61.3%	\$121	\$140	\$128	\$118	\$178
19	Denver	182,490	1,626	20.1%	\$167	\$253	\$174	\$165	\$201
20	Jacksonville	173,181	828	50.2%	\$139	\$176	\$166	\$131	\$167
<b>Top 20</b>		<b>8,666,899</b>	<b>1,776</b>	<b>35.6%</b>	<b>\$219</b>	<b>\$199</b>	<b>\$151</b>	<b>\$108</b>	<b>\$195</b>
Other Cities		2,649,189	1,258	18.4%	\$193	\$205	\$180	\$122	\$211
<b>Total Domestic</b>		<b>11,316,088</b>	<b>1,655</b>	<b>29.2%</b>	<b>\$213</b>	<b>\$201</b>	<b>\$166</b>	<b>\$111</b>	<b>\$199</b>

a. Los Angeles includes BUR, LAX, LGB, ONT, SNA

b. San Francisco includes OAK, SFO, SJC

c. Miami includes FLL, MIA

d. Orlando includes MLB, MCO

e. Chicago includes MDW, ORD

<sup>86</sup> Source: U.S. DoT O&D Survey, SWF excluded due to low traffic volumes.





The average one-way base fare in JFK's 2019 top 20 domestic markets during the first half of 2019 was \$210. In the first six months of 2021, the average one-way base fare decreased by 25.2% to \$157.<sup>87</sup> The primary reasons for the decline are airline discounting to re-start demand as the U.S. vaccinations started in earnest and travel restrictions began to ease, and the lack of business travel.

### **Premium Passenger Revenue**

One of the most important sources of airline route profitability is the sale of premium cabin seats in business and first class. Strong premium cabin revenues increase a market's attractiveness to airlines. Before the COVID-19 pandemic (September – November 2019) JFK had the highest percentage of premium cabin base fare revenue among the 20 busiest U.S. airports. JFK continues to lead the other airports in the September – November 2021 period, demonstrating JFK's resilience as a market and importance to airline route networks<sup>88</sup>. Figure 24 shows the percentage of premium cabin base fare revenue in September – November 2019 and September – November 2021 for the 10 busiest U.S. airports.

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<sup>87</sup> Source: U.S. DoT O&D Survey

<sup>88</sup> Source: Sabre Market Intelligence for origin-destination traffic (unavailable on a leg basis)

Figure 24: Premium Cabin Base Fare Revenue as a Percentage of Total Base Fare Revenue at the Busiest 10 U.S. Airports<sup>89</sup>



<sup>89</sup> Source: Enplanement ranking – U.S. DoT T100, base fare revenue – Sabre Market Intelligence. Premium Cabin includes first class and business class tickets (unavailable on a leg basis)

## 8. Economic Basis for Airline Traffic

### Key Takeaways

1. The New York CSA population continues to grow and is forecasted to reach 25.1 million people in 2030
2. More than 3.5 million area households (42.6% of total) have an income of \$100,000+, a key indicator of air transportation demand
3. New York City attracted 66.6 million visitors in 2019 and is expected to return to that level in 2024
4. The New York CSA is the largest metro economy in the U.S. with a diverse industry base that has proven resilient in recovering from previous economic downturns
5. New York state GDP returned to Q4 2019 levels in Q3 2021 with unemployment continuing to decrease

This section analyzes the important components necessary for long-term airline traffic growth including a historically large, diverse, growing, and resilient economy, strong population and demographic trends, and high levels of employment and personal income.

### Population

The population growth rate in the New York CSA has historically been slightly lower than the population growth rate of the U.S., but higher than that of New York state, as shown in Table 24 and Figure 25.

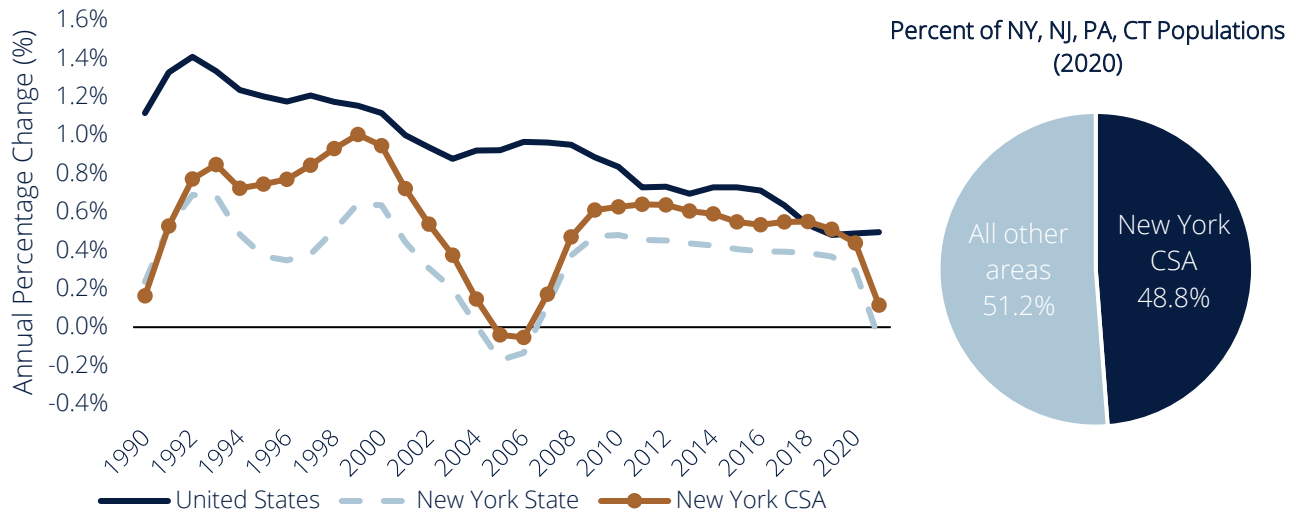
Table 24: Population Growth in New York CSA Compared to New York State and U.S.<sup>90</sup>

	Population (in millions) <sup>91</sup>		
	New York CSA	New York State	United States
1990	18.9	18.0	249.5
2000	20.5	19.0	282.1
2010	21.3	19.4	309.3
2020	22.5	20.2	329.8
	Average annual percent increase (decrease)		
	New York CSA	New York State	United States
1990-2000	0.8%	0.5%	1.2%
2000-2010	0.4%	0.2%	0.9%
2010-2020	0.6%	0.4%	0.6%

<sup>90</sup> Source: Data downloaded from Oxford Economics subscription, accessed January 2022

<sup>91</sup> Source: Total Population estimated from US Census Bureau, accessed December 2021

Figure 25: Population Rate of Growth



The New York CSA population grew by an average of 0.8% per year from 18.9 million in 1990 to 20.5 million in 2000. The population in the New York CSA increased from 20.5 million to 21.3 million between 2000 and 2010, which is an average annual increase of 0.4% per year. From 2010 to 2020, the population of the New York CSA increased from 21.3 million to 22.5 million, resulting in an average annual increase of 0.6%.

The COVID-19 pandemic has had an impact on the population growth of both New York state and the New York CSA. As is shown in Figure 25, population growth rates dramatically reduced, with only a 0.1% increase in the New York CSA population in 2021. The region, like many urban centers, saw a surge in people moving from densely populated urban areas to quieter suburban or rural locations, particularly early in the COVID-19 pandemic. In New York City, net migration losses more than tripled in 2020 to an estimated 130,837 between March 2020 and June 2021. However, as the COVID-19 pandemic has progressed toward the end of 2021 and more schools, office buildings, and leisure activities have reopened migration losses have started to reverse, indicating the outflow may only be temporary<sup>92</sup>.

Despite the uncertain outlook for some cities, between 2020 and 2030, a population increase of approximately 740,600 people is forecasted in the New York CSA, equalling roughly 74,060 new residents per year<sup>93</sup>. The forecasted population of the New York CSA in 2030 is 23.2 million people. The annual growth rate for the New York CSA between 2021 and 2030 is expected to be 0.3%, which is higher than the expected 0.2% annual increase in New York state but slightly less than the 0.5% annual increase expected for the U.S.

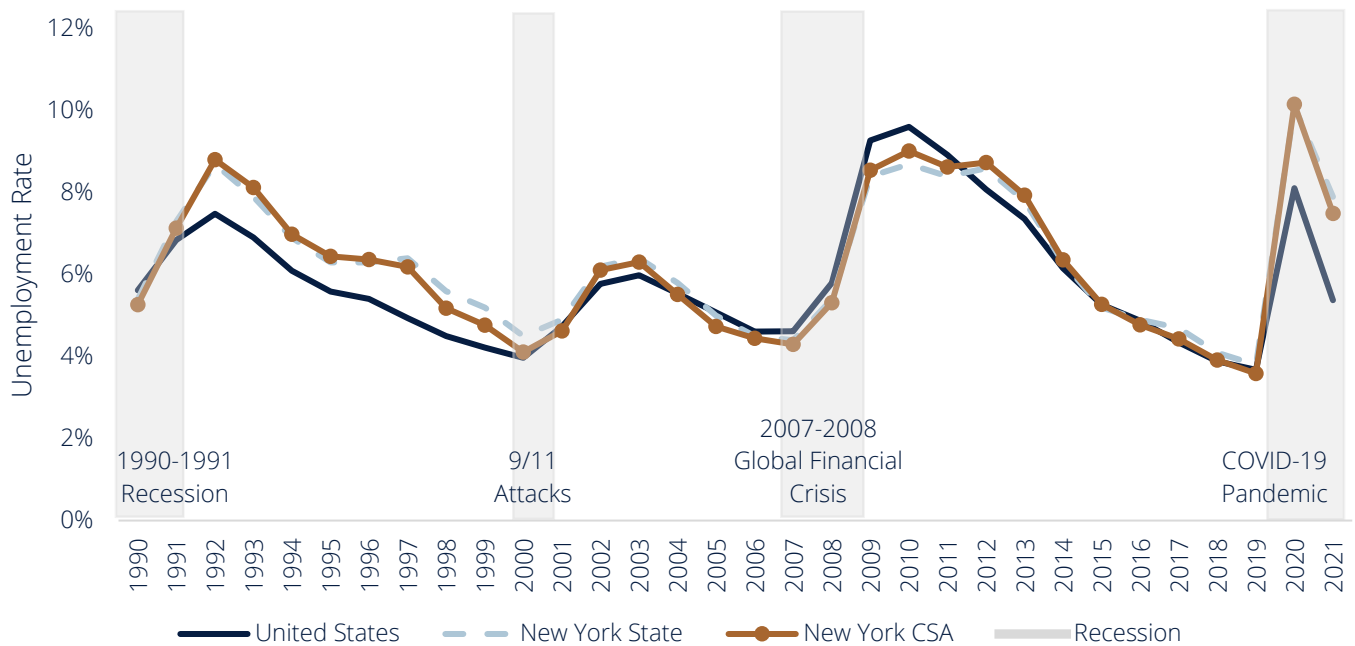
<sup>92</sup> Source: New York City Comptroller, Report: The Pandemic's Impact on NYC Migration Patterns, <https://comptroller.nyc.gov/reports/the-pandemics-impact-on-nyc-migration-patterns/>, accessed January 2022.

<sup>93</sup> Source: Total Population data downloaded from Oxford Economics subscription, accessed January 2022

## Employment

Over the past 20 years, employment growth trends in the New York CSA have been very similar to both New York state and the U.S., as shown in Figure 26. During the economic downturns of the last three decades, New York CSA employment has declined in the same proportion as New York State and the U.S. Following those crises, employment in the New York CSA has recovered to pre-crisis levels at the same or faster pace than New York state or the U.S.

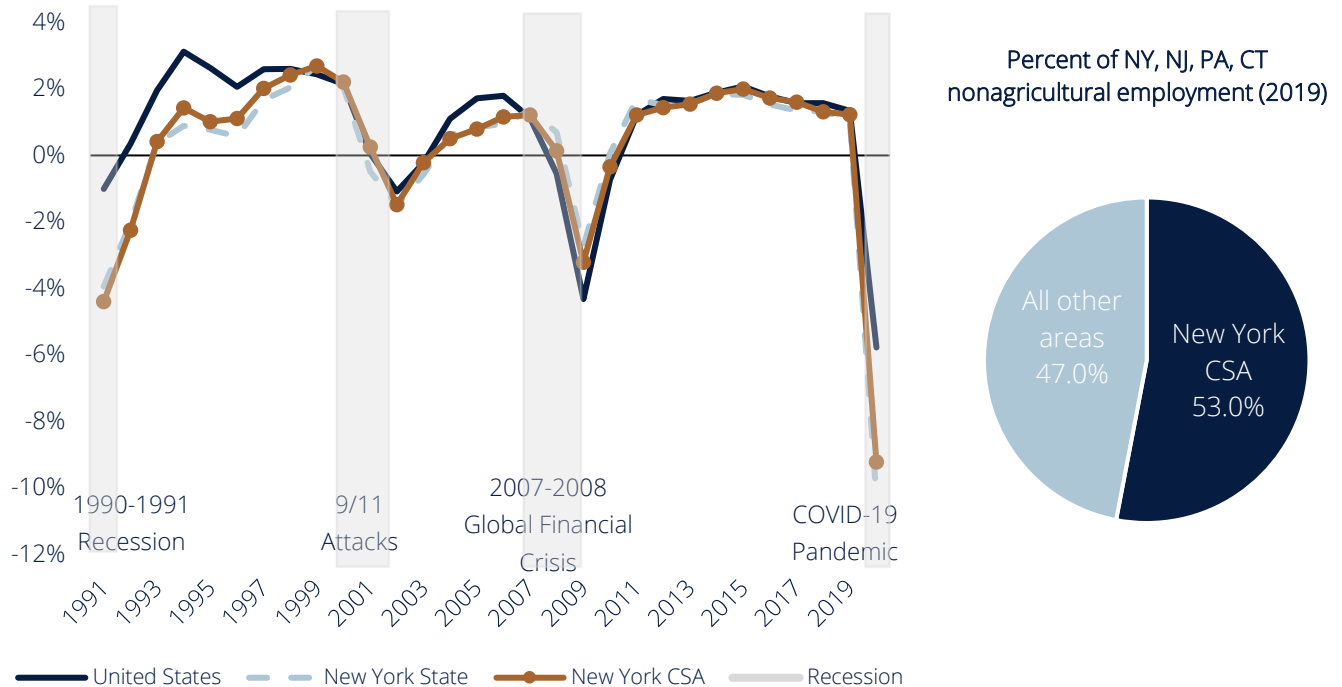
Figure 26: Unemployment Rates<sup>94</sup>



Between 1990 and 2000, nonagricultural employment in the New York CSA increased at an average annual rate of 0.6%, growing from 9.5 million to 10.2 million, as shown in Figure 27. The trend is smaller than the average growth in the U.S. of 1.9% per year over the same 10-year period.

<sup>94</sup> Source: Data downloaded from Oxford Economics subscription, accessed December 2021

Figure 27: Nonagricultural Employment Annual Rates of Change<sup>95</sup>



From 2000 to 2010, nonagricultural employment in the New York CSA decreased from 10.2 million to 10.0 million, an average annual decrease of 0.1%. However, this was largely driven by a decrease of over 350,000 employees from 2008 to 2010 due to the 2007 – 2008 Global Financial Crisis, prior to which, employment did continue to grow from 2000<sup>96</sup>. The employment rate rebounded from the 2007 – 2008 Global Financial Crisis from 2010 to 2019, with nonagricultural employment increasing in the New York CSA from 9.2 million to 11.3 million, resulting in an average annual increase of 1.5%, slightly less than the 1.6% annual growth in the U.S. as shown in Table 25.

Table 25: Nonagricultural Civilian Employment<sup>97</sup>

	New York CSA	New York State	United States
1990	9.5	8.2	109.5
2000	10.2	8.6	132.0
2010	10.0	8.5	130.3
2019	11.5	9.8	150.9
<b>Average annual percent increase (decrease)</b>			
1990-2000	0.6%	0.5%	1.9%
2000-2010	(0.1%)	(0.1%)	(0.1%)
2010-2019	1.5%	1.5%	1.6%

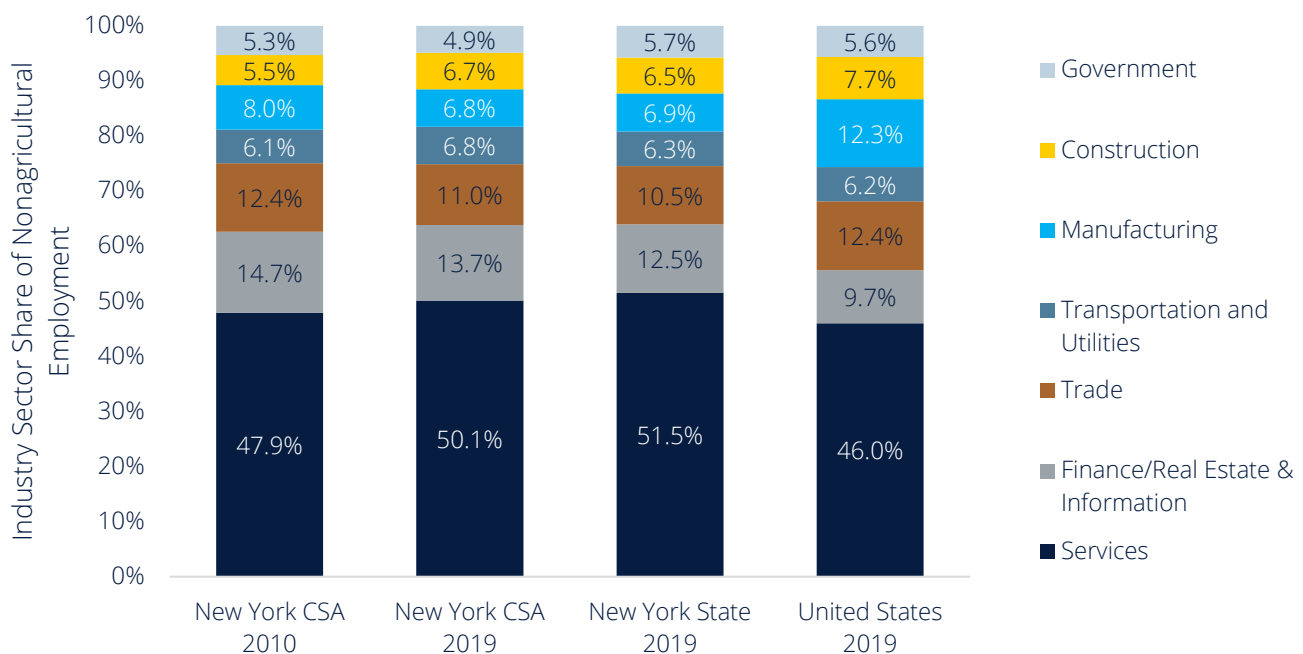
<sup>95</sup> Source: Data downloaded from US Bureau of Labor Statistics and Oxford Economics subscription, accessed January 2022

<sup>96</sup> Source: Data downloaded from Oxford Economics subscription, accessed December 2021

<sup>97</sup> Source: Data downloaded from US Bureau of Labor Statistics, accessed December 2021

Employment in services (50.1% of regional total employment) which includes health, education, professional, hospitality and tourism, finance, and real estate accounted for a combined 63.8% of total nonagricultural employment in the New York CSA in 2019. Figure 28 compares nonagricultural employment by industry sector in the New York CSA in 2010 and 2019 and in New York state and the U.S. in 2019. The share of the New York CSA workforce in the services and finance sectors is larger than the national average.

**Figure 28: Comparative Distribution of Nonagricultural Employment by Industry Sector<sup>98</sup>**



### 9/11 Attacks

After the 1991 recession, the unemployment rate in the New York CSA fell consistently through the rest of the 1990's, reaching a low of 4.1% in 2000. The rate was just slightly higher than the average rate in the U.S. of 4.0%. The number of people employed in non-agricultural sectors increased from 8.9 million in 1992 to 10.2 million in 2000.

However, in 2001, a new recession occurred largely caused by the 9/11 Attacks which had a large effect on the country, and especially New York City, in the days and weeks that followed. The New York stock exchange was closed for several days, worsening an already weak economic climate. The recession had relatively few impacts compared to the 1991 downturn, largely attributed to the governmental financial support put in place in response<sup>99</sup>. As a result, unemployment peaked at a lower level of 6.3% in the New York CSA and 6.4% in New York state

<sup>98</sup> Source: Data downloaded from US Census Bureau

<sup>99</sup> Source: The Balance, The 2001 Recession, <https://www.thebalance.com/2001-recession-causes-lengths-stats-4147962>, accessed January 2022

in 2003. This was much lower than the peak experienced the decade before in 1992 where unemployment peaked at 8.8% in the New York CSA, and 8.7% in New York state<sup>100</sup>.

### 2007 – 2008 Global Financial Crisis

The 2007 – 2008 Global Financial Crisis created a large worldwide recession that significantly affected employment rates in the U.S. The number of people employed in nonagricultural sectors declined by 4.3% in the U.S. and 3.2% in the New York CSA in 2009. The unemployment rate rose to 9.3% in the U.S. and 8.6% in the New York CSA that year. As seen from Figure 26, in the three years after the 2007 – 2008 Global Financial Crisis, the New York CSA had a noticeably lower peak unemployment rate than the U.S.

In the recovery from the 2007 – 2008 Global Financial Crisis, the annual rate of change in nonagricultural employment remained steady with the New York CSA seeing an annual increase of between 1.5% and 2.0%, in line with the rest of the U.S. As a result, unemployment rates in the U.S. fell from 9.6% in 2010, to 3.7% in 2019. A similar trend occurred in the New York CSA with rates falling consistently (except for 2012), from 9.0% in 2010 to 3.6% in 2019. The decline in the New York CSA unemployment rate during the 2010s was lower than the U.S. decline, although that was due to the New York CSA unemployment rate being lower than the U.S. at the start of the decade. Therefore, the New York CSA suffered less economic loss and had a stronger recovery than the U.S. from the 2007 – 2008 Global Financial Crisis, resulting in the New York CSA having a lower unemployment rate than the U.S. in 2010<sup>101</sup>.

### COVID-19 Pandemic

The COVID-19 pandemic led to a large decrease in the number of people employed across the U.S., with the New York CSA affected particularly hard by high case rates and government restrictions on businesses early in the crisis. New York CSA unemployment jumped to a peak of 10.2% in 2020 from a 30-year historical low of 3.9% in February 2020<sup>102</sup>. The large increase in unemployment was largely driven by the high proportion of workers employed in hospitality, tourism, transportation, and leisure industries which were some of the worst affected by enforced business closures related to the COVID-19 pandemic.

However, the resilience of the New York economy demonstrated in prior recessions is once again helping the region to rebound. The high levels of unemployment seen in New York state (reaching a high of 16.2% in April 2020) started to decrease through 2020 and 2021. By November 2021, the unemployment rate in New York state had fallen to 6.6%, and the downward trend is set to continue through 2022 as the pandemic situation improves<sup>103</sup>.

The improvement is seen most evidently in leisure and hospitality employment. In February 2020, 966,600 people were employed in the sectors in the New York CSA (a record high

<sup>100</sup> Source: Data downloaded from US Department of Labor Statistics, accessed January 2022

<sup>101</sup> Source: US Department of Commerce, Bureau of Economic Analysis, Real GDP Regional Data, [https://apps.bea.gov/iTable/index\\_regional.cfm](https://apps.bea.gov/iTable/index_regional.cfm), accessed January 2022

<sup>102</sup> Source: Data retrieved from US Department of Labor Statistics, accessed January 2022

<sup>103</sup> Source: Data retrieved from US Department of Labor Statistics, accessed January 2022





number), but just two months later in April 2020, this number had decreased by 61.9%. However, by November 2021, this had rebounded to 743,000 people employed, 22.8% below levels in November 2019<sup>104</sup>. The increase occurred despite significant restrictions still in place on international travel (especially on arrivals from Europe), which were not lifted until November 2021. Based on prior recession recoveries, unemployment rates of around 4% are forecasted to return by 2023 - 2024, which aligns with the forecasted JFK traffic recovery in 2024 - 2025.

In the next decade as the recovery from the pandemic progresses, an average annual increase in nonagricultural employment growth of 1.2% is forecasted in the New York CSA. A return to pre-pandemic (2019) employment levels is forecast by 2023, similar to the U.S. average, enabling a recovery in air passenger traffic<sup>105</sup>.

### Major Employers

New York is known as a global financial center. The industry has continued to evolve with advances in technology, and New York is at the center of new and upcoming financial industries such as blockchain, fintech, and insurance-tech<sup>106</sup>. New York City has over 460,000 people working in the financial sector with companies such as JP Morgan, Citi, and Morgan Stanley. However, the New York CSA also has a highly diversified industrial economy that also includes technology, pharmaceuticals, fashion, and manufacturing with companies such as IBM, Verizon Communications, Pfizer, and Colgate-Palmolive based in the New York CSA.

New York state is the headquarters for 54 Fortune 500 firms, 53 of which are in New York City, more than any other city in the U.S.<sup>107</sup> These companies operate globally with hundreds of thousands of employees in offices, manufacturing plants, and other facilities across the world.

### Per Capita Personal Income

Per capita personal income (in 2012 dollars) has been consistently higher in the New York CSA compared to New York state and the U.S. as shown in Figure 29.

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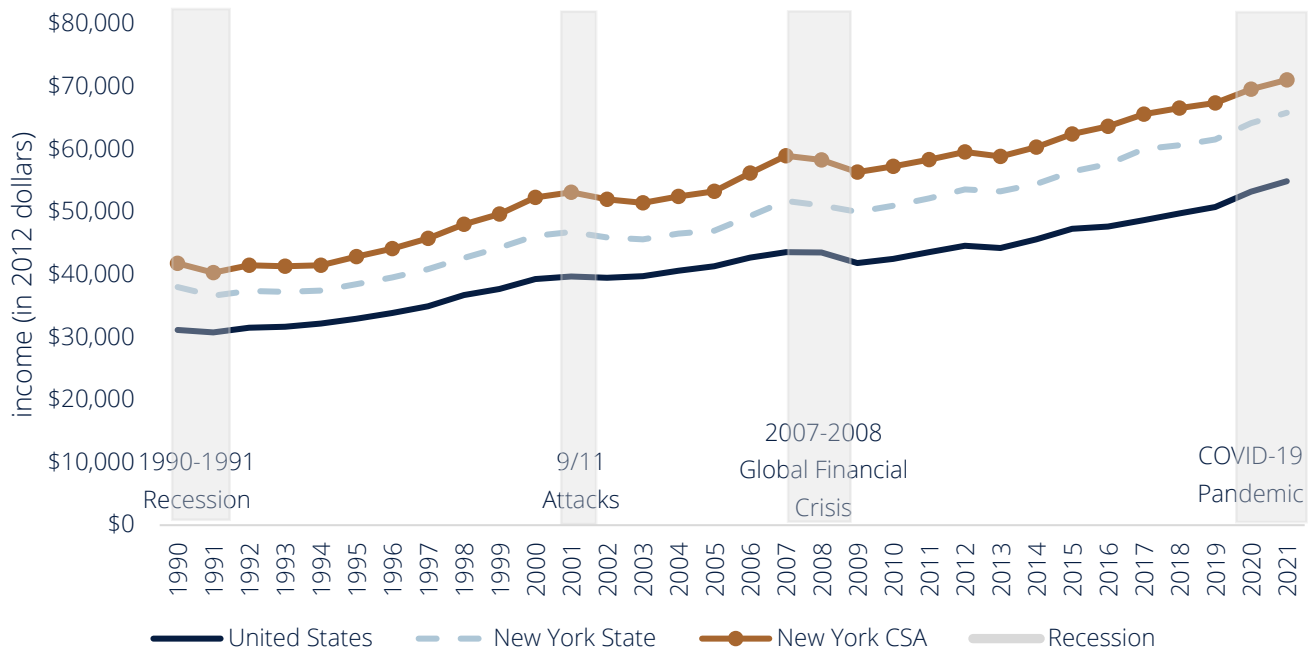
<sup>104</sup> Source: Data retrieved from US Department of Labor Statistics, accessed January 2022

<sup>105</sup> Source: Data downloaded from Oxford Economics subscription, accessed January 2022

<sup>106</sup> Source: Empire State Development, <https://esd.ny.gov/industries/financial-services-and-insurance>, accessed January 2022

<sup>107</sup> Source: Fortune 500, *Explore the 500*, <https://fortune.com/fortune500/2021/search>, accessed January 2022

Figure 29: Per Capita Personal Income (in 2012 Dollars)<sup>108</sup>



In 2020, per capita income was 30.7% higher in the New York CSA than the U.S. Declines in personal income were seen during all recession periods. The most sustained fall was during the 2007 - 2008 Global Financial Crisis. Decreasing wage and salary incomes and an increasing population contributed to the decline in per capita personal income between 2007 and 2009. However, the New York CSA did not experience a disproportionate decrease in income compared to the rest of the U.S., and the recovery brought a return to increasing salaries and wages. The trend during the COVID-19 pandemic downturn has been different, where income has proven more resilient despite higher unemployment rates.

Per capita personal income is forecasted to increase at an annual rate of 1.1% from 2021 to 2030, increasing from \$71,085 in 2021 to \$78,544 in 2030<sup>109</sup>. The growth rate is slightly higher than the 0.9% annual increase forecasted for the U.S. during the same period. The income rise is largely driven by growth in high-wage industries such as technology and education, coupled with the slightly lower rate of population growth.

<sup>108</sup> Source: Downloaded from Oxford Economics subscription, accessed January 2022

<sup>109</sup> Source: Per capita Personal Income data downloaded from Oxford Economics subscription, accessed January 2022

## Household Income above \$100,000

Approximately 55% of airline fare expenditures are made by households with annual income above \$100,000<sup>110</sup>, so the size of that population in a region is an indicator of its potential air passenger demand. In 2019, the over 3.5 million New York CSA households with an income above \$100,000 represented 42.6% of all area households and ranked first in the U.S. for the largest number of households in that category, as shown in Table 26.

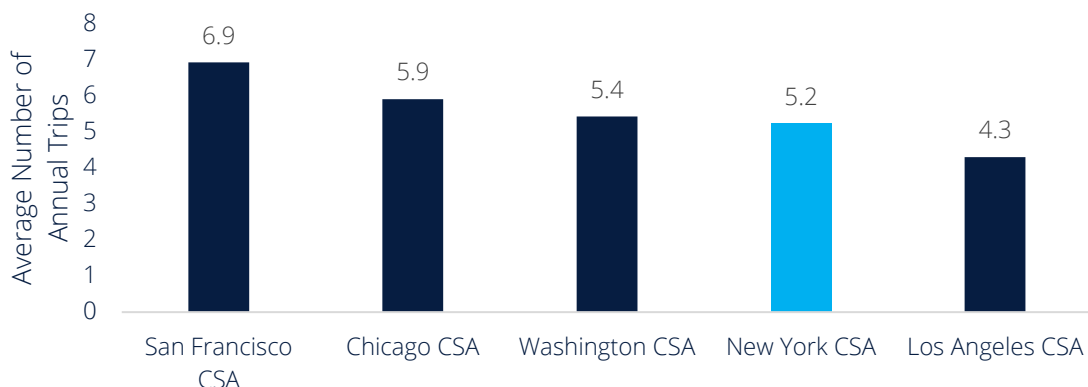
Table 26: 2019 Households with Income of \$100,000 and Above by Metropolitan Region<sup>111</sup>

Rank	Combined Statistical Area	Households with Income of \$100,000 and above	Percent of Households in the CSA with Income of \$100,000 or above
1	New York CSA	3,554,885	42.6%
2	Los Angeles CSA	2,299,987	38.2%
3	Washington CSA	1,724,048	48.0%
4	San Francisco CSA	1,722,090	51.3%
5	Chicago CSA	1,366,705	37.1%

The high level of personal income in the New York CSA enables the disposable income for travel. There is an average of 5.2 annual trips per person in the New York CSA, the fourth highest among U.S. regions and demonstrating the strong air travel demand in the area, as shown in Figure 30.

Figure 30: Top 5 CSAs with Highest Propensity to Travel<sup>112</sup>

(Total Origin-Destination Passengers/Total Population)



<sup>110</sup> Source: *Who's Buying for Travel* 12<sup>th</sup> edition, New Strategist Publications, 2018. Data in *Who's Buying for Travel* are based on the US Department of Labor, Bureau of Labor Statistics' "Consumer Expenditure Survey," an ongoing nationwide survey of household spending.

<sup>111</sup> Source: Income data from US Census Bureau, accessed January 2022

<sup>112</sup> Source: US Census Bureau (population data), Sabre MI (origin-destination passenger data)



## Visitor Activity and Leisure Travel

New York City is also one of the most popular travel destinations in the world. In 2019, 66.6 million visitors came to New York, with approximately 63% of those visitors staying overnight<sup>113</sup>. Visitation in 2019 was up 2.4% over 2018 and grew 17.5% over the previous five years. There were 28.3 million domestic visitors in 2019 who stayed overnight in New York City, an increase of 4.4% from 2018. In addition, 13.5 million international visitors also had an overnight visit in 2019, which was slightly down on record levels of 13.6 million international overnight visitors in 2018. Table 27 compares domestic and international visitation, day versus overnight trips, and visitor country of origin.

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<sup>113</sup> NYC & Company 2019 Annual Report. NYC & Company is the official destination marketing organization for the City of New York.



Table 27: 2018 and 2019 New York City Visitor Activity<sup>114</sup>

	2018 (000)	Percent of Total	2019 (000)	Percent of Total	% Change 2018-19
<b>Visitors</b>					
Domestic	51,500	79.1%	53,100	79.7%	3.1%
International	13,600	20.9%	13,500	20.3%	-0.7%
<b>Total Visitors</b>	<b>65,100</b>	<b>100%</b>	<b>66,600</b>	<b>100%</b>	<b>2.3%</b>
<b>Domestic Visitors</b>					
Day Visitors	24,400	47.4%	24,800	46.7%	1.6%
Overnight Visitors	27,100	52.6%	28,300	53.3%	4.4%
<b>Total Domestic</b>	<b>51,500</b>	<b>100%</b>	<b>53,100</b>	<b>100.0%</b>	<b>3.1%</b>
<b>International Visitors</b>					
<b>Country</b>	<b>Visitors 2018 (000)<sup>115</sup></b>	<b>Share of Intl Visitors</b>			
UK	1,259	9.3%			
China	1,082	8.0%			
Canada	1,005	7.4%			
Brazil	906	6.7%			
France	814	6.0%			
Australia	714	5.3%			
Germany	613	4.5%			
Italy	591	4.3%			
Spain	517	3.8%			
Mexico	488	3.6%			
Argentina	401	2.9%			
South Korea	400	2.9%			
India	358	2.6%			
Japan	341	2.5%			
Ireland	292	2.1%			
Netherlands	245	1.8%			
Colombia	245	1.8%			
Switzerland	228	1.7%			
Sweden	210	1.5%			
Israel	197	1.4%			
Other	2,694	19.8%			
<b>Total International Visitors</b>	<b>13,600</b>	<b>100.0%</b>			

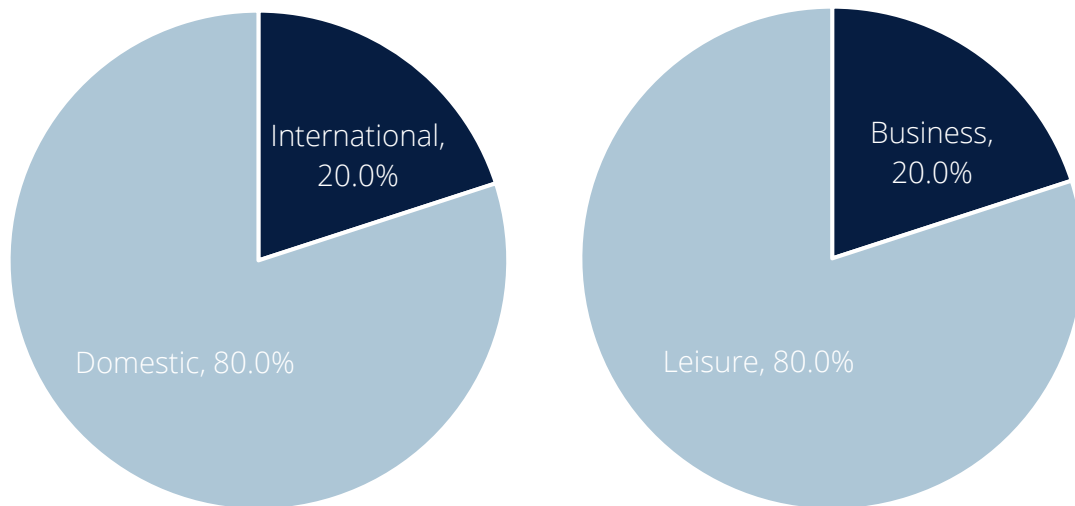
<sup>114</sup> Source: NYC & Company, Annual Report 2019, <https://indd.adobe.com/view/a614092f-2162-4a39-97c3-f4d67b0cbe0b>, accessed January 2022. 2019 source country data not available.

Source: NYC & Company, Annual Report 2018, <https://indd.adobe.com/view/fcc4cd9f-7386-4b52-a39b-c401266a137f>, accessed January 2022

<sup>115</sup> Latest available data by country

Because visitors to New York City come from a wide range of source markets, the tourism sector is not dependent on any one country. Figure 31 summarizes the source and purpose of travel for these visitors.

Figure 31: 2019 New York City Visitor Origin and Purpose<sup>116</sup>



In addition to world renowned leisure attractions, New York also offers a popular location for conferences and events. In 2019, 6.2 million people visited New York city to attend conventions and in total, they accounted for 20% of hotel demand in Manhattan and Brooklyn. One of the largest event spaces in New York City is the recently expanded Javits Center with over 3.3 million square feet of exhibition space. This facility alone contributes over \$3 billion to the New York state economy<sup>117</sup>.

#### New York City Tourism Recovery Underway

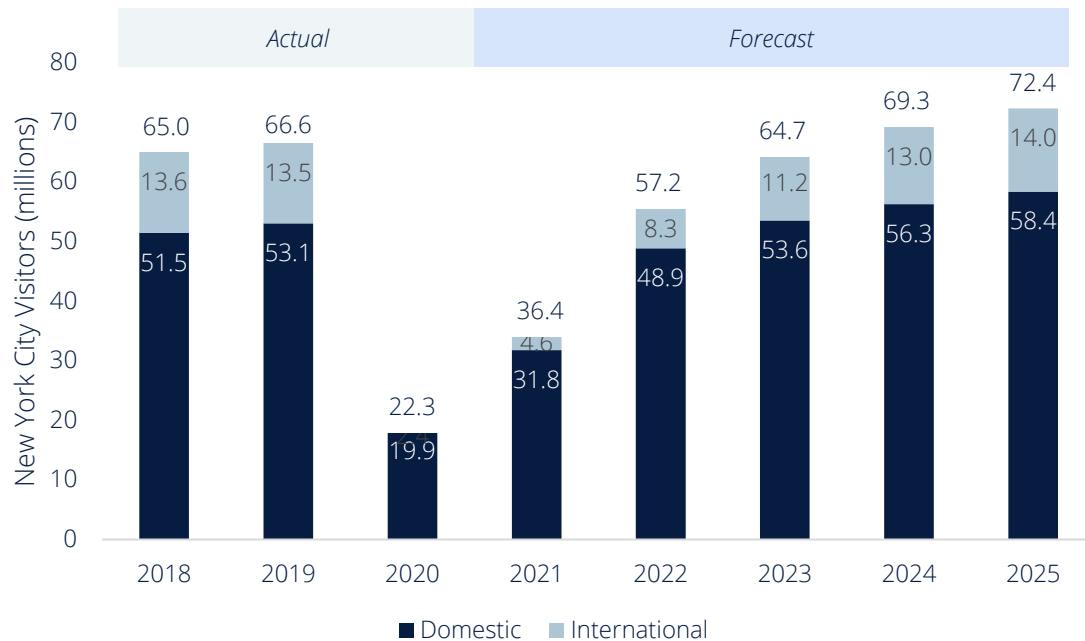
Like many global tourist destinations over the last year, the COVID-19 pandemic has led to a dramatic reduction in New York CSA tourism, especially from international visitors. However, as restrictions eased in 2021, the tourism sector started to recover. The 2022 forecast is for tourism visitation in New York City to be 14.1% below 2019 levels. However, the decrease in international tourists specifically is expected to be greater, with 38.5% fewer visitors expected in 2022 than 2019. Full recovery back to pre-pandemic levels for all New York City tourism is expected in 2024<sup>118</sup>, as shown in Figure 32.

<sup>116</sup> NYC & Company 2019 Annual Report

<sup>117</sup> Javits Center 2019 Year in Review

<sup>118</sup> Source: NYC & Company, Annual Report 2020, Outlook as of February 2021, <https://indd.adobe.com/view/3e235017-4549-4a3a-af52-171d9b95094e>, accessed January 2022

Figure 32: New York City Visitor Outlook<sup>119</sup>



Confidence in the region's recovery is reflected in a continued investment in new hotels. In the first 10 months of 2021, 22 new hotels opened in New York City adding 4,139 rooms. The development pipeline is currently on track to add another 13,838 rooms over the next three years, which would increase the city's hotel capacity by 5.8% over 2019 and adds 5.1 million annual room nights to the city's inventory.<sup>120</sup>

### Business Travel

To date, the majority of air traffic recovery from the COVID-19 pandemic has been led by leisure travel<sup>121</sup>. Corporate travel policies, budget constraints, and various international border restrictions led to a dramatic decrease in business travel throughout 2020 and into early 2021. From the start of the pandemic, through to April 2021, business travel in the U.S. remained over 90% below pre-pandemic levels.

<sup>119</sup> NYC & Company 2020 Annual Report

<sup>120</sup> NYC & Company Fall-Winter 2021 Hotel Development in NYC Report

<sup>121</sup> Source: Investec, Aviation Market Snapshot Q4 2021, [https://www.investec.com/en\\_gb/focus/economy/aviation-market-snapshot-q4-2021.html](https://www.investec.com/en_gb/focus/economy/aviation-market-snapshot-q4-2021.html), accessed January 2022

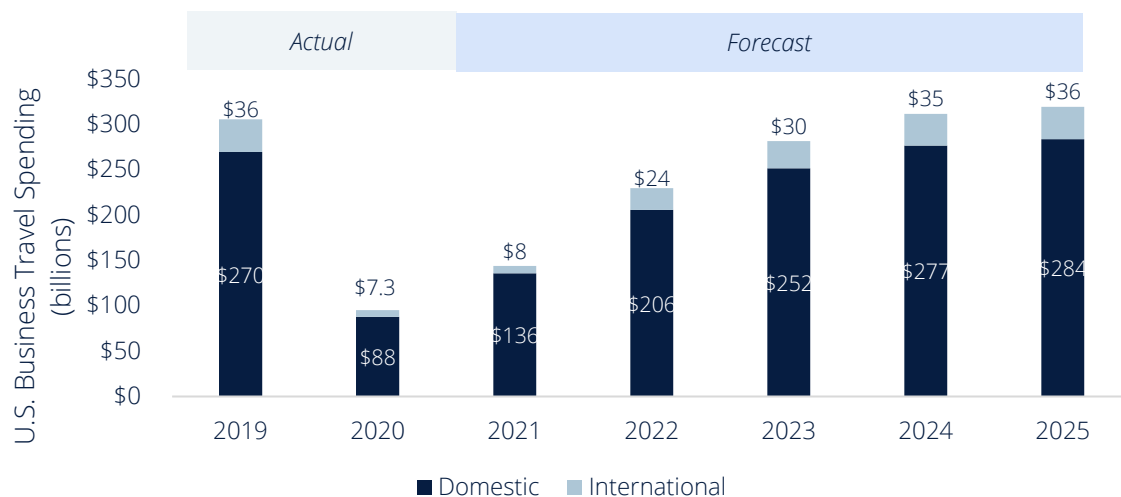
However, through the second half of 2021, as vaccination rates increased, signs of a recovery have become visible<sup>122</sup>. The major U.S. network carriers all reported improvements in business traffic on their 4<sup>th</sup> quarter 2021 earnings calls:

- American Airlines reported travel for small to medium sized businesses was roughly 80% recovered, compared to 40% for larger companies<sup>123</sup>
- United Airlines reported that business demand is expected to be approximately 40% below 2019 levels in February 2022, which is slightly later than anticipated due to the impact of the Omicron variant<sup>124</sup>
- Delta is also reporting similar trends, with business travel around 40% lower than the same period in 2019, and they expect demand to increase significantly as workers begin returning to offices over the course of 2022<sup>125</sup>.

Hilton reports that hotel room demand for small businesses is only 5% to 10% below 2019 levels, while large corporations are returning more slowly. Hilton estimates 70% of U.S. businesses are now back on the road, which is expected to increase further over the first quarter of 2022<sup>126</sup>.

The U.S. Travel Association forecasts U.S. business travel to return to 2019 levels in 2024, as shown in Figure 33.

Figure 33: Forecasted U.S. Business Travel Recovery<sup>127</sup>



<sup>122</sup> Source: Bloomberg, *Business Travel Has a Pulse, and It's Growing Stronger*, <https://www.bloomberg.com/opinion/articles/2022-01-21/industrial-strength-business-travel-has-a-pulse-and-it-s-growing-stronger-kyo0ik35>, accessed January 2022

<sup>123</sup> Source: Nasdaq, *American Airlines Earnings Call 2021 Q4 Transcript*, <https://www.nasdaq.com/articles/american-airlines-group-aal-q4-2021-earnings-call-transcript>, accessed January 2022

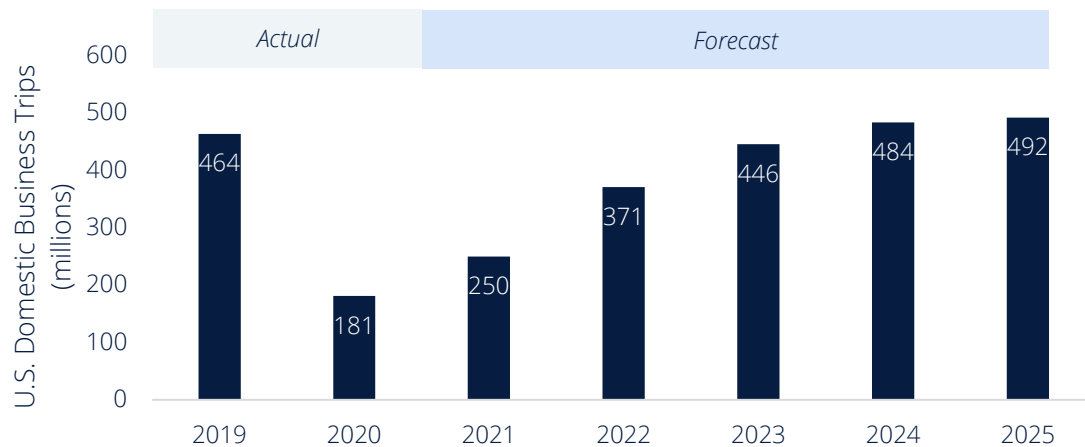
<sup>124</sup> Source: Market Beat, *United Airlines Earnings Call 2021 Q4 Transcript*, <https://www.marketbeat.com/earnings/transcripts/69048/>, accessed January 2022

<sup>125</sup> Source: The Motley Fool, *Delta Air Lines (DAL) Q4 2021 Earnings Call Transcript*, <https://www.fool.com/earnings/call-transcripts/2022/01/13/delta-air-lines-dal-q4-2021-earnings-call-transcri/?source=iedfolrf0000001>, accessed January 2022

<sup>126</sup> Source: Skift, *Hilton Gets a Surprising Boost from Business Travel*, <https://skift.com/2021/10/27/hilton-gets-a-surprising-boost-from-business-travel/>, accessed January 2022

<sup>127</sup> Source: U.S. Travel Association





The number of business travel visitors to New York City is forecasted to return to 2019 levels by the end of 2025 and early 2026, as shown in Figure 34.

Figure 34: New York City Business Visitor Outlook<sup>128</sup>



While video conferencing usage accelerated rapidly throughout the pandemic, it is not expected to materially change the amount of future business travel. In a recent Global Business Travel Association survey of 400 global businesses, 86% of respondents reported travel is needed for them to accomplish their business goals. This clearly shows the vital role business travel has and will continue to have in the future<sup>129</sup>.

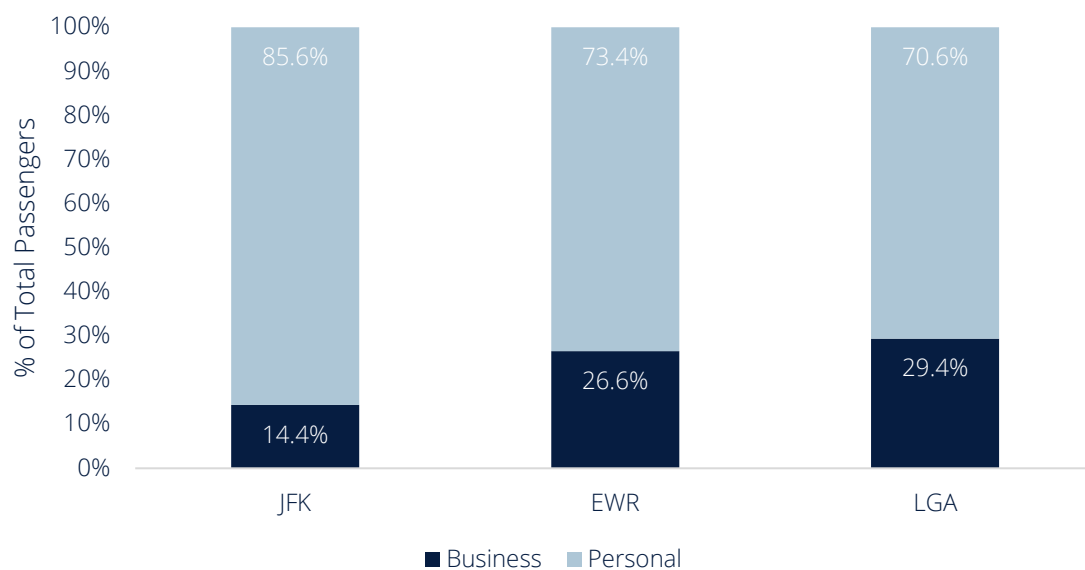
<sup>128</sup> NYC & Company 2020 Annual Report

<sup>129</sup> Source: Aircraft Interiors International, *Why business travel is expected to recover fully by 2024*, <https://www.aircraftinteriorsinternational.com/features/why-business-travel-is-expected-to-recover-fully-by-2024.html>, accessed January 2022

### Business Traffic at JFK

JFK has historically had the lowest proportion of business passengers of the other major New York airports. From 2015 to 2019, business travel accounted for between 11.6% and 17.5% of total JFK traffic each year, compared with 25.6% to 42.0% for LGA and 26.0% to 29.5% for EWR<sup>130</sup>, as shown in Figure 35.

Figure 35: New York Major Airport 2019 Trip Purpose<sup>131</sup>



The proportion of business traffic at JFK was slightly below the average for U.S. domestic trips in 2019, which were 20% business and 80% personal (leisure).<sup>132</sup> This means passenger demand at JFK is less dependent on business travel compared to EWR and LGA.

### Ethnic Community Travel

The New York CSA's international links are further underscored by the fact that in 2019 27.4% of the total population is foreign born, compared with 15.7% in the U.S.<sup>133</sup>. The makeup of this population is shown in Table 28.

<sup>130</sup> Source: Port Authority of New York & New Jersey, Annual Traffic Reports

<sup>131</sup> Source: Port Authority of New York & New Jersey, 2019 Airport Traffic Report

<sup>132</sup> Source: U.S. Travel Association, 2019 U.S. Travel and Tourism Overview

<sup>133</sup> Source: 2019 American Community Survey, US Census Bureau, *Table B05006 Place of Birth for the Foreign Born Population*, accessed January 2022

Table 28: Top 10 Birth Countries of Foreign-Born Residents in the New York CSA<sup>134</sup>

Rank	Country of Birth	Number of Residents in New York CSA	Percentage of Total Foreign- Born Population
1	Dominican Republic	668,141	10.7%
2	China	473,250	7.6%
3	India	411,951	6.6%
4	Mexico	301,797	4.8%
5	Jamaica	277,031	4.4%
6	Ecuador	256,285	4.1%
7	Colombia	203,505	3.3%
8	Haiti	179,578	2.9%
9	Guyana	169,023	2.7%
10	Philippines	157,672	2.5%
	Other	3,132,105	50.3%
	<b>Total</b>	<b>6,230,338</b>	

Most foreign-born residents in the New York CSA are of working age, with 47% of the New York City workforce comprised of immigrants<sup>135</sup>.

A combination of close connections with a population's country of origin increases air travel demand as visits with friends and family take place in both directions. Through 2021, the VFR market segment has been a leading component of passenger demand during the COVID-19 pandemic.<sup>136</sup> Having a large foreign-born population in the New York CSA therefore further enables passenger traffic recovery at JFK.

### Economic Outlook

As detailed previously, economic growth in the U.S., New York state, and the New York CSA has a large bearing on demand for passenger services at JFK. However, due to JFK's position as a global hub, growth in airline traffic is also highly dependent on the global economic outlook and the growth of other major economies.

### Global Economy

Table 29 shows forecast annual increases in national and regional GDP in both the short and medium term.

<sup>134</sup> Source: 2019 American Community Survey, US Census Bureau, *Table B05006 Place of Birth for the Foreign Born Population*, accessed January 2022

<sup>135</sup> Source: New York City Development Corporation, *Why NYC?*, <https://edc.nyc/why-nyc>, accessed January 2022

<sup>136</sup> Source: Investec, Aviation Market Snapshot Q4 2021, [https://www.investec.com/en\\_gb/focus/economy/aviation-market-snapshot-q4-2021.html](https://www.investec.com/en_gb/focus/economy/aviation-market-snapshot-q4-2021.html), accessed January 2022

Table 29: Historical and Forecasted Global Gross Domestic Product Growth Rates<sup>137</sup>

Region/Country	Average Annual Real GDP growth		
	Historical (2010-2019)	Forecasted (2021-2023)	Forecasted (2024-2030)
Emerging Asia <sup>a</sup>	6.3%	5.4%	4.4%
China	7.3%	5.2%	4.3%
Africa	3.9%	3.6%	3.4%
World	3.0%	3.8%	2.6%
Former Soviet Union	1.8%	3.5%	2.5%
Middle East	2.6%	3.9%	2.4%
Latin America	1.3%	2.0%	2.3%
United States	2.2%	3.2%	1.8%
Canada	2.2%	3.7%	1.7%
Europe	1.8%	3.3%	1.3%

a. Bhutan, Brunei, Cambodia, China, Fiji, Hong Kong, India, Indonesia, Kiribati, South Korea, Laos, Macau, Malaysia, Papua New Guinea, Philippines, Singapore, Solomon Islands, Taiwan, Thailand, Tonga, Vanuatu, Vietnam.

In the short term (2021 - 2023), growth rates are heavily influenced by the COVID-19 pandemic. In developed economies, a period of high economic growth is expected as countries recover from 2020's substantial fall in GDP due to lockdowns and other reductions in economic output.

Economic support packages put in place by governments in their response to the COVID-19 pandemic have enabled developed economies to rebound quickly as vaccination rates have increased and restrictions eased. However, GDP growth rate estimates have a high degree of uncertainty and are based on the current understanding of the course out of the COVID-19 pandemic, whereby vaccines and new treatments mean the threats posed to economic growth become less severe. Other challenges are also present within the global economy such as supply chain issues and resulting upwards pressure on inflation could also dampen growth during the recovery. Inflation also creates risk on a micro-economic scale, as it potentially impacts business' ability to budget for travel and could decrease the disposable income available for individual leisure travel.

From 2024 to 2030 the global economy is forecast to return to more typical growth trends, although growth will still be impacted from the effects of the COVID-19 pandemic. The average annual economic growth is forecast to reduce from an average annual rate of 3.0% per year from 2010 to 2019 to 2.6% from 2024 to 2030. The growth rate change is primarily caused by the slowdown of economic growth in China, with annual growth rates forecast to decelerate from an average of 7.3% per year from 2010 to 2019 to 4.3% from 2024 to 2030. Reduced growth rates in China were expected before the COVID-19 pandemic due to an ageing population, rising labor costs as well as the increasing impacts of U.S.-China trade tariffs<sup>138</sup>.

<sup>137</sup> Source: Real GDP Data downloaded from Oxford Economics subscription, accessed January 2022

<sup>138</sup> Source: China's Economic Rise: History, Trends, Challenges, and Implications for the United States, 25 June 2019, Congressional Research Service, <https://crsreports.congress.gov/product/pdf/RL/RL33534> , accessed January 2022.

However, in previous economic forecasts, growth in other regions such as Africa and Latin America was predicted to offset the lower growth rates in China meaning the world economy would not be as impacted. However, some degradation is now likely as developing nations continue to experience longer term economic scarring and a prolonged recovery from the COVID-19 pandemic although the magnitude and timeline remains uncertain.

### National Economy

Over the next decade, U.S. GDP growth is expected to see a healthy recovery after the COVID-19 pandemic. The most recent forecast by the Organization for Economic Cooperation and Development (OECD) forecasts an annual real U.S. GDP growth of 3.7% in 2022 and 2.4% in 2023<sup>139</sup>. The jobs market is set to rebound, especially over the next two to three years as positions lost through the COVID-19 pandemic are refilled. As a result, the unemployment rate is set to fall sharply as more people get back into work, coupled with many people leaving their jobs during the COVID-19 pandemic and exiting the workforce either temporarily or permanently. Deloitte estimates an average annual unemployment rate of 4.6% in 2022 and 4.2% in 2023<sup>140</sup>.

One of the biggest current economic challenges is rising inflation. The global supply chain has struggled to match the large amount of pent-up demand being released as the COVID-19 pandemic situation has improved, coupled with staffing issues during periods of high infection rates. Economists are still forecasting that the inflation increase will be temporary, peaking at the start of 2022 and falling back to more normal inflation levels of around 2.0% by 2023. A potential catalyst for increasing inflation is the sharp increase in personal savings accrued during 2020 in the U.S. Overall, U.S. residents have saved over \$1.6 trillion more than forecast during the COVID-19 pandemic and although a portion of this may be kept within savings, a large proportion is expected to be spent as more of the economy opens<sup>141</sup>.

### GDP and Passenger Growth

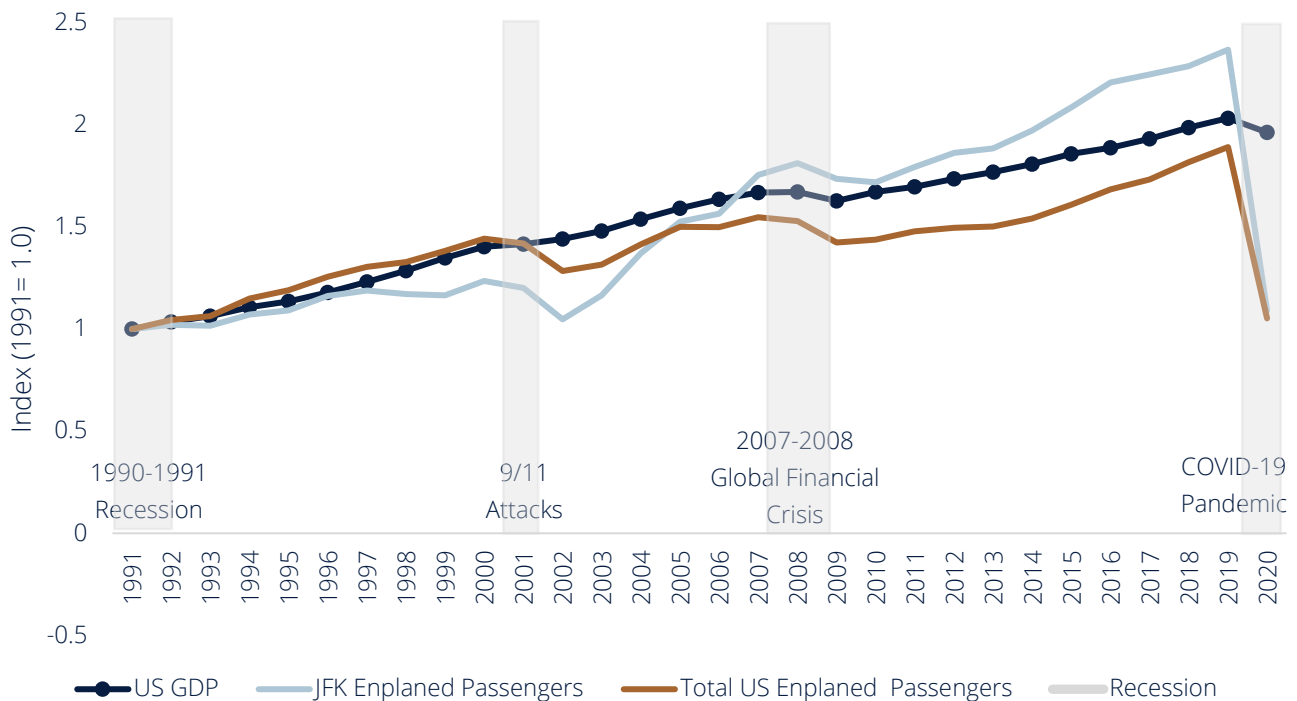
Since at least 1991 passenger traffic growth in the U.S. and at JFK have correlated with trends in GDP, including decreases during the 1990 - 1991, 2007 - 2008 Global Financial Crisis and 2020 COVID-19 pandemic recessions. From 1989 through 2019, GDP increased at an average of 2.6% per year, while the number of enplaned passengers increased at averages of 2.3% nationally and 3.1% at JFK. Figure 36 tracks the correlation between GDP growth and passenger enplanements at JFK and the U.S. from 1991 to 2020.

<sup>139</sup> Source: OECD, Economic Outlook, Volume 2021 Issue 2, <https://www.oecd-ilibrary.org/sites/36935508-en/index.html?itemId=/content/component/36935508-en>, accessed January 2022.

<sup>140</sup> Source: Deloitte United States Economic Forecast, 4<sup>th</sup> Quarter 2021, <https://www2.deloitte.com/us/en/insights/economy/us-economic-forecast/united-states-outlook-analysis.html>, accessed January 2022

<sup>141</sup> Source: Deloitte United States Economic Forecast, 4<sup>th</sup> Quarter 2021, <https://www2.deloitte.com/us/en/insights/economy/us-economic-forecast/united-states-outlook-analysis.html>, accessed January 2022

Figure 36: Trends in U.S. Gross Domestic Product and Enplaned Passengers<sup>142</sup>



Passenger enplanements at JFK decreased by 1.0% from 2007 to 2009 during the 2007 – 2008 Global Financial Crisis. In the U.S., the passenger enplanement decline was 8.1% during the same period. During the nine years following the recession (2010 – 2019), JFK's passenger enplanements grew by 37.8%, outpacing the U.S. enplanement growth of 31.5%.

During the COVID-19 pandemic, enplaned passengers at JFK decreased by 54.0% compared to 2019 levels, larger than the decrease in the U.S. of 44.4%. The sharper decline at JFK was caused by its relatively high proportion of international traffic.

While always subject to economic cycles, the size and robustness of the U.S. economy have helped buttress the country against major economic downturns. While annual GDP did not decline in 2000 to 2001, quarterly decreases of 0.3% and 0.4% (Q4 2000 - Q1 2001, and Q2 2001- Q3 2001 respectively) happened<sup>143</sup>. JFK's resulting traffic loss was less than the U.S. at 1.7% versus 2.7%. Passenger traffic at JFK returned to pre-crisis levels in 2004, compared to 2005 for the U.S.

Since 1945, the average U.S. recession has lasted approximately 11 months<sup>144</sup>. The scale and scope of a recession determines its effect on passenger demand across the country or specific

<sup>142</sup> Source: Real US GDP Data downloaded from Oxford Economics subscription, accessed December 2021

US and JFK Enplaned Passengers US Department of Transportation, Federal Aviation Administration, Terminal Area Forecast Summary, <https://taf.faa.gov/>, accessed January 2022

<sup>143</sup> Source: US Department of Commerce, Bureau of Economic Analysis, Real GDP Regional Data, [https://apps.bea.gov/iTable/index\\_regional.cfm](https://apps.bea.gov/iTable/index_regional.cfm), accessed January 2022

<sup>144</sup> U.S. Business Cycle Expansions and Contractions, National Bureau of Economic Research, <https://www.nber.org/cycles.html>, accessed September 2019.

regions. For example, from 2008 to 2009, during the 2007 – 2008 Global Financial Crisis recession, U.S. GDP fell by 2.6%. The drop led to a 7.0% decrease in enplaned passengers across the U.S. between 2008 and 2009, but JFK's passenger traffic only declined by 4.2%. The smaller drop can be attributed to JFK's large international route network meaning passenger traffic at JFK is less reliant on U.S. GDP alone. Key country markets from JFK such as those in Asia and Latin America experienced a smaller and shorter decrease in GDP compared to the U.S. allowing demand for air travel in those countries to recover quickly. As a region, Asia did not experience a recession with GDP continuing to grow throughout 2007 - 2009, driven by good performance by large economies such as China. In Latin America, although a small decline in GDP was experienced in 2009, it recovered quickly compared to other regions and returned to pre-crisis levels in 2010. As global GDP started to increase again through 2009, JFK passenger numbers returned to pre-crisis levels in 2012 while total U.S. passenger traffic did not recover to pre-recession levels until 2015.

### New York State Economy

The large and varied economy of New York state includes a wide range of business sectors, including key contributors like financial services, technology, and real estate. In total, New York state comprised 7.7% of total U.S. GDP in 2020 and is the third largest state economy behind California and Texas. If New York state were a country, it would be the 10<sup>th</sup> largest economy in the world.

Economic growth in New York state was strong before the COVID-19 pandemic and its annual GDP growth slightly exceeded the U.S. average growth rate in 2019 (2.5% vs 2.3%). In addition, unemployment in New York state decreased from a peak of 8.7% in 2010 (following the 2007 – 2008 Global Financial Crisis recession) to 3.8% in 2019, compared with 9.6% to 3.7% in the U.S.<sup>145</sup>

Over the last decade, New York state's economic growth has been broad-based, experiencing job gains in major industry sectors, such as healthcare (+138,400), professional and technical services (+138,000), education (+105,000), construction (+100,000), transportation and warehousing (+59,000), and accommodation and hospitality (+43,000). Combined, these six sectors accounted for approximately 82% of employment gains in New York state over the last 10 years<sup>146</sup>.

The COVID-19 pandemic has had a disproportionate effect on the New York state economy as lockdowns and restrictions have heavily impacted major employment sectors in the New York state economy. For much of 2020 and 2021, restaurants, cafés, leisure attractions, and theaters were closed or operated under government-mandated operating restrictions. Also, working from home and out-migration have impacted city center economies as the spending from workers has been removed. Therefore, New York state GDP contracted 5.0% in 2020, compared to 3.4%

<sup>145</sup> Source: US Department of Commerce, Bureau of Economic Analysis, Real GDP Regional Data, [https://apps.bea.gov/iTable/index\\_regional.cfm](https://apps.bea.gov/iTable/index_regional.cfm), accessed January 2022

<sup>146</sup> Source: Data downloaded from US Census Bureau

in the U.S.<sup>147</sup>. However, as has been seen from past economic downturns, New York state has a resilient economy with GDP and employment recovering relatively quickly. After the 2007 - 2008 Global Financial Crisis, GDP returned to pre-crisis levels seen in Q1 2007 by Q3 2009 (just over 2 years). The recent COVID-19 pandemic related downturn created a short, sharp recession but New York GDP had already exceeded Q4 2019 (pre-crisis) levels by Q3 2021<sup>148</sup>, as shown in Figure 37.

Figure 37: New York State Quarterly GDP from 2005 to 2021<sup>149</sup>



### New York CSA Economy

The New York CSA has the largest metro area economy in the U.S. with a gross regional product (GRP)<sup>150</sup> of \$2.1 trillion in 2020, as shown in Figure 38. It is 56.6% larger than the next largest region, the Los Angeles CSA.

<sup>147</sup> Source: Data downloaded from Oxford Economics subscription, accessed December 2021

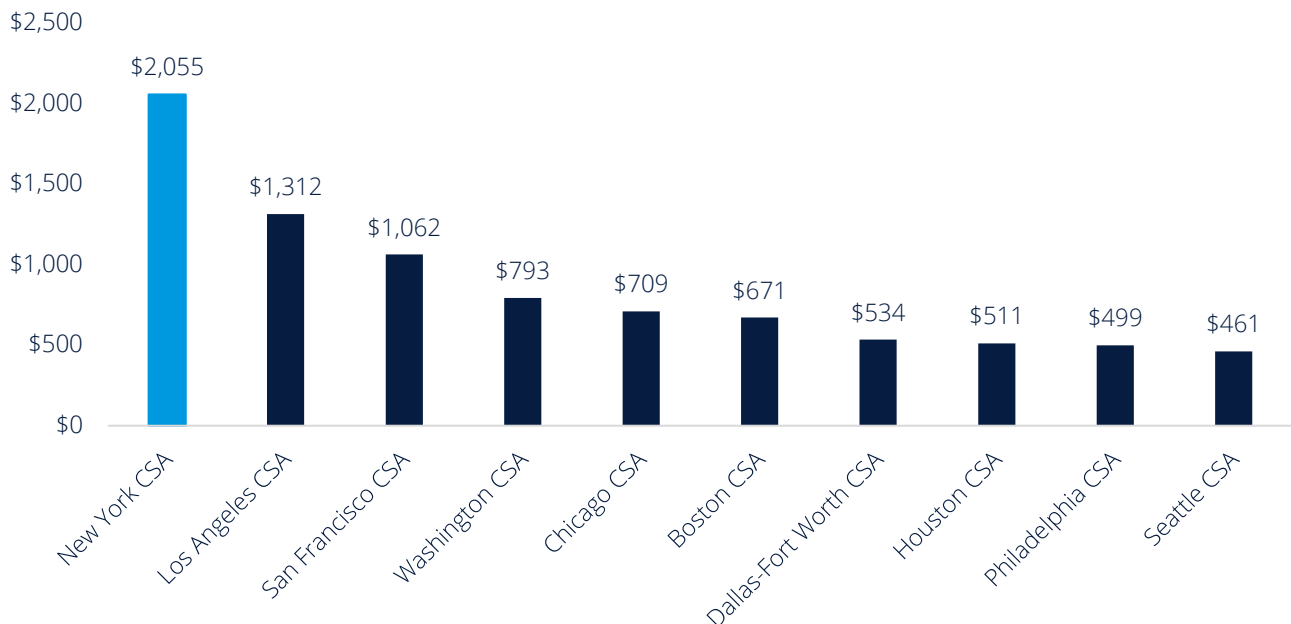
<sup>148</sup> Source: US Department of Commerce, Bureau of Economic Analysis, Real GDP Regional Data, [https://apps.bea.gov/iTable/index\\_regional.cfm](https://apps.bea.gov/iTable/index_regional.cfm), accessed January 2022

<sup>149</sup> Source: US Department of Commerce, Bureau of Economic Analysis, Real GDP Regional Data, [https://apps.bea.gov/iTable/index\\_regional.cfm](https://apps.bea.gov/iTable/index_regional.cfm), accessed January 2022

<sup>150</sup> Note: Gross regional product (GRP) is the measure of the market value of all goods and services produced in a particular region or area of a country over a year. This differs from gross domestic product (GDP), which measures the value of goods and services produced for a country as a whole over a year.



Figure 38: 2020 Gross Regional Product of Top 10 CSAs (billions)<sup>151</sup>



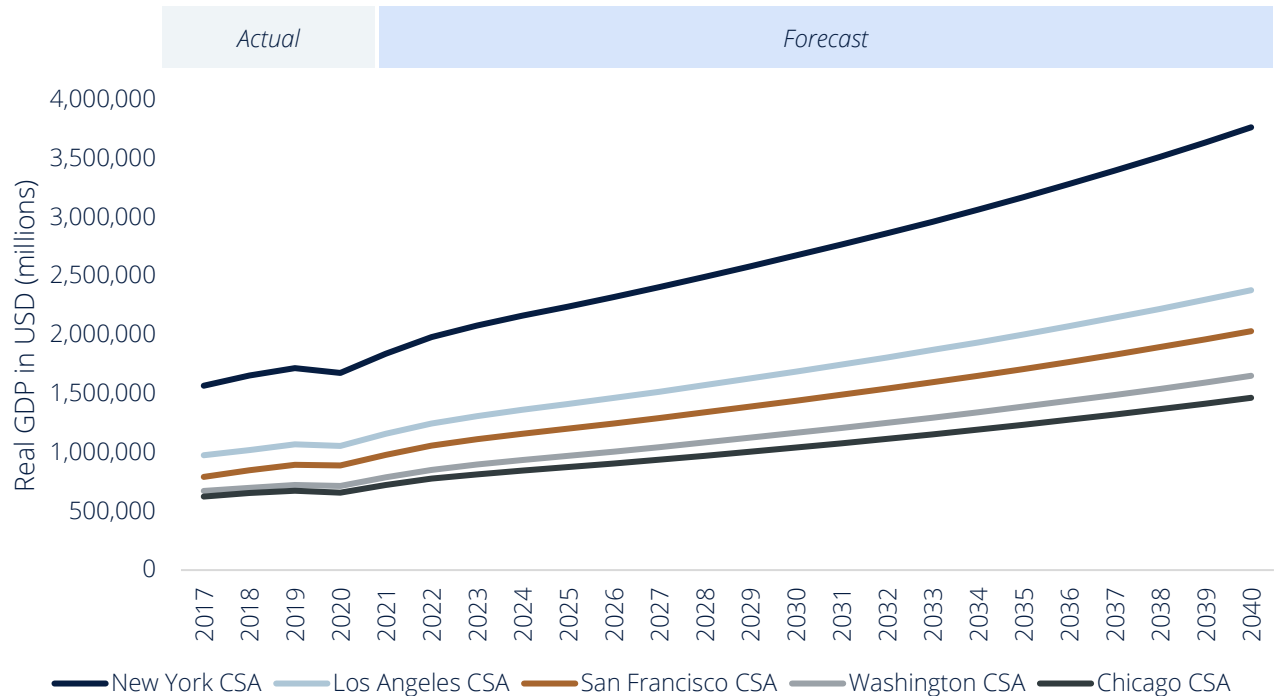
The top five industries driving growth in New York CSA employment between 2010 and 2019 were professional and technical services (+197,000 additional workers), healthcare (+179,000), construction (+148,000), education (+126,000), and transportation and warehousing (+109,000)<sup>152</sup>. The New York CSA was slightly less affected by employment loss in 2020 than the state, with the number of people employed in nonagricultural industries decreasing by 9.2%, compared to 10.3% across New York state.

As shown in Figure 39, despite the considerable downturn in GDP caused by the COVID-19 pandemic, the New York CSA is forecast to rebound strongly, retaining its dominance as the region with the largest gross regional product in the U.S. through at least 2040.

<sup>151</sup> Source: Woods and Poole Economics, accessed June 2021

<sup>152</sup> Source: U.S. Census Bureau

Figure 39: Forecast Gross Regional Product for Top 5 CSA Regions<sup>153</sup>



Annual growth rates of 3.5% are forecast from 2024 to 2040 in the New York CSA. Only the Washington and San Francisco CSAs have a slightly higher forecasted annual growth rate of 3.6%.

The New York CSA's inherent strengths and resilience have already enabled a strong rebound from the COVID-19 pandemic. The gross regional product of the New York CSA will exceed 2019 levels of \$1.7 trillion in 2021 after a decrease in GDP of 2.5% in 2020. An estimated gross regional product of \$1.8 trillion is expected in 2021, which is 7.1% higher than 2019<sup>154</sup>.

<sup>153</sup> Source: Euromonitor, accessed October 2021

<sup>154</sup> Source: Euromonitor, accessed October 2021



## 9. Airline Traffic Forecasts

### Key Takeaways

1. ASM forecasts JFK domestic passenger traffic returning to 2019 levels in 2024 and international traffic levels returning to 2019 levels in 2025
2. Total JFK passenger traffic is forecasted to reach 64.5 million passengers in 2025 and 119.7 million passengers at the end of the forecast period in 2060. The 2019 – 2060 CAGR is 1.6%, which is lower than the 1991 – 2019 CAGR of 3.5% (that included the effects of the 9/11 Attacks and 2007 – 2008 Global Financial Crisis)
3. Long-term growth in JFK's constrained environment achieved through aircraft upgauging, higher load factors, more efficient slot usage, and additional departures outside slot control hours
4. Passenger enplanements in Terminal 6 are forecasted to be 2.0 million in 2025 and 6.5 million at the end of the forecast period in 2060
5. Terminal 6 is forecasted to remain below its peak operating capacity of 8.5 million passenger throughout the forecast period

This section reviews the methodologies, key assumptions, limitations, and results of the ASM traffic and aircraft movement forecasts for JFK and Terminal 6.

Two different forecasting methodologies were used to produce the long-term forecast through to 2060. A top-down approach for the New York CSA airports using high-level growth rate assumptions and market share splits to forecast future growth, and a highly detailed bottom-up and econometric approach for JFK, where the medium-term forecast was produced using a by-route-by-carrier market assessment followed by a long-term GDP correlated forecast.

### Top-Down Forecast

#### Summary

The top-down forecast is designed to produce an annualized enplanements forecast for each of the New York CSA airports (with HPN, ISP & SWF grouped as 'Others') for the period 2021 to 2025, split by domestic and international enplanements. Passenger enplanement data<sup>155</sup> from 2002 to 2020 served as the historical baseline for applying high-level traffic growth assumptions to forecast future passenger traffic.

The top-down forecast results showed New York metro area traffic returning to 2019 levels of domestic enplanements by 2023 and international enplanements by 2024, with JFK forecasted to reach 2019 levels of both domestic and international enplanements by 2024.

#### Methodology

The top-down forecast applies high level assumptions across the New York CSA airports, including historical market shares for each airport, to forecast future traffic allocation for domestic and international traffic by airport.

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<sup>155</sup> Source: U.S. DoT T100



The 2021 enplanements forecast was calculated by applying monthly load factors to the published airline seat totals for each month of 2021<sup>156</sup>. The capacity volumes were split by airport for both domestic and international movements. Actual year-to-date results were used where available. The remaining months were estimated based on historical load factors and market conditions.

The annual growth rates for 2022 to 2025 that were applied to all New York CSA airports is shown in Table 30.

**Table 30: Top-Down Forecast Assumed Growth Rate<sup>157</sup>**

	2022	2023	2024	2025
Domestic	75.0%	6.0%	3.0%	2.0%
International	55.0%	20.0%	12.0%	6.0%

The growth rate assumptions were developed using the latest forecasts and analyses from industry organisations and authorities such as IATA, Boeing, and others based on their relevance to the New York CSA's strengths and importance as a leading global business and leisure travel market and the appropriate regional comparators. ASM used these forecasts as references when applying its own expertise and experience to set the growth rate assumptions.

The region's resilience has historically led to faster traffic recovery in the New York CSA than other regions, which was conservatively applied to the top-down growth rates at a pace consistent and suitable for the New York CSA market relative to overall global and regional forecasts.

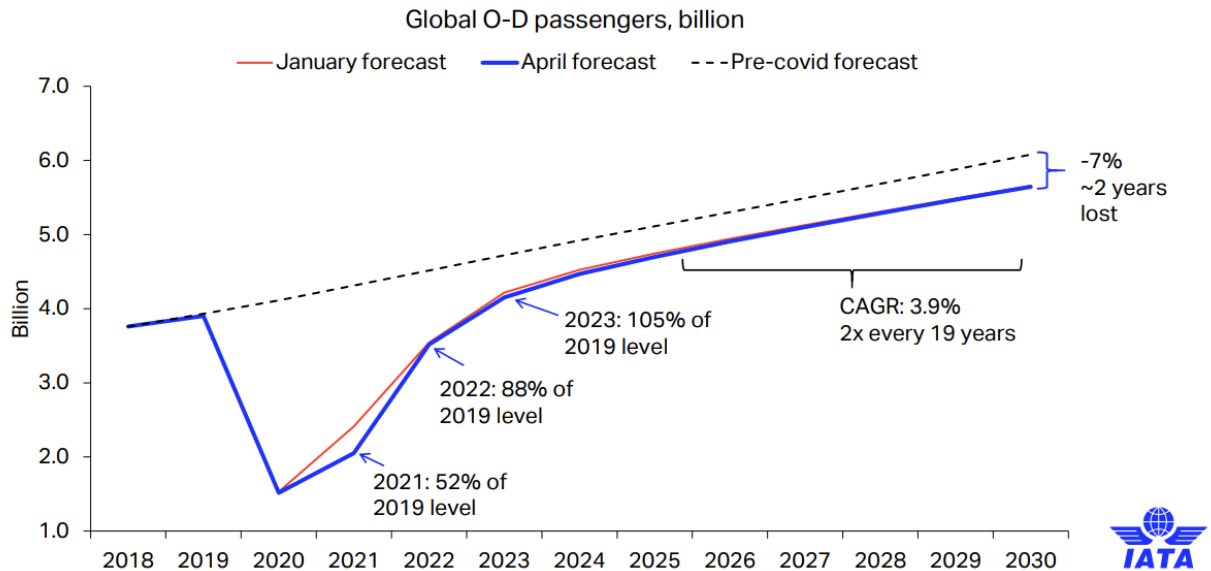
On a global level, IATA had forecasted a return to 2019 levels of passenger numbers by 2023, as shown in Figure 40.

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<sup>156</sup> Source: Sabre Market Intelligence per published schedules as of September 2021.

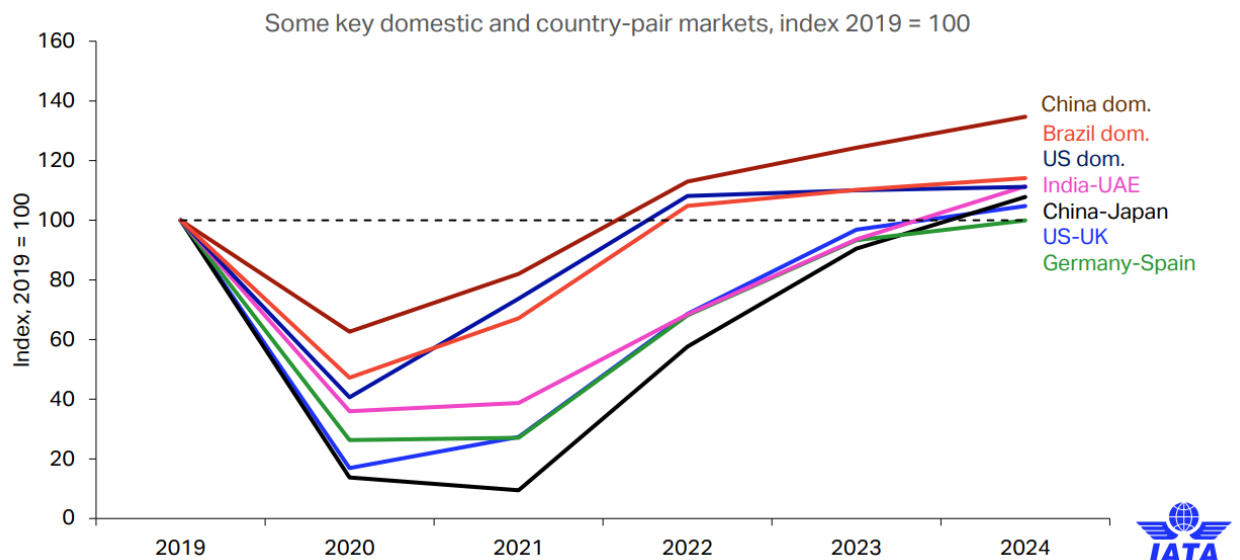
<sup>157</sup> Source: ASM Forecast

Figure 40: IATA Global Passenger Forecast, April 2021 <sup>158</sup>



IATA forecasted that the U.S. domestic market would return to 2019 levels in 2022 before continuing a slow growth trend, as shown in Figure 41.

Figure 41: IATA Global Passenger Forecast, April 2021 <sup>159</sup>

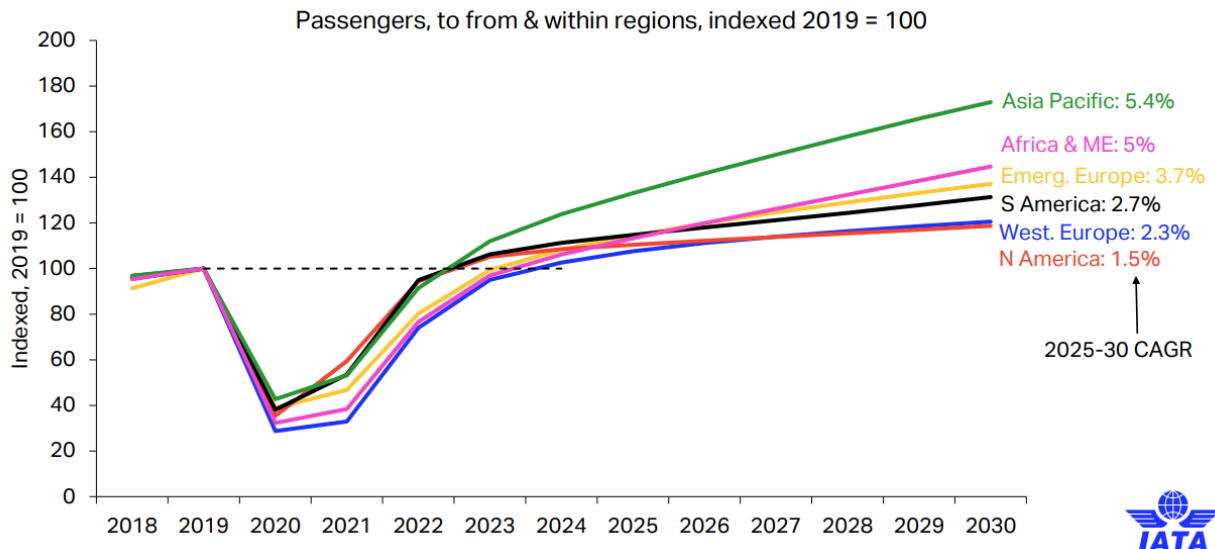


North American traffic was forecast to reach 2019 levels in early 2023 and subsequently experiencing slow growth, as shown in Figure 42.

<sup>158</sup> Source: IATA Covid-19 Recovery Report May 2021 (latest available when ASM forecast was prepared)

<sup>159</sup> Source: IATA Covid-19 Recovery Report May 2021 (latest available when ASM forecast was prepared)

Figure 42: IATA Regional Recovery Rate Forecast, April 2021 <sup>160</sup>



The IATA forecast was conducted in April 2021 during a period of optimism for the summer 2021 season and before the Delta and Omicron variants of COVID-19 impacted passenger demand. As a result, actual passenger demand has been lower than IATA predicted.

Boeing, on a global level, forecasted a return to 2019 levels for<sup>161</sup>:

- Domestic passenger traffic by 2022
- Regional and international traffic by 2023
- Longhaul international by 2024

While additive to the forecasting process, aircraft manufacturer forecasts are often optimistic, so the Boeing forecast was given less weighting in setting the top-down forecast growth rate assumptions.

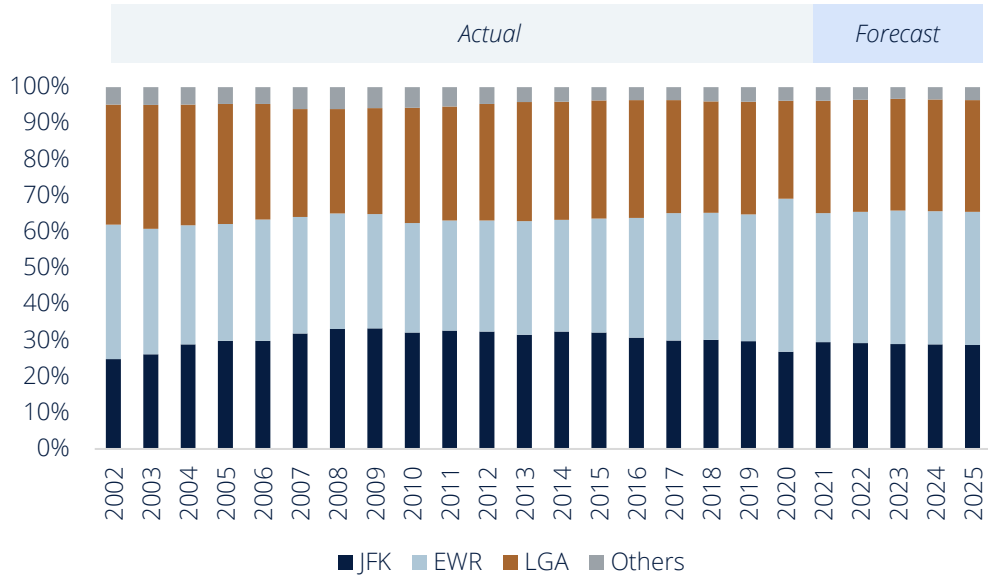
### New York CSA Airport Market Shares

The historical and forecasted market share split between the New York CSA airports is shown in Figure 43 (domestic) and Figure 44 (international).

<sup>160</sup>Source: IATA Covid-19 Recovery Report May 2021(latest available when ASM forecast was prepared)

<sup>161</sup> Source: Boeing 2021 Commercial Market Outlook

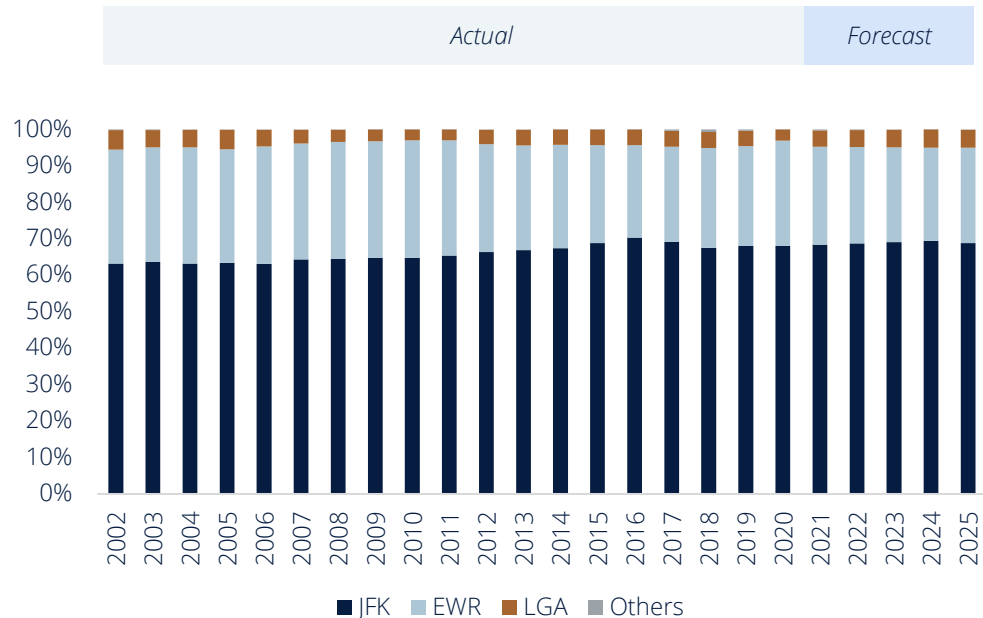
Figure 43: Market Share and Share Change in Domestic Enplanements<sup>162</sup>



	Actual		Forecast				
	2019	2020	2021	2022	2023	2024	2025
JFK	29.8%	26.9%	29.5%	29.2%	29.0%	28.9%	28.8%
EWR	35.1%	42.3%	35.7%	36.3%	36.9%	36.8%	36.8%
LGA	31.2%	27.0%	31.1%	31.0%	30.9%	30.9%	30.9%
Others	4.0%	3.8%	3.7%	3.5%	3.2%	3.4%	3.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

<sup>162</sup> Source: Actual – U.S. DoT T100, Forecast – ASM Forecast

Figure 44: Market Share and Share Change in International Enplanements<sup>163</sup>



	Actual		Forecast				
	2019	2020	2021	2022	2023	2024	2025
JFK	68.0%	68.0%	68.4%	68.7%	69.1%	69.5%	68.9%
EWR	27.4%	28.9%	26.9%	26.4%	26.0%	25.5%	26.1%
LGA	4.3%	3.1%	4.5%	4.6%	4.8%	5.0%	4.9%
Others	0.3%	0.0%	0.3%	0.2%	0.1%	0.0%	0.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Market conditions before, during, and assumed after the COVID-19 pandemic do not indicate a material change in the market share split between the New York CSA airports either domestically or internationally. Therefore, the forecasted market share splits between JFK, EWR, LGA and other New York CSA airports in the top-down forecast are largely based on historical percentages, primarily in the years immediately preceding the COVID-19 pandemic.

JFK's domestic share was 29.8% in 2019 and remains within a percentage point of that figure throughout the forecast period. In 2020, the sharp reduction in international service relative to domestic disproportionately affected JFK, but that condition is not expected to persist.

JFK's international share was 68.0% in 2019 and is expected to increase slightly (approximately 1.0 – 1.5 percentage points) during the forecast period, although the change does not necessarily suggest a pending structural change in international passenger traffic distribution across the New York CSA airports.

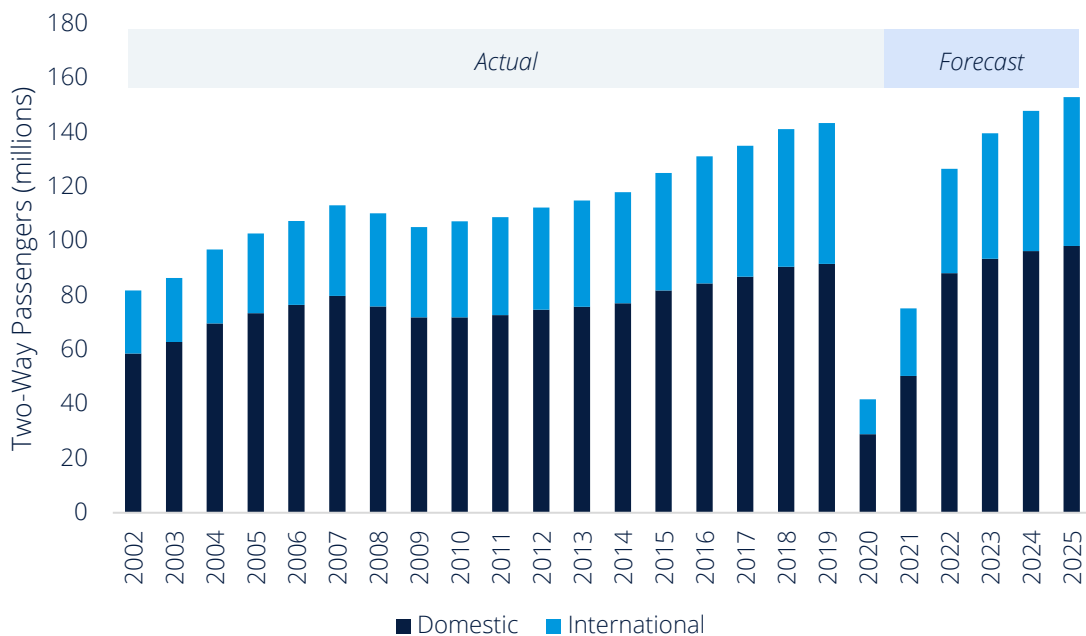
<sup>163</sup> Source: Actual – U.S. DoT T100, Forecast – ASM Forecast



## Results

The New York CSA market recovery is already demonstrating the region's historical resilience, and ASM's forecasts that JFK's passenger enplanements will return to 2019 passenger levels by the end of 2024. Domestic traffic is recovering faster and is expected to reach 2019 levels in 2023. International traffic is recovering more slowly due to travel restrictions and anticipated to reach 2019 levels in late 2024 or early 2025. EWR and LGA are anticipated to reach 2019 passenger enplanement levels earlier than JFK due to the larger proportion of domestic traffic at these airports that are less impacted by international travel restrictions. Figure 45 summarizes the top-down forecast results and Figure 46 shows the results by airport.

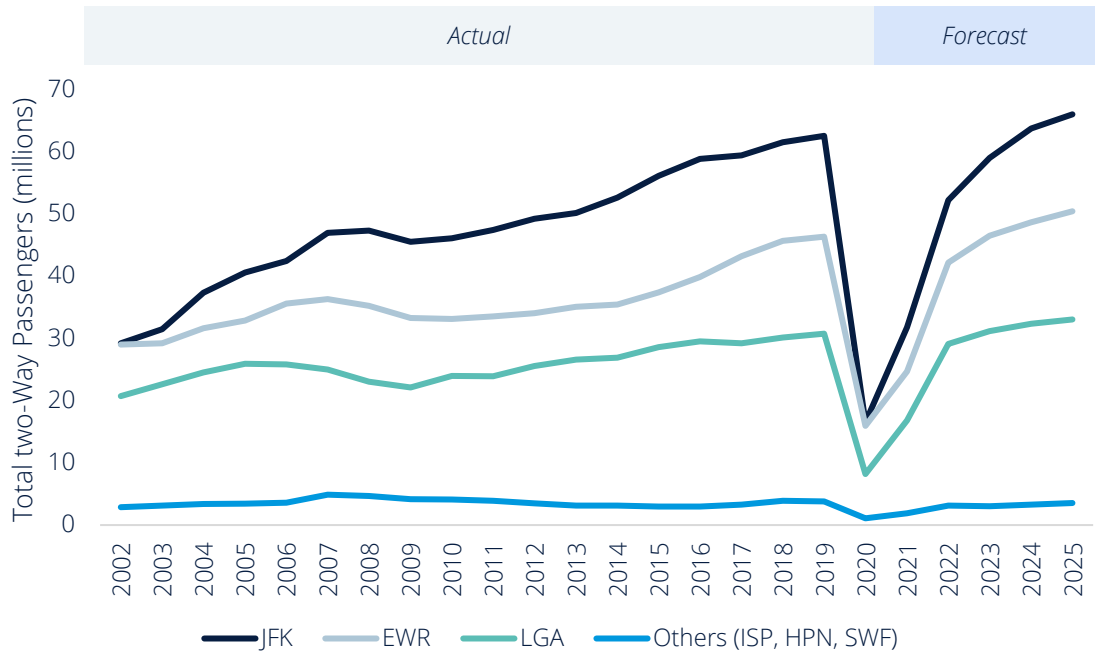
**Figure 45: Top-Down Forecast Results for New York CSA Airports (millions)<sup>164</sup>**



	Actual				Forecast				
	2002	2010	2019	2020	2021	2022	2023	2024	2025
Domestic	58.6	71.9	91.6	28.9	50.4	88.2	93.5	96.3	98.2
International	23.2	35.3	51.9	12.9	24.8	38.5	46.2	51.7	54.8
<b>Total</b>	<b>81.8</b>	<b>107.3</b>	<b>143.5</b>	<b>41.7</b>	<b>75.2</b>	<b>126.7</b>	<b>139.6</b>	<b>148.0</b>	<b>153.0</b>

<sup>164</sup> Source: Actual – U.S. DoT T100, Forecast – ASM Forecast

Figure 46: Top-Down Forecast Results by Airport<sup>165</sup>



	Actual				Forecast				
	2002	2010	2019	2020	2021	2022	2023	2024	2025
JFK	29.2	46.1	62.5	16.5	31.8	52.2	59.0	63.7	66.0
EWR	29.0	33.1	46.4	15.9	24.7	42.2	46.5	48.6	50.4
LGA	20.7	23.9	30.7	8.2	16.8	29.1	31.1	32.4	33.0
Others	2.9	4.1	3.8	1.1	1.9	3.1	3.0	3.3	3.6
Total	81.8	107.3	143.5	41.7	75.2	126.7	139.6	148.0	153.0

## Bottom-Up & Econometric Forecast

### Summary

The bottom-up forecast provides a highly detailed forecast of JFK passenger traffic on a route-by-route, carrier-by-carrier basis through 2026. The process involves analyzing every scheduled route operating at JFK by airline, using historic changes to annualized movements, seats per movement, and load factors to forecast future annual traffic and capacity. Each airline's change in fleet mix, route network recovery and strategy, and source market conditions are applied to each route.

The longer-term period from 2027 to 2060 was forecasted on an econometric basis using a GDP regression against forecasts obtained from Oxford Economics.

<sup>165</sup> Source: Actual – U.S. DoT T100, Forecast – ASM Forecast



### Bottom-Up Methodology

For 2021, the first year of the bottom-up, the full year of published schedules and capacity published by the airlines was utilized, applying a load factor assumption to the annual movements and capacity figures for each route and airline. The annual average load factor is forecasted using a combination of known historic load factors (for the months January – August 2021) and expectations of market conditions in the later months of 2021.

For 2022, the full year of flight schedules and capacity had not been published at the time of the forecast. While most airlines had put schedules out for sale through to September 2022, the actual capacity the carriers will fly is still being decided inside of one to two months before operation. Therefore, the total anticipated 2022 capacity was estimated based on plan vs actual schedules in 2021 and historical patterns for each airline on every JFK route. The airline's evolving fleet mix, travel restrictions, airline slot holdings, and other factors were also considered.

The historic data as well as 2021 and 2022 forecasts were used to conservatively forecast movements, average seats per movement, and load factor annually for 2023 to 2026. While some routes saw growth, others remained flat, and some declined during the forecast period. As is normal in the dynamic airline environment, strong routes received additional capacity through a combination of more frequency, larger aircraft, or operating more months of the year. Weaker routes lost capacity or were cancelled outright.

JFK's slot limitations were considered as part of this process, where routes with increasing passenger traffic biased toward growing using larger aircraft and/or higher load factors rather than frequency. In some cases, slot limitations prevented capacity growth on high performing routes.

To determine the seats per movement, known and anticipated fleet mix changes were analyzed on an airline-by-airline basis. Existing and planned airline fleets have undergone significant changes over the past couple of years because of the COVID-19 pandemic, B737 MAX grounding, and other factors. The typical age of the aircraft types being utilized at JFK was also compared with the airline's order books to understand the balance between aircraft retirements, replacements, and growth during the bottom-up period.<sup>166</sup>

### Fleet Changes

The U.S. carriers have implemented substantial fleet changes in retiring older aircraft types and using existing large orders to backfill in numbers and update in efficiency and capability. The resulting fleet mix was analyzed for each carrier individually.

Delta, for example, is expected to retire all or most of its B757-200, B757-300, B717, B767-300ER, and B767-400ER aircraft during the bottom-up forecast period. All these aircraft types are in scheduled operation at JFK. In some cases, the replacement aircraft had more or fewer seats than the retiring aircraft based on the dynamics of each individual route including historic

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<sup>166</sup> The primary sources for fleet information were Aviation Week Fleet Discovery and CAPA Fleet Database.



load factors, passenger demand trends, flight distance, and overall market suitability. The approach used to incorporate these changes for Delta into the forecast is shown in Table 31.

**Table 31: Sample Aircraft Variant Replacement<sup>167</sup>**

Airline	Retiring		Replacement		Markets Impacted
	Aircraft Type	Seats	Aircraft Type	Seats	
Delta	B757-200	199	A321neo	194	SFO, SEA
Delta	B757-200	168	A320-200	157	SAN
Delta	B757-200	168	B737-900ER	190	PDX, PHX, SLC
Delta	B757-300	199	A321neo	194	AUA, SXM, STT, MEX, BOG
Delta	B717	110	A220-300	130	DTW
Delta	B767-300ER	226	A321neo	194	SFO, KEF
Delta	B767-300ER	226	A330-900	281	ACC, MXP, MAD, GRU, LIS, VCE
Delta	B767-300ER	226	A330-200	234	BRU, PRG, EDI, DSS
Delta	B767-400ER	238/246	A330-900	281	LHR, ZRH, BCN, NCE

JetBlue operates a relatively young fleet so the impact of retirements and replacements will be minimal during the bottom-up forecast period. By the end of the bottom-up forecast period, JetBlue is likely to start retiring the oldest of its A320-200 aircraft, which have been assumed to be replaced on the Tampa and San Juan markets with either newer A320 neo aircraft or up-gauged to the A321.

Non-U.S. airlines were assessed on an individual basis since a smaller portion of their fleets are applicable to JFK service. For example, British Airways is expected to operate the B777-9X to JFK when it enters the fleet in 2024. That same year, Etihad and Air France will likely deploy their A350s to JFK when they enter service for both airlines.

### New and Cancelled Routes

The forecast includes the cancellation of some weaker performing markets. JFK's slots are highly valuable, so most airlines will replace rather than remove flights from JFK, limiting the risk of overall traffic degradation. Cancelling or reducing capacity on poor performing routes, increasing capacity on stronger routes, and adding new routes are all normal activities as airline route networks evolve. The JFK routes cancelled and added for the bottom-up forecast are shown in Table 32.

<sup>167</sup> Source: Sabre Market Intelligence and ASM Forecast

Table 32: JFK Cancellations and Additions<sup>168</sup>

Status	2022	2023	2024	2025	2026
Cancelled	ANC (Delta)	CNF (Eastern)	ATH (American)	DSS (Air Senegal)	
	ANU (Delta)	BOG (JetBlue)	EYW (American)	FLL (American)	
	BZN (Delta)	BZN (JetBlue)	KRK (LOT)		
	BUD (LOT)	BGI (Caribbean)	LFW (Ethiopian)		
	DBV (Delta)	CLO (Avianca)	BNA (Republic)		
	LGW (British Airways)	GYE (Eastern)	PTP (Air France)		
	LAX (Alaska)	JAC (American)	SJO (JetBlue)		
	MVY (Delta)	MXP (Neos)	BWI (Air Senegal)		
	SAT (American)	SJD (American)			
	SJO (Avianca Costa Rica)				
	HDN (JetBlue)				
	NRT (Japan Airlines)				
	DCA (Delta)				
New	BDA (American)	BER (Delta)			
		SNN (Delta)			
		Undefined			
		European City (JetBlue)			

Although the cancellation list looks long in 2022 and 2023, it mostly involves cancelling temporary or low-volume air services introduced during the COVID-19 pandemic as alternatives to more established destinations that were not accessible. In London and Tokyo, the cancellations reflect airport consolidation with British Airways from LGW into LHR and Japan Airlines from NRT into HND.

The backfilling of frequency and capacity on existing routes was prioritized in the bottom-up forecast over the introduction of new routes in the bottom-up forecast. However, if airlines ended up applying more freed up capacity to new routes the forecast results would not be materially impacted as only the destination mix would change.

Airlines have taken on substantial debt during the COVID-19 pandemic, which will carry weight on balance sheets for many years. The resultant impact is that the airlines will be prioritizing markets with the highest revenue-generating capabilities to optimize their cash-flow, and lowest risk to maximize the potential for profits. While passenger volume recovery is an important metric from an airport perspective, in some cases it will be different from a route's financial performance that affects airline network decision making.

<sup>168</sup> Source: ASM Forecast

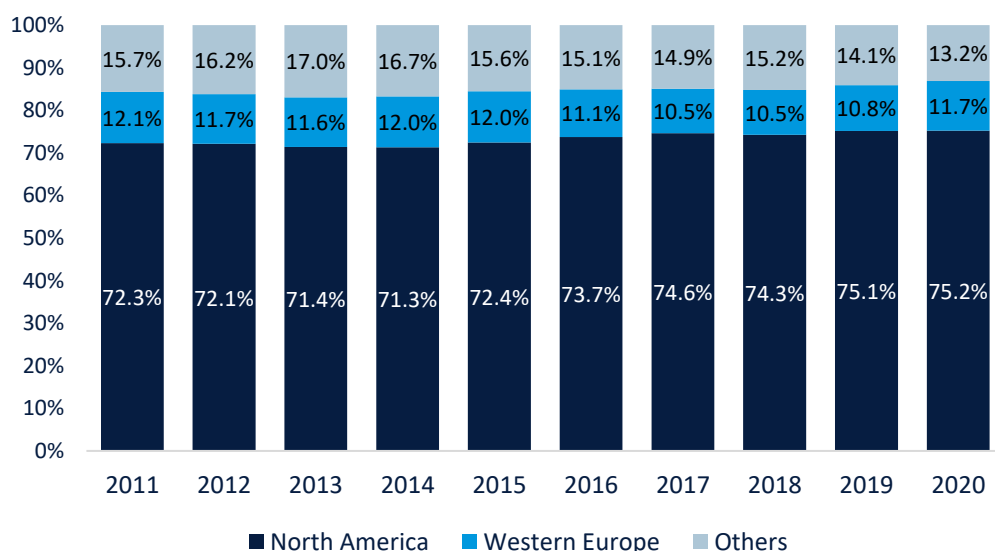
## Long-Term Methodology

The bottom-up forecast is completed at a highly granular level of detail that makes predictions beyond a five-year horizon all but impossible under normal circumstances, let alone the highly volatile conditions of the COVID-19 pandemic. Forecasts of airline fleet mix, market demand, and the competitive landscape become less reliable the further into the future they are made, and five years out often exceeds many airlines' own planning horizon.

Therefore, the longer-term period from 2027 to 2060 is forecasted on an econometric regression basis, where the historic relationship between demand and GDP is correlated and tested, and this relationship used to forecast unconstrained passenger demand based upon a GDP predictor. Because GDP and passenger traffic have historically been closely correlated, the ASM long-term methodology is a standard approach used for long-term airport forecasts across the aviation industry.

Although historic traffic demand has a good correlation with North American GDP, a blended GDP approach was used to reflect the international nature of JFK's passenger base and to improve the strength of the correlation. A blend of 89.0% North America and 11.0% Western Europe was used to reflect the sizeable portion of traffic originating from these regions as demonstrated in Figure 46, where the annual proportion of tickets sold in Western Europe is consistent. GDP data, both historic and forecasted, was obtained from Oxford Economics.

Figure 47: Ticketing Point of Sale - JFK Traffic<sup>169</sup>



Regression analysis of the historic passenger traffic at JFK against the blended GDP value between 2001 and 2019 resulted in an adjusted  $r^2$ , or explanatory power value of 0.97. In other words, 97.0% of the changes in passenger demand at JFK year-on-year can be explained by the changes in the blended GDP, with the remaining 3.0% explained by other variables. This level of

<sup>169</sup> Source: Sabre Market Intelligence

explanatory power is very high, providing a high degree of confidence of the reliability of the GDP blend as a predictor. The high level of reliability includes the impact of the 9/11 Attacks and 2007 – 2008 Global Financial Crisis.

The strength of the relationship between GDP and traffic growth weakened during the COVID-19 pandemic. Demand for air travel was disproportionately affected compared to GDP because of border closures, travel restrictions, reductions in business activity, health protocols, and other factors. The explanatory power ( $r^2$ ) in the regression analysis is therefore weakened when the period of the COVID-19 pandemic is included but given the strong historic relationship and that the variance is explainable, the analysis remains valid.

As the longer-term (2027 - 2060) forecast is econometric, no constraints have been applied relating to future growth factors including slots, terminal or other capacity, or any other similar constraint considerations. Therefore, the actual longer-term passenger throughput would likely be negatively impacted by such constraints. The long-term forecast reflects does not assume any specific future events or major economic downturns such as airline failures, pandemics, terrorism, and that any economic downturns are reflected in the GDP forecast from Oxford Economics. However, over the long-term forecast period 2026 – 2060, passenger enplanements are forecasted to grow at a CAGR of 1.8%, which is conservatively below JFK's actual 2009 – 2019 CAGR of 3.6%.

### Bottom-Up Results

The bottom-up forecast shows JFK passenger traffic returning to 2019 levels in 2024 – 2025, with an acceleration of traffic recovery expected over the next 12 to 24 months.

Domestic traffic will be restored the fastest, while the pace of international traffic recovery will vary by region depending upon vaccination rates, testing capabilities, and borders re-opening. Leisure traffic is expected to lead traffic recovery in the earlier period of the forecast, with business travel generally lagging. Average load factors are expected to take until the end of the bottom-up period to recover to 2019 levels, as a combination of more seats per aircraft and a slower rate of passenger demand recovery versus aircraft movements takes effect.

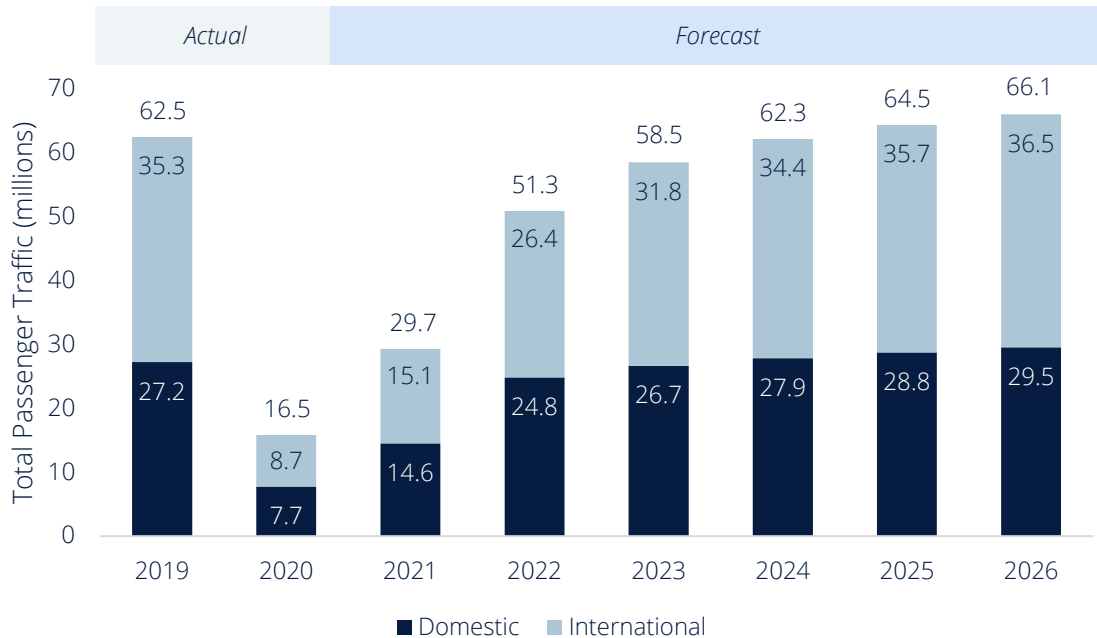
Table 33 and Figure 48 summarize the bottom-up forecast results.

**Table 33: JFK Bottom-Up Forecast Results - Passenger Traffic (000)<sup>170</sup>**

	<i>Actual</i>		<i>Forecast</i>					
	2019	2020	2021	2022	2023	2024	2025	2026
Domestic	27,247	7,749	14,556	24,836	26,684	27,872	28,787	29,546
International	35,302	8,747	15,123	26,419	31,844	34,396	35,706	36,535
<b>Total</b>	<b>62,549</b>	<b>16,496</b>	<b>29,679</b>	<b>51,254</b>	<b>58,529</b>	<b>62,268</b>	<b>64,493</b>	<b>66,082</b>

<sup>170</sup> Source: Actual – U.S. DoT T100, Forecast – ASM Forecast

Figure 48: JFK Bottom-Up Forecast Results - Passenger Traffic<sup>171</sup>



Aircraft movements are expected to recover quickly, with 98.2% of 2019 movements in 2023 and 2019 movement levels exceeded in 2024. The rapid recovery pace of aircraft movements versus passengers is due to slot usage requirements and airlines' focus on revenue generation to lead the restoration of their financial health. International movements are expected to lead the recovery. Growth in aircraft movements beyond 2019 levels during the forecast period will come from airlines utilizing their slots more as no new slots are expected at JFK.

Table 34 and Figure 49 summarize the bottom-up aircraft movements forecast.

Table 34: JFK Bottom-Up Forecast Results - Aircraft Movements<sup>172</sup>

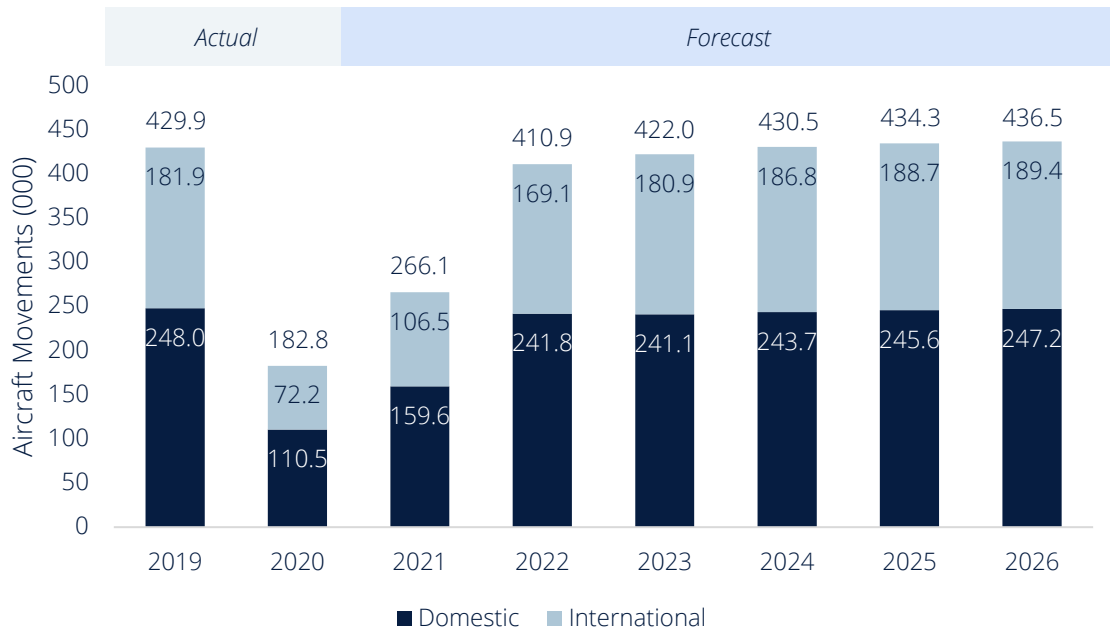
	Actual		Forecast					
	2019	2020	2021	2022	2023	2024	2025	2026
Domestic	247,992	110,546	159,580	241,789	241,099	243,653	245,637	247,169
International	181,885	72,204	106,500	169,100	180,930	186,802	188,668	189,362
<b>Total</b>	<b>429,877</b>	<b>182,750</b>	<b>266,080</b>	<b>410,889</b>	<b>422,029</b>	<b>430,455</b>	<b>434,305</b>	<b>436,531</b>

<sup>171</sup> Source: Actual – U.S. DoT T100, Forecast – ASM Forecast

<sup>172</sup> Source: Actual – U.S. DoT T100, Forecast – ASM Forecast



Figure 49: JFK Bottom-Up Forecast Results - Aircraft Movements<sup>173</sup>

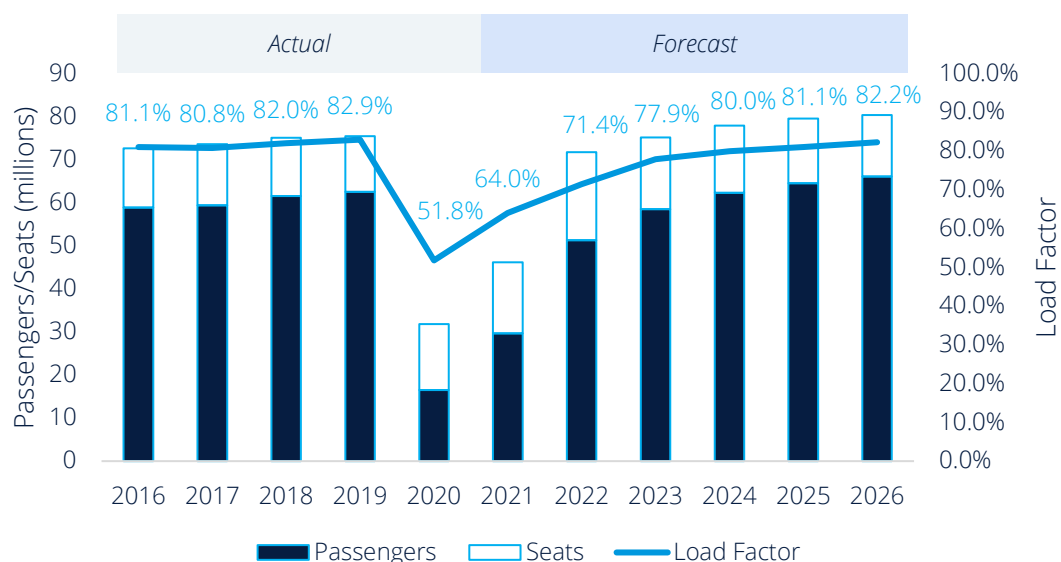


Average load factors are anticipated to recover broadly to pre-pandemic levels, at which point they are likely to broadly flatten out as the average aircraft size increases. Some annual load factor growth is assumed, but this is conservative to ensure that unrealistically high load factors would be avoided in the long-term forecasts. Load factors in 2022 are anticipated to average 71.4% at JFK, with 74.1% for domestic and 69.1% for international. By 2026, JFK's average load factor is forecasted to rise to 82.2%, with 83.3% for domestic and 81.1% for international, which is in line with the actual JFK load factors between 2016 and 2019.

Figure 50 summarizes the bottom-up load factor forecast.

<sup>173</sup> Source: Actual – U.S. DoT T100, Forecast – ASM Forecast

Figure 50: JFK Bottom-Up Forecast Results - Average Load Factor<sup>174</sup>



### Long-Term Results

The long-term forecast shows JFK seeing 70.9 million passengers in 2030, growing to 119.7 million passengers in 2060.

As previously described, the econometric nature of the long-term forecast means that no operational constraints are considered, and that the future growth in demand for travel to/from JFK will continue to have the same relationship with GDP as it has historically. Despite the unconstrained nature of the forecast, the CAGR of JFK's passenger traffic between 2019 and 2060 is 1.6%, well below the historical rate (1991 – 2019) of 3.5% which includes the impact of past events like the 9/11 Attacks and 2007 – 2008 Global Financial Crisis.

The additional passenger demand will be partially satisfied through more efficient use of existing aircraft movement capacity through:

- **Larger aircraft:** The latest generation of narrowbody and widebody aircraft are larger than their predecessors enabling further passenger growth as airline fleets add more of these aircraft. The recovery will bring the return of global airport capacity constraints. Improvements in operating economics and performance, rising costs of fuel and labor, and market growth all indicate that the upgauging trend by manufacturers and airlines will continue over the long term. Between 2009 and 2019, the average seats per aircraft movement at JFK increased by 22 from 153 to 175 for a CAGR of 1.4%. In 2060, the average seats per movement at JFK would be 213<sup>175</sup>, which is a CAGR from 2019 of 0.5%, which is well below the historical trend.

<sup>174</sup> Source: Actual – U.S. DoT T100, Forecast – ASM Forecast

<sup>175</sup> By comparison, a JetBlue A321 neo in standard configuration (not Mint) has 200 seats. Source: JetBlue

- Higher load factors: Between 2009 and 2019, the average annual load factor at JFK increased by 9.7 percentage points from 73.2% to 82.9%<sup>176</sup>. Even with that increase, in 2019 6.4 million seats departed JFK empty. The increase is expected to be driven by airlines looking to fulfil passenger demand growth in a very important market for their route networks yet constrained by the number of aircraft movement slots. Airlines are also facing pressure to increase operating and cost efficiencies and are improving the technology utilized to sell seats and maximize use of available capacity. The pressures on airline route network profitability and improvements in seat capacity management are both ongoing trends that are expected to continue increasing load factors. The 9.7 percentage point increase took only 10 years to materialize over the 2009 to 2019 period; by contrast, the long-term forecast assumes that this same 9.7 percentage point increase would occur over a 26-year period, thus showing this to be a more conservative assumption as compared with historical results. The unconstrained long-term forecast shows an average load factor in 2060 of 95.4%.

Table 35 and Figure 51 summarize the JFK long-term passenger traffic forecast results.

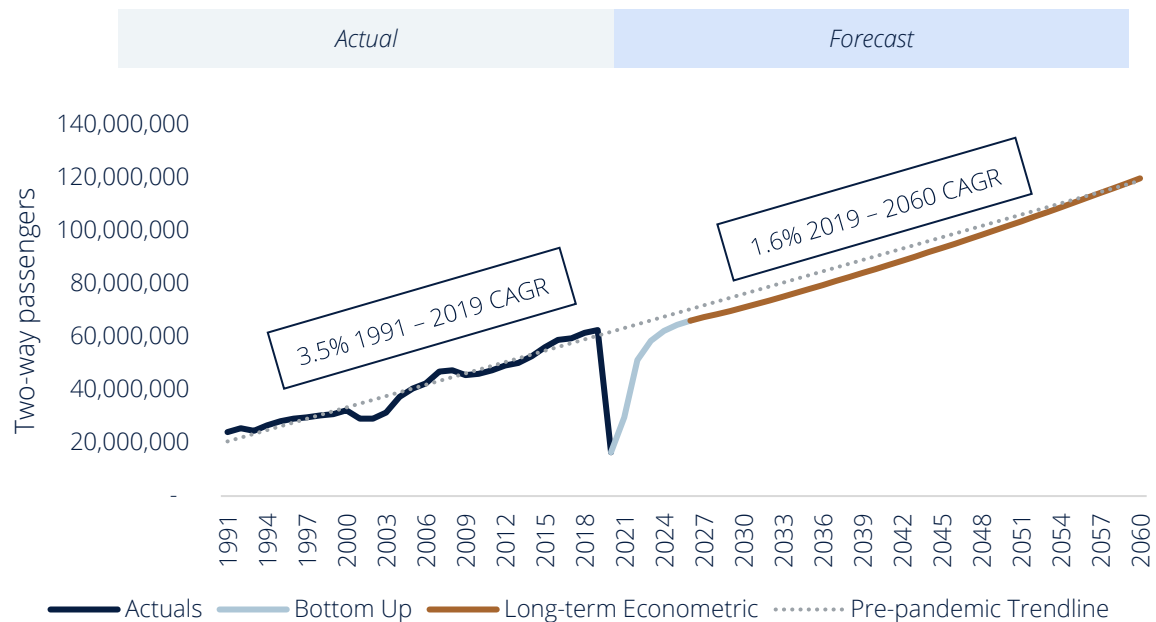
**Table 35: JFK Long-Term Forecast Results – Total Passengers (000)<sup>177</sup>**

	<i>Actual</i>		<i>Forecast</i>					
	2019	2020	2021	2025	2030	2040	2050	2060
Total JFK Passengers	62,549	16,496	29,679	64,493	70,993	85,532	101,785	119,705

<sup>176</sup> Source: U.S. DoT T100

<sup>177</sup> Source: Actual – U.S. DoT T100, Forecast – ASM Forecast

Figure 51: JFK Long-Term Forecast Results – Total Passengers<sup>178</sup>



This econometric led long-term passenger forecast has been extrapolated into a long-term progression of movements based upon the continuation of historic trends. By the end of the long-term period in 2060, the unconstrained forecast indicates approximately 590,000 two-way movements (take-offs and landings) at JFK, as shown in Table 36 and Figure 52.

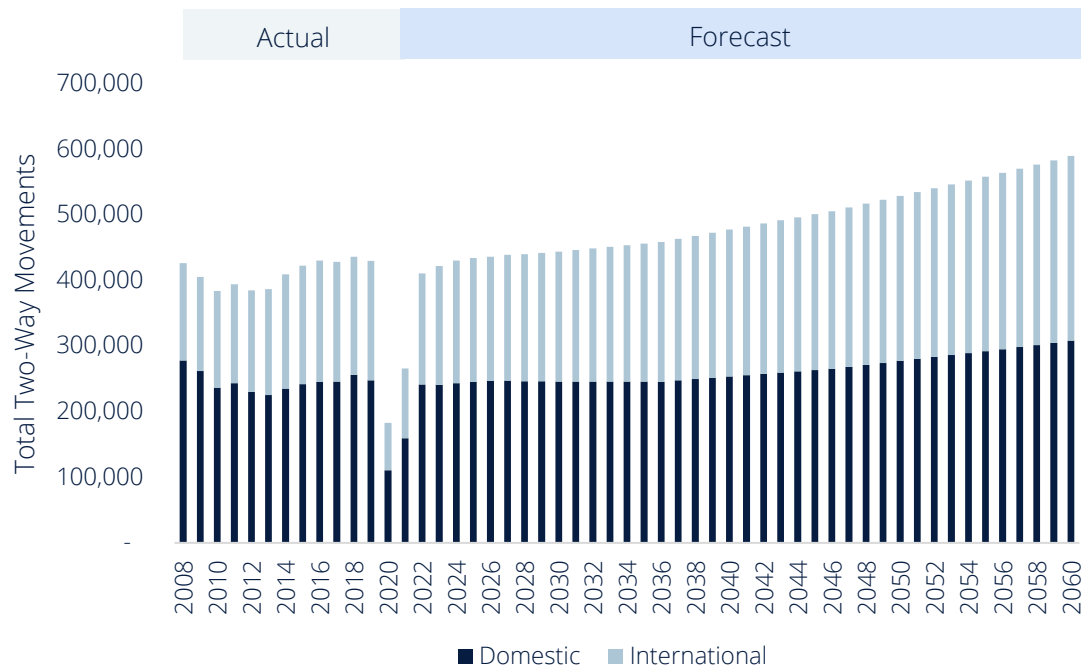
Table 36: JFK Long-Term Forecast Results – Aircraft Movements<sup>179</sup>

	Actual		Forecast					
	2019	2020	2021	2025	2030	2040	2050	2060
Domestic	247,992	110,546	159,580	245,637	246,005	253,827	277,442	308,210
International	181,885	72,204	106,500	188,668	198,255	223,809	251,656	281,703
<b>Total</b>	<b>429,877</b>	<b>182,750</b>	<b>266,080</b>	<b>434,305</b>	<b>444,260</b>	<b>477,636</b>	<b>529,097</b>	<b>589,912</b>

<sup>178</sup> Source: Actual – U.S. DoT T100, Forecast – ASM Forecast

<sup>179</sup> Source: Actual – U.S. DoT T100, Forecast – ASM Forecast

Figure 52: JFK Long-Term Forecast Results – Aircraft Movements<sup>180</sup>



While JFK is constrained in the number of aircraft movement slots, the number of aircraft movements can continue to grow via:

- Increased utilization of existing slots: Airlines must maintain 80% usage of their slots. In 2019, airlines flew approximately 85.5% of the available aircraft movement slots.<sup>181</sup> As passenger demand grows, airlines add frequency, extend the operating season on routes, and add new markets. Without additional slots to acquire, the growth in flights would be accomplished by operating a higher percentage of the slots they already have.
- Additional flights outside of slot-controlled hours: JFK's slot control rules are in effect for 17 hours each day<sup>182</sup>. In 2019, 9.7% of JFK's aircraft movements were scheduled outside of the slot-controlled hours, primarily to Asia, Central America, South America, and Florida<sup>183</sup>. As passenger demand to these regions continues to grow, airlines will continue to add departures outside the slot control hours.

<sup>180</sup> Source: Actual – U.S. DoT T100, Forecast – ASM Forecast

<sup>181</sup> Based on U.S. DoT T100 data

<sup>182</sup> JFK's slot controls are in effect from 06:00 to 23:00. In 2019, approximately 8% of scheduled JFK passenger departures occurred outside these hours (Source: Published airlines schedules via [airlinedata.com](http://airlinedata.com))

<sup>183</sup> Source: U.S. DoT T100



## Terminal 6 Enplanements Forecast

### Summary

Derived from the detail in the bottom-up forecast, the Terminal 6 enplanements forecast is a forecast of passenger enplanements based upon eight potential combinations of airlines occupying the terminal to ensure the forecast considered a range of options since the actual airline combination is not yet known. The airline combinations and timing of their first flights in Terminal 6 was provided by JMP.

The terminal will be built in two phases. Phase 1 includes five widebody gates and one narrowbody gate and is expected to start operating in 2025<sup>184</sup>. Phase 2 adds four widebody gates and is expected to start operating in 2027.

### Methodology

The enplanements forecast for each of the eight Terminal 6 airline combinations was obtained on an airline-by-airline basis from the JFK bottom-up forecast through 2026. From 2027 onwards, each airline's enplanements were forecasted to increase at the same JFK-wide annual growth rate used in the econometric forecast. The JFK-wide growth rate was used because it is not possible to forecast different airlines at different growth rates while still achieving the same passenger enplanement totals in the econometric forecast.

The approach for JetBlue was slightly different in that not all its flights will move to Terminal 6. The JMP phasing plan assumed that JetBlue would utilize only one gate in Terminal 6, therefore the airline's inclusion within the forecast was limited to the enplanements expected from full utilisation of a single gate as analyzed by JMP. Since the gate was assumed to be fully utilized in the number of daily flights, passenger enplanement growth was limited to the increasing size of aircraft being used. A growth rate of 0.5% in JetBlue's seats per movement was applied based on its existing aircraft order book and assumptions about retirements through 2030. From 2031 to 2060, the increasing aircraft size was assumed to continue, albeit at half the rate as before 2030 for conservatism.

JMP provided ASM with eight different combinations of airlines that could potentially operate in new Terminal 6 because airline negotiations are ongoing and thus the exact airline mix is not yet known. The combinations of airlines were developed by JMP and based on likely flight arriving and departing times, number of flights per day, and types of scheduled aircraft (e.g., 777) that would potentially use new Terminal 6. According to JMP, the actual number of airlines operating in new Terminal 6 will be based on a variety of factors including, but not limited to, the use and availability of Phase 1 and Phase 2 gates and facilities in new Terminal 6, the number of flights per day, and the actual scheduled arrival and departure times of each airline.

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<sup>184</sup> One widebody gate is planned to come online one year after Phase 1 opens (2026).



The Terminal 6 passenger enplanement forecast results include:

- High Airline Combination: the airline combination producing the largest number of passenger enplanements in 2060
- Average Airline Combination: a simple average of the eight potential airline combinations, which were all given equal weight
- Low Airline Combination: the airline combination producing the smallest number of passenger enplanements in 2060
- Initial Base Airline Combination: the airline combination in the financial model as presented to rating agencies.

### Results

Figure 53 and Table 37 show the Terminal 6 enplaned passenger forecast for the airline combinations with the highest level of passenger enplanements, the average number of passenger enplanements, and the lowest number of passenger enplanements.

Figure 53: Terminal 6 Enplaned Passenger Forecast<sup>185</sup>

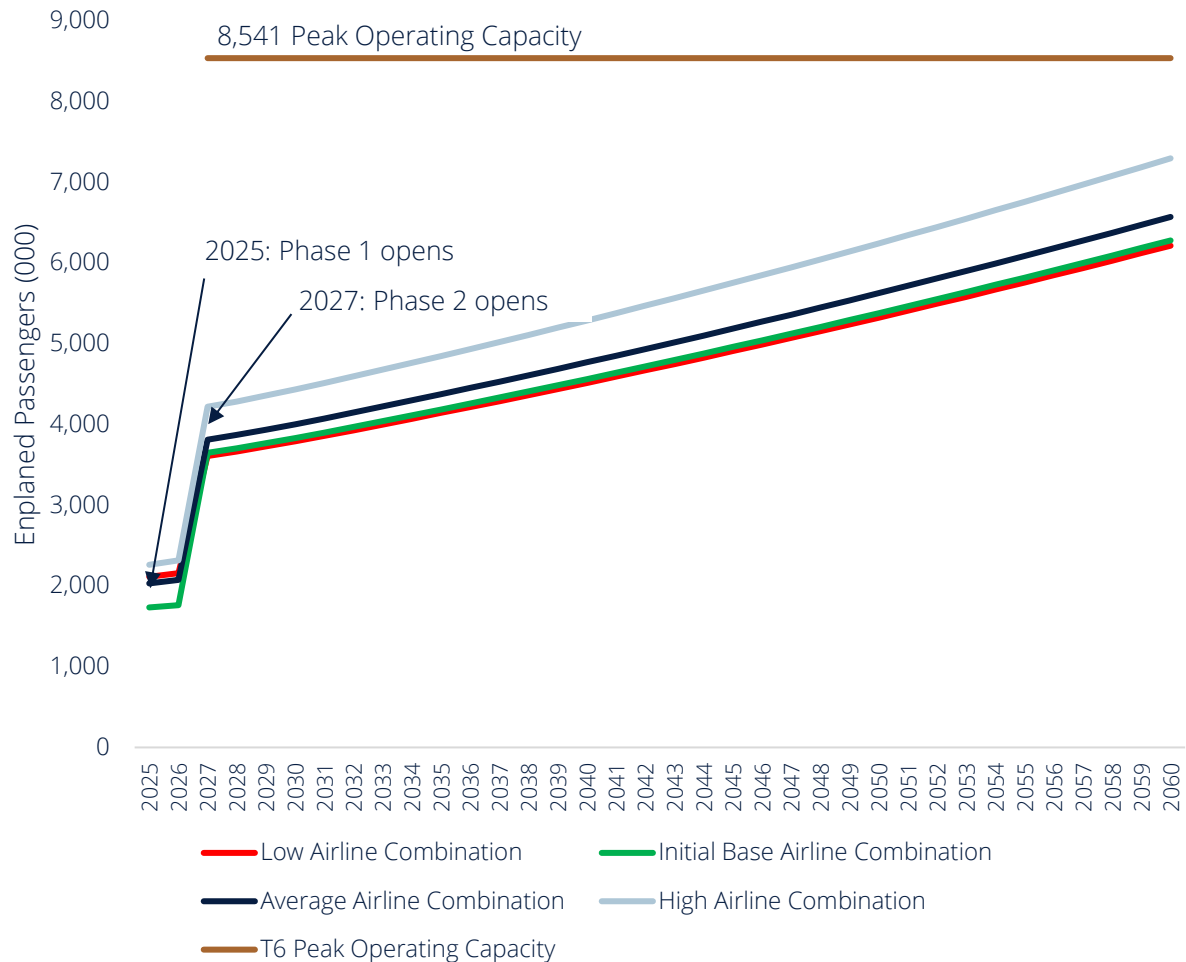


Table 37: Terminal 6 Airline Combination Enplaned Passenger Forecast (000)

	2025	2027	2030	2035	2040	2045	2050	2055	2060	2025-2060	
										Total Enplanements	CAGR
High	2,263	4,221	4,435	4,850	5,291	5,756	6,246	6,761	7,299	197,111	3.4%
Average	2,033	3,812	4,005	4,377	4,772	5,190	5,629	6,091	6,574	177,703	3.4%
Initial Base	1,735	3,649	3,833	4,188	4,565	4,963	5,382	5,822	6,282	169,503	3.7%
Low	2,115	3,612	3,793	4,145	4,517	4,911	5,326	5,761	6,217	168,561	3.1%

Phase 1 is anticipated to generate between 2.0 million and 2.3 million passenger enplanements in 2025, assuming a full calendar year of operation. Phase 2 commencing 2027, again assuming a full calendar year, will see between 3.6 million and 4.2 million enplaned passengers.

<sup>185</sup> Source: ASM Forecast. Peak operating capacity provided by JMP.





By 2060, the end of the forecast period, Terminal 6 is anticipated to generate between 6.2 million and 7.3 million passenger enplanements, well within the terminal's peak operating capacity of 8.5 million enplaned passengers<sup>186</sup>.

The difference between the High and Low airline combinations is approximately 7.0% at the start of Phase 1 in 2025, and 16.9% at the start of Phase 2 in 2027 and at the end of the forecast period in 2060. Material downsides are not likely in lower traffic combinations while upsides are present in the High combination.

Passenger enplanements in the High airline combination are 11.0% higher than the Average airline combination in 2060, while 2060 passenger enplanements in the Low airline combination are 5.4% below the Average airline combination. The Initial Base airline combination being closer to the Low airline combination than the High airline combination indicates that the airline combinations chosen are conservative relative to the possible combinations of the airlines considered potential occupants of Terminal 6.

Passenger enplanements in the Initial Base airline combination are 4.4% lower than the Average airline combination in 2060, suggesting that it is also conservative.

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<sup>186</sup> Peak operating capacity calculated using 1,300 peak hour passengers \* 18-hour operating day \* 365 days per year, as provided by JMP

## 10. Key Factors Affecting Future Airline Capacity and Demand

### Key Takeaways

1. The COVID-19 pandemic has interrupted, but not halted, long-term growth trends in global air passenger traffic
2. Climate change is driving significant changes in the aviation and aerospace industries, with progress toward Net Zero enabling long-term growth in global air travel demand
3. A new generation of transatlantic-capable narrowbody aircraft are providing airlines with additional flexibility and improved economics that enable route network growth and new market development

There are a few industry trends and influencing factors that are affecting airline commercial and operational planning, including how they evaluate and pursue passenger traffic demand as well as how they structure and serve their route networks. Each of the following sections reviews a topic relevant to JFK as well as other major international gateway airports that have been considered as part of the forecasting process.

### COVID-19 Pandemic

COVID-19 has impacted the passenger aviation and tourism market global more severely than any of the geo-political shocks experienced by the industry since commercial aviation growth started to accelerate in the 1970's. This section aims to summarise how the industry has been affected since February 2020 and discuss how recovery is expected be manifested.

Notwithstanding the deep impacts COVID-19 has had, the signs of resilience and demand for air travel that are being shown point to the fundamental long-term robustness of the industry with the long-term expectations of growth remaining. Despite being still within the impact of the pandemic, the trajectory of the COVID-19 virus and similarities in macro-economic and passenger demand recovery with prior crises indicates that the COVID-19 pandemic is a relatively short-term shock rather than a long-term fundamental changer of the industry.

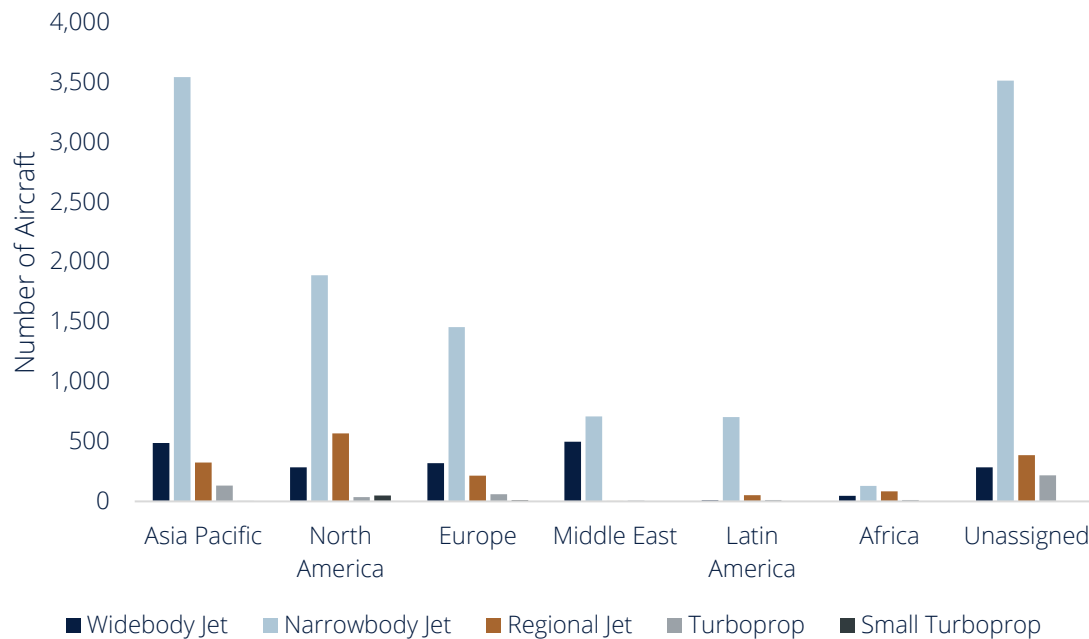
As of January 2022, COVID-19 cases have exceeded 335 million with deaths approaching six million globally. Many nations are experiencing the 5<sup>th</sup> wave of cases due to the Omicron variant, but unlike the first year of the COVID-19 pandemic there is now an established vaccination program which appears to protect against the most serious illness and reduce fatalities. While most developed nations are advanced in their vaccination roll outs, challenges remain in delivering vaccines in developing nations. Virus variants are therefore likely to continue emerging, and COVID-19 will become endemic or rather unlikely to be eradicated. Society will likely need to continue with varying control measures for the foreseeable future.

### Airline Fleets

The first is the changes to deployment of aircraft fleet. The COVID-19 pandemic has driven airlines faster toward fuel efficiency and unit cost reduction. As we discuss in the Sustainability section, this will further accelerate due to climate change pressures. The fleet deployment trends are toward narrowbody aircraft with increased range and size, the A320XLR series, 737-MAX. Many airlines took the opportunity to retire their aging fleets of widebodies and as new

aircraft are ordered they predominantly fall into this category. Figure 54 summarizes the current fleet orders by region and aircraft category.

Figure 54: Fleet Orders by Region<sup>187</sup>



Unassigned = aircraft without an assigned operator

While the mainstay of low-cost carriers, the network carriers are also taking advantage of this fleet mix change to ensure greater efficiency and profitability.

### Rebuilding Passenger Demand and Airline Route Networks

Passenger demand patterns have shifted out of necessity and a new hierarchy of demand factors evolved which we believe represents how airlines will rebuild their route networks, as shown in Figure 55.

<sup>187</sup> Source: Centre for Aviation (CAPA) Fleet Database

Figure 55: New Hierarchy of Demand Factors

Domestic VFR/Essential Business	<ul style="list-style-type: none"> <li>• Driven by trust and confidence</li> <li>• Nation-state focused economic stimulus</li> </ul>
International VFR	<ul style="list-style-type: none"> <li>• Latent demand to reconnect with distant and missed family</li> </ul>
International Leisure	<ul style="list-style-type: none"> <li>• Self-funded – when trust and confidence restored</li> </ul>
International Essential Business	<ul style="list-style-type: none"> <li>• Reconnect with supply chain, business partners, and related where video conferencing is insufficient</li> </ul>
International Regular Business	<ul style="list-style-type: none"> <li>• Corporate funded travel</li> <li>• MICE recovery</li> </ul>

There is some debate about whether the, at times perceived opposite, models of point-to-point versus hub and spoke will continue. The low-cost carrier sector has gained share and will continue to do so in the aftermath of COVID-19. This is a long-standing trend and while customers will still prefer nonstop services it should always be noted that the world's major connecting hubs are invariably the largest origin-destination markets, with the main exceptions being the Gulf hubs. Furthermore, many city pairs are not viable to be served on a nonstop basis and so hubs will continue to provide a vital mechanism for connecting markets.

#### Airline Route Network Development

Our final commentary on the on-going impact of COVID-19 reflects on the route development activity of airlines during the COVID-19 pandemic period. While airlines have reduced schedules and consolidated operations, at the same time airlines have remained very active in the market, launching many new routes and taking the opportunity to enter new markets, in some ways being experimental in their approach. Given the financial challenges and burdens airlines face from the COVID-19 pandemic, airlines are likely to focus on routes with strong revenue-generation and low-risk profitability.

Over the past few years ASM has tracked airlines route announcements to develop an understanding of data points around new route decisions. In 2020 airlines announced 2,164 new routes, an understandable reduction from 2019 where the equivalent count was 3,847. In 2021, however the total grew to 4,488 a significant increase on the final pre-pandemic year. The U.S. was the top origin country for new announcements, 769, and Cancun was the top destination receiving 37 new origin markets.

This as a sign of fundamental strength of the air transport sector. A period of high volatility is leading to high growth and creativity from airlines in the markets they are exploring. Markets with strong domestic and leisure content will recover quickly, and those that have global appeal and offer global connectivity will be a place of consistent airline investment. With a large market base and all these characteristics, JFK is poised for resumed and continued growth as the global

economic and industry recovery continues. Once the high growth period has stabilised and the new route networks are established the industry will continue its stable growth trajectory.

### Sustainability

Climate change is likely to be the dominant agenda facing global society in the upcoming decades. Scientific consensus is that containing global temperature rises to under 1.5°C, as defined in the Paris Agreement would greatly reduce the impact severity of climate change. The recent Intergovernmental Panel on Climate Change (IPPC) report endorsed this overall goal but stressed that the range of warming scenarios potentially pointed temperature rises in excess of this level. It is generally agreed that all sections of society and business need to set courses and act towards a Net Zero carbon goal to constrain global warming to under the 1.5°C level.

The Aviation industry is aligned with these objectives with IATA, ACI and Air Transport Action Group (ATAG) declaring the target of achieving Net-Zero by 2050. Today between 2% - 3% of global emissions are attributed to aviation. However, and despite the current impact of COVID-19 on passenger traffic, demand is expected to continue to grow strongly. By 2050, annual global passengers could double from 4 billion to 10 billion passengers. Aviation's share of emissions will increase, and this will be further marked by the reduced emissions contributions of other industry sectors.

### Technology and Innovation Leads the Way

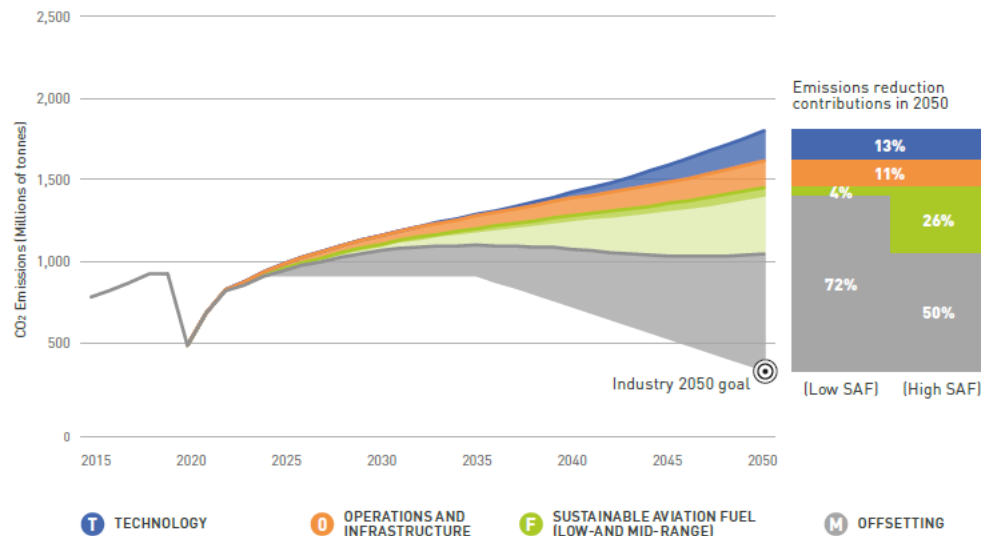
The success of carbon reduction measures for aviation will depend on major advances in technology and innovation, much of which will require high levels of investment and take time to become proven, standardized, and commercial valuable. Notwithstanding those challenges many advances are being made quickly with the Net Zero agenda at the forefront of the industry's priorities.

ATAG's Commitment to Fly Net Zero 2050 Statement highlights four areas where decarbonisation of air transport would be achieved:

- Increasing use of sustainable aviation fuels (SAF).
- Research, development, and deployment of evolutionary and revolutionary airframe and propulsion systems (including aircraft powered by electric or hydrogen engines).
- Improvements in the efficiency of operations and infrastructure across the air transport system including airports and air navigation service providers.
- Investment in carbon-offsets and carbon capture or removal.

The ATAG plan is summarized in Figure 56.

Figure 56: ATAG Commitment to Fly Net Zero 2050 Plan<sup>188</sup>



While improved technology and operational systems are significant, the uptake of SAF and effective Offset, or rather Carbon Capture, provide the largest expected contributors to Net Zero.

These measures effectively deployed across the industry should enable air transport to continue its growth path, delivering increased global connectivity and the associate economic and social benefits.

### Potential Market-Based Measures

There are however further potential inhibitors to future growth in the form of strengthened market-based measures, government and regulatory body policies and protocols which would be designed to limit demand. If the path toward improved technologies and SAF usage as described above is slower than required, we should expect further actions to impact and regulate the growth of the industry.

Such measures are likely to include:

- Increased passenger-based taxation
- Restrictions on use of older, worst emissions emitting aircraft and engines
- Carbon based pricing of air tickets
- Frequent flyer/premium cabin additional taxation
- Tightening of air service agreements to factor aircraft and movement limits

As an industry we all need to adapt to these challenges ahead and as we look to secure the growth of our route networks and traffic, we will need to consider this in the context of the drive toward Net Zero.

<sup>188</sup> Source: Air Transport Action Group

The underlying demand for travel we believe will remain strong and continue to grow, if as an industry we can achieve the necessary progress toward Net-Zero then we should expect confidence that traffic at our core airport infrastructure will develop as planned. As such, the long-term passenger traffic forecast does not include any degradation in demand or aircraft movements at JFK because of climate change.

### Narrowbody Longhaul Aircraft

A generational change is underway in the fleets of many of the world's airlines which will have a profound impact on their route networks and economics over the next several decades.

Both Boeing and Airbus have introduced 150 – 200 seat narrowbody aircraft that can efficiently fly transatlantic routes with full passenger and baggage loads, where 250+ seat aircraft used to predominate. The Airbus A320 neo LR has a published range of 4,000 nm (see Figure 57), while the Boeing 737 MAX 8 has a published range of 3,550 nm<sup>189</sup>.

Figure 57: Airbus A320 neo LR Range from JFK (4,000 nm)



These aircraft offer greater range and payload capabilities because of advances in design and technology that have also improved the economics of these aircraft compared to prior generations. In some cases, the operating cost per seat can even be lower than similar costs on larger widebody aircraft.

The advantages offer airlines the ability to serve smaller nonstop markets, increase frequency, and continue to operate year-round instead of providing service on a seasonal basis.

Narrowbody transatlantic service has some precedent in the Boeing 757, which is currently used by several airlines for flights between North America and Europe. The key differences between this older generation and the newer aircraft are seen in the engine, materials, and other design

<sup>189</sup> Source: Airbus and Boeing websites



advancements that improve operating economics as well as more flexibility in aircraft size. In 2022, Icelandair is the only JFK airline scheduling 757 aircraft on transatlantic flights and only averaging a single weekly departure with the aircraft type.

### New Narrowbody Increasing Airline Capacity Recovery Capability

As the COVID-19 recovery progresses, transatlantic airlines with Boeing 737 MAX or Airbus A320 neo aircraft in their fleets can potentially resume longhaul service earlier than other carriers because not as much demand is required to make them viable. In 2019, an average of 26 monthly departures were flown between JFK and Europe using narrowbody aircraft. In the first half of 2022, 68 daily monthly departures are scheduled between JFK and Europe. Narrowbody flights were 5.8% of JFK's transatlantic flights in the first half of 2019 and are scheduled to be 6.8% in the first half of 2022<sup>190</sup>. JetBlue, Aer Lingus, Icelandair, and Azores Airlines have scheduled transatlantic flights from JFK with narrowbody aircraft during the first half of 2022.

JFK's transatlantic airlines have 76 of the next generation narrowbody aircraft best suited for transatlantic flights (B737 MAX 8 and A321 neo LR aircraft) currently in their fleets. Another 259 of these aircraft have been ordered or optioned. However, the potential fleet is considerably larger because airlines do not have to specify the long-range version of the aircraft until relatively close to delivery (typically 1 – 2 years). JFK's transatlantic airlines have ordered and optioned a total of 885 B737 MAX 8 and A321 neo aircraft, some of which are likely to be delivered in longhaul transatlantic configuration.<sup>191</sup>

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<sup>190</sup> Source: [airlinedata.com](https://airlinedata.com). Schedules for 2022 current as of January 11, 2022.

<sup>191</sup> Source: Aviation Week Network Fleet Discovery. Singapore Airlines flies transatlantic service but is excluded from this list because its narrowbody aircraft are expected to remain operating in Asia-Pacific.





## Appendix A

### Airport Codes

ACC	Kotoka International Airport	Accra, Ghana
ANC	Ted Stevens Anchorage International Airport	Anchorage, Alaska
ANU	V.C. Bird International Airport	Antigua and Barbuda
ATH	Athens International Airport	Athens, Greece
ATL	Hartsfield-Jackson Atlanta International Airport	Atlanta, Georgia
AUA	Queen Beatrix International Airport	Oranjestad, Aruba
BCN	Josep Tarradellas Barcelona – El Prat Airport	Barcelona, Spain
BDA	L.F. Wade International Airport	St. George's, Bermuda
BER	Berlin Brandenburg Airport Willy Brandt	Berlin, Germany
BGI	Grantley Adams International Airport	Bridgetown, Barbados
BNA	Nashville International Airport	Nashville, Tennessee
BOG	El Dorado International Airport Luis Carlos Galán Sarmiento	Bogota, Colombia
BUD	Budapest Ferenc Liszt International Airport	Budapest, Hungary
BUR	Bob Hope Airport	Burbank, California
BWI	BWI Thurgood Marshall Airport	Baltimore, Maryland
BZN	Bozeman Yellowstone International Airport	Bozeman, Montana
CDG	Paris Charles de Gaulle Airport	Paris, France
CLO	Aeropuerto Internacional Alfonso Bonilla Aragón	Cali, Colombia
CNF	Tancredo Neves International Airport	Belo Horizonte, Brazil
DAL	Dallas Love Field	Dallas, Texas
DBV	Dubrovnik Airport	Dubrovnik, Croatia
DCA	Ronald Reagan Washington National Airport	Washington, D.C.
DEN	Denver International Airport	Denver, Colorado
DFW	Dallas-Ft. Worth International Airport	Arlington, Texas
DME	Moscow Domodedovo International Airport	Moscow, Russia
DSS	Blaise Diagne International Airport	Dakar, Senegal
EWR	Newark Liberty International Airport	Newark, New Jersey
EYW	Key West International Airport	Key West, Florida
EZE	Ezeiza International Airport	Buenos Aires, Argentina
FCO	Leonardo da Vinci International Airport	Rome, Italy
FLL	Fort Lauderdale International Airport	Fort Lauderdale, Florida
GMP	Gimpo International Airport	Seoul, South Korea
GRU	Governor André Franco Montoro International Airport	São Paulo
GYE	Aeropuerto Internacional José Joaquín De Olmedo	Guayaquil, Ecuador
HDN	Yampa Valley Regional Airport	Steamboat Springs, Colorado
HND	Tokyo Haneda Airport	Tokyo, Japan
HOU	William P. Hobby Airport	Houston, Texas
HPN	Westchester County Airport	White Plains, New York
IAD	Washington Dulles International Airport	Dulles, Virginia
IAH	George Bush Houston Intercontinental Airport	Houston, Texas



ICN	Incheon International Airport	Seoul, South Korea
ISP	Long Island MacArthur Airport	Islip, New York
IST	Istanbul Airport	Istanbul, Turkey
JAX	Jacksonville International Airport	Jacksonville, Florida
JFK	John F. Kennedy International Airport	Queens, New York
KEF	Keflavík Airport	Keflavík, Iceland
KRK	John Paul II Kraków-Balice International Airport	Kraków, Poland
LAX	Los Angeles International Airport	Los Angeles, California
LAS	Harry Reid International Airport	Las Vegas, Nevada
LCY	London City Airport	London, U.K.
LFW	Aéroport de Lomé-Gnassingbe Eyadema	Lomé, Togo
LGA	LaGuardia Airport	Queens, New York
LGB	Long Beach Airport	Long Beach, California
LGW	London Gatwick Airport	London, U.K.
LHR	Heathrow Airport	London, U.K.
LIN	Milan Linate Airport	Milan, Italy
LIS	Humberto Delgado Airport	Lisbon, Portugal
MAD	Adolfo Suárez Madrid-Barajas Airport	Madrid, Spain
MCO	Orlando International Airport	Orlando, Florida
MDW	Chicago Midway International Airport	Chicago, Illinois
MEX	Aeropuerto Internacional Benito Juárez	Mexico City, Mexico
MIA	Miami International Airport	Miami, Florida
MLB	Melbourne Orlando International Airport	Melbourne, Florida
MVY	Martha's Vineyard Airport	Martha's Vineyard, Massachusetts
MXP	Milan Malpensa Airport	Milan, Italy
NCE	Nice Côte d'Azur Airport	Nice, France
NRT	Narita International Airport	Tokyo, Japan
OAK	Oakland International Airport	Oakland, California
ONT	Ontario International Airport	Ontario, California
ORD	O'Hare International Airport	Chicago, Illinois
ORY	Paris Orly Airport	Paris, France
PTP	Pointe-à-Pitre Le Raizet Airport	Pointe-à-Pitre, Guadeloupe
PVG	Shanghai Pudong International Airport	Shanghai, China
SAT	San Antonio International Airport	San Antonio, Texas
SAW	Istanbul Sabiha Gökçen International Airport	Istanbul, Turkey
SCL	Arturo Merino Benítez Airport	Santiago, Chile
SEA	Seattle-Tacoma International Airport	Seattle, Washington
SFB	Orlando Sanford International Airport	Sanford, Florida
SFO	San Francisco International Airport	San Francisco, California
SHA	Shanghai Hongqiao International Airport	Shanghai, China
SJC	Norman Y. Mineta San Jose International Airport	San Jose, California
SJD	Los Cabos International Airport	San José del Cabo, Mexico



SJO	Juan Santamaría International Airport	San José, Costa Rica
SNA	John Wayne Airport – Orange County	Santa Ana, California
SNN	Shannon Airport	Shannon, Ireland
STN	London Stansted Airport	London, U.K.
SVO	Sheremetyevo International Airport	Moscow, Russia
SWF	New York Stewart International Airport	Newburgh, New York
STT	Cyril E. King Airport	St. Thomas, U.S. Virgin Islands
SXM	Princess Juliana International Airport	Sint Maarten
TPE	Taiwan Taoyuan International Airport	Taipei, Taiwan
TSA	Taipei Songshan Airport	Taipei, Taiwan
VCE	Venice Marco Polo Airport	Venice, Italy
ZRH	Zurich Airport	Zurich, Switzerland



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605 Third Avenue  
New York, NY 10158

