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# ACI ADVISORY BULLETIN

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## Economic impact assessment of COVID-19 on the airport business

Half of passenger traffic and more than half of revenues wiped out in 2020

Effective recovery requires coordinated approach led by international institutions

**Montreal, 5 May 2020** – The ongoing COVID-19 pandemic has resulted in a full-scale transportation crisis with the imposition of travel restrictions and suspension of flights in a global effort to contain the spread of the virus. Aviation has been brought to a virtual halt and the industry is in survival mode, crippled by the loss of traffic and revenues.

The unique feature of the ongoing crisis is the fact that both the supply and the demand sides of the equation are suppressed. On one hand, most flights are suspended, and travel is severely restricted while, on the other hand, air transport demand, particularly the passenger segment, has collapsed. The latter is a result of an idiosyncratic combination of economic and behavioural factors. The deteriorating macroeconomic situation and loss of income is added to by consumer concern that they may be susceptible to contracting the virus if they fly. Either and both conditions lead to avoidance or postponement of travel plans.

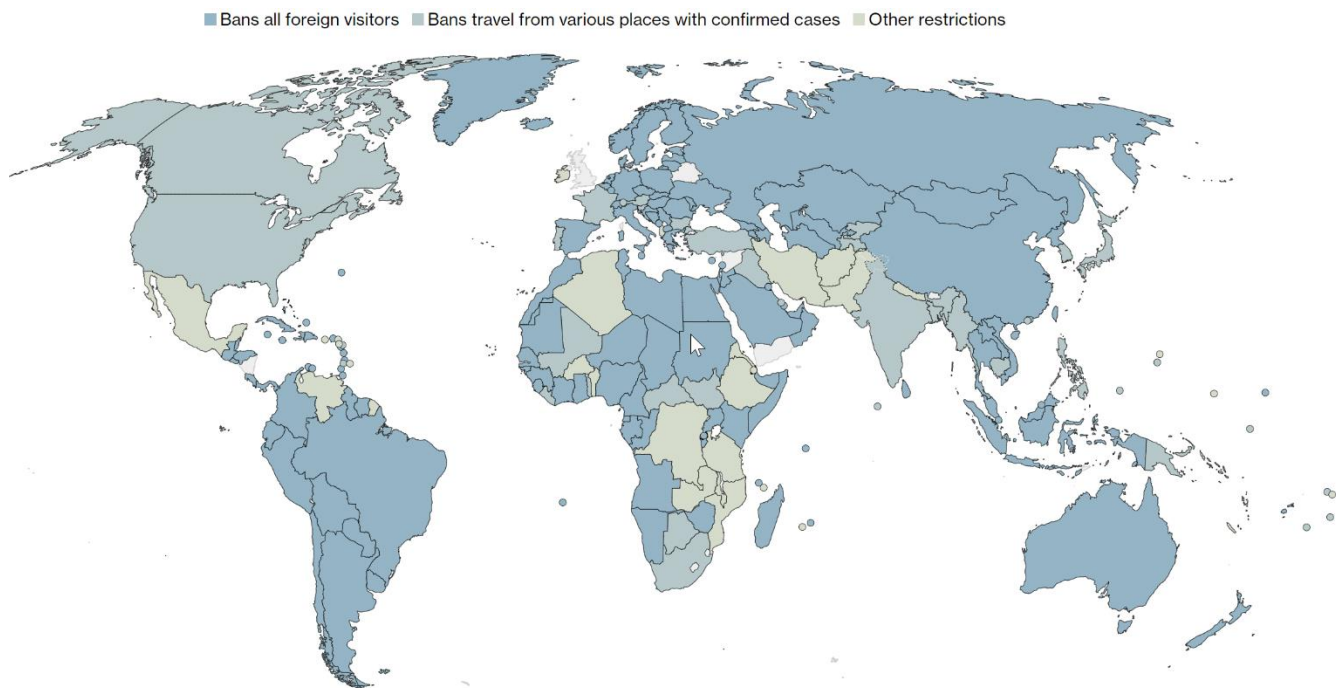
### Travel restrictions

According to the [recently released report from the World Tourism Organization \(UNWTO\)](#), the United Nations' agency for tourism, as of end of April, 100% of destinations now have restrictions in place. As well, 83% have had COVID-19-related restrictions in place for at least four weeks previous. More specifically, [the analysis based on 217 destinations worldwide](#) reveals the following:

- 45% have totally or partially closed their borders for tourists: “passengers are not allowed to enter”
- 30% have suspended totally or partially international flights: “all flights are suspended”
- 18% are banning the entry for passengers from specific countries of origin or passengers who have transited through specific destinations, and
- 7% are applying different measures, such as quarantine or self-isolation for 14 days and visa measures.

Chart 1 shows three key types of travel restrictions on a global scale due to COVID-19.

### Chart 1: Places restricting travel because of the outbreak (end of April)



Source: Adapted from [Bloomberg](#); based on [IATA](#), U.S. Dept. of State, Bloomberg News reporting, updated 24 April 2020.

At the airport level, the [ICAO Global COVID-19 Airport Status](#) reveals the list of restricted airports and those airports that are fully closed to commercial air services.

### Macroeconomic context

The recent figures from the International Monetary Fund (IMF) published in the April 2020 Update of the [World Economic Outlook \(WEO\)](#) illustrate the economic fallout, with an estimated decline in Gross Domestic Product (GDP) of at least 3 percentage points on a global scale.

The estimates also suggest that the brunt of the decline in global output will be concentrated in the advanced economies, though emerging markets and developing economies will not be immune to the economic ramifications (-6.1 and -1 percentage points respectively). See Table 1, below.

Nevertheless, the aggregate economic figures tend to mask the catastrophic situation in air transportation. As classified by [consulting companies](#) and [rating agencies](#), air transport is one of the hardest-hit industries by the decline in revenues and stock price of its leading companies.

This third economic impact assessment takes an evidence-based approach in portraying the current status of the industry in terms of passenger traffic and revenues

taking into account the latest data collected from world’s airports and an array of other inputs from ACI regional offices and industry experts.

**Table 1: Latest world economic outlook growth projections (real GDP, annual % change, 2019–2021)**

	PROJECTIONS		
	2019	2020	2021
<b>World output</b>	<b>2.9</b>	<b>-3.0</b>	<b>5.8</b>
<b>Advanced economies</b>	<b>1.7</b>	<b>-6.1</b>	<b>4.5</b>
<b>United States</b>	2.3	-5.9	4.7
<b>Euro area</b>	1.2	-7.5	4.7
Germany	0.6	-7.0	5.2
France	1.3	-7.2	4.5
Italy	0.3	-9.1	4.8
Spain	2.0	-8.0	4.3
<b>Japan</b>	0.7	-5.2	3.0
<b>United Kingdom</b>	1.4	-6.5	4.0
<b>Canada</b>	1.6	-6.2	4.2
<b>Other advanced economies</b>	1.7	-4.6	4.5
<b>Emerging markets and developing economies</b>	<b>3.7</b>	<b>-1.0</b>	<b>6.6</b>
<b>Emerging and developing Asia</b>	5.5	1.0	8.5
China	6.1	1.2	9.2
India	4.2	1.9	7.4
ASEAN-5	4.8	-0.6	7.8
<b>Emerging and developing Europe</b>	2.1	-5.2	4.2
Russia	1.3	-5.5	3.5
<b>Latin America and the Caribbean</b>	0.1	-5.2	3.4
Brazil	1.1	-5.3	2.9
Mexico	-0.1	-6.6	3.0
<b>Middle East and Central Asia</b>	1.2	-2.8	4.0
Saudi Arabia	0.3	-2.3	2.9
<b>Sub-Saharan Africa</b>	3.1	-1.6	4.1
Nigeria	2.2	-3.4	2.4
South Africa	0.2	-5.8	4.0
<b>Low-income developing countries</b>	5.1	0.4	5.6

Source: Adapted from IMF, [World Economic Outlook, April 2020](#)

### Passenger traffic in recent years: “The Good”

In the last two years, global passenger traffic posted growth: traffic grew to 8.8 billion passengers in 2018 and then increased to more than 9.1 billion passengers in 2019. This represented growth of +6.4% and +3.4% year-over-year, respectively.

Even though traffic growth started showing signs of a slowdown, it was a natural reflection of the late stage of the business cycle, characterized by moderating economic

growth, falling corporate profits, slowing sales and growing inventories. In the beginning of the year, the world's leading economy — the United States — documented 126 consecutive months of growth, the longest economic expansion in its history. As such, further moderation in the global economy and consequently air transport demand was expected in response to overheated markets.

Nevertheless, ACI had forecasted that global passenger traffic would reach the 9.5 billion passenger mark in 2020, reflective of a +4.6% forecasted growth year-over-year. The global passenger traffic forecast had been slashed to 9.3 billion passengers, equivalent of +1.6% growth year-over-year, however. As the COVID-19 outbreak started to unfold in Asia-Pacific from the beginning of the year, continued in Europe, and eventually spread across the globe affecting practically all countries and aviation markets, it became clear this year that such volume of traffic is unattainable.

However, the second week of March came as a game changer, whereby an overwhelming majority of national governments implemented strict confinement measures which eventually resulted in what the IMF later characterized as the “Great Lockdown”—the worst economic downturn since the Great Depression.

### **The first quarter of 2020: “The Bad”**

The most comprehensive traffic figures collected from the world's airports demonstrate that the COVID-19 impact on aviation was rapid, as global passenger traffic grew by just +2% in January 2020, down from +3.7% a month prior and below the average growth rate recorded in the preceding six months (+2.6%). Decreased traffic volumes were more apparent in the Asia-Pacific region at -1.5%.

The passenger traffic decline in February was even more pronounced, as Asia-Pacific witnessed a substantial traffic loss of -38.4%. Consequently, the world's airports recorded a combined decline of -10.7%. As the COVID-19 outbreak had been rapidly progressing in other regions, the imposition of travel restrictions and national lockdowns brought aviation to a virtual standstill by the end of March.

On a global scale, passenger traffic declined by -56.8% in the month of March year-over-year and by -58.6% as compared to the previously projected volumes under a pre-COVID-19 baseline. In the first three months of 2020, passenger traffic showed a decline of -28.4% versus previously projected volumes and by -26.2% year-over-year as compared to 2019. The steepest reductions were recorded in Asia-Pacific, Middle East and Europe of -38.9%, -28.1% and -22.4% respectively.

The second quarter started to reveal even grimmer situation for air transport and consequently, the resultant impact on airports.

### **The second quarter of 2020: “The Ugly”**

The second quarter was truly unprecedented: 17,000 wide bodies, narrow bodies and regional jets, or about two-thirds (64%) of the global fleet, remained on the ground.

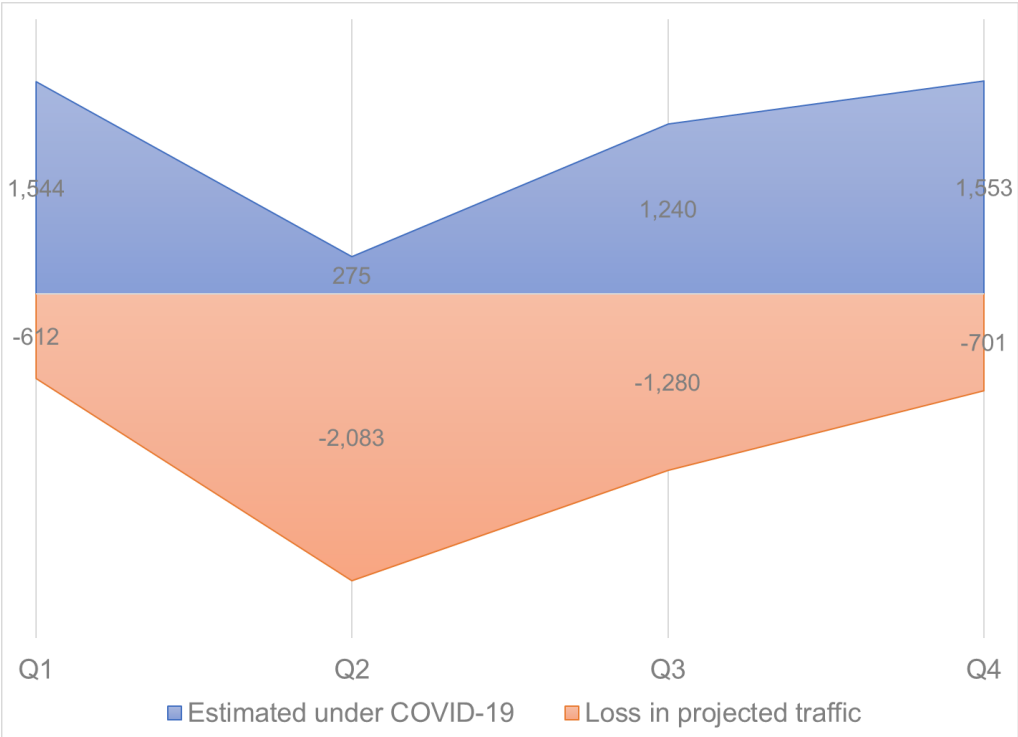
From an air traffic management perspective, traffic in most regions declined by more than -80%, with regional movement declines varying from a -90% decline in South America to a -56% decrease in North America—testament to the higher resilience of domestic traffic in light of severe restrictions on international flights. Nevertheless, even these figures do not represent the complete picture of the ongoing calamity in air transport as many airlines continue flying near-empty aircraft.

As for airports, passenger traffic volumes declined by 90% in April on a global scale, ranging from -97% in Europe to -70% in Asia-Pacific. Assuming only slight improvements in aviation activity with slow and expected gradual removal of travel restrictions in few aviation markets as we approach the summer months, the estimated passenger traffic volume decline is expected to dive further.

The loss is expected to be -88.4% in the second quarter of 2020 versus projected levels under a pre-COVID-19 trajectory. Consequently, the figures suggest that aviation will bear the heaviest impact of the Great Lockdown in the second quarter of 2020 assuming gradual alleviation of confinement measures and general reopening of the economies across the globe.

This is illustrated in Chart 2 and Table 2 below. On a global scale, airports are expected to lose more than 2 billion passengers in the second quarter of 2020 alone and 4.7 billion for the whole of 2020. In all six regions, the decline exceeds -84% from the projected baseline in the second quarter, and goes beyond -90% in the Middle East, Latin America-Caribbean and Europe.

**Chart 2: Reduction in global quarterly passenger traffic 2020 (million passengers)**



Source: ACI World

**Table 2: Quarterly airport passenger traffic volumes in 2020 by region: forecasted (pre-COVID-19) versus estimated (COVID-19) (million passengers)**

Region	Q1	Q2	Q3	Q4	2020
<b>Forecasted (pre-COVID-19)*</b>					
Africa	55	58	68	61	241
Asia-Pacific	854	834	852	854	3,395
Europe	488	664	768	561	2,482
Latin America-Caribbean	169	160	170	155	654
Middle East	113	97	110	108	429
North America	476	545	552	515	2,088
<b>World</b>	<b>2,155</b>	<b>2,358</b>	<b>2,521</b>	<b>2,254</b>	<b>9,288</b>
<b>Estimated under COVID-19**</b>					
Africa	43	7	37	40	127
Asia-Pacific	522	102	413	561	1,598
Europe	379	63	281	343	1,065
Latin America-Caribbean	137	13	97	119	365
Middle East	81	4	59	83	228
North America	383	86	353	408	1,229
<b>World</b>	<b>1,544</b>	<b>275</b>	<b>1,240</b>	<b>1,553</b>	<b>4,611</b>
<b>Reduction</b>					
Africa	-12	-51	-31	-20	-114
Asia-Pacific	-332	-732	-439	-293	-1,797
Europe	-110	-601	-487	-218	-1,416
Latin America-Caribbean	-32	-147	-73	-37	-289
Middle East	-32	-93	-51	-25	-201
North America	-94	-459	-199	-107	-859
<b>World</b>	<b>-612</b>	<b>-2,083</b>	<b>-1,280</b>	<b>-701</b>	<b>-4,676</b>
<b>% Change</b>					
Africa	-22.2%	-88.4%	-45.1%	-33.6%	-47.3%
Asia-Pacific	-38.9%	-87.8%	-51.5%	-34.3%	-52.9%
Europe	-22.4%	-90.5%	-63.4%	-38.9%	-57.1%
Latin America-Caribbean	-19.0%	-91.8%	-43.2%	-23.7%	-44.2%
Middle East	-28.1%	-95.8%	-46.1%	-23.4%	-46.9%
North America	-19.7%	-84.2%	-36.1%	-20.8%	-41.1%
<b>World</b>	<b>-28.4%</b>	<b>-88.4%</b>	<b>-50.8%</b>	<b>-31.1%</b>	<b>-50.4%</b>

\*The "pre-COVID-19" scenario based on adjusted World Airport Traffic Forecasts (WATF) 2019–2040 considering latest insights provided by ACI Regional offices and other inputs

\*\*Estimated passenger traffic volumes based on the Official Airline Guide (OAG) scheduled seat capacity and broad range of inputs provided by ACI Regional offices and industry experts (Source: ACI World)

## Traffic mix and seasonality

Even though the state of aviation under COVID-19 differs from one country to another and different regions are affected to varying degrees, two patterns play a major role:

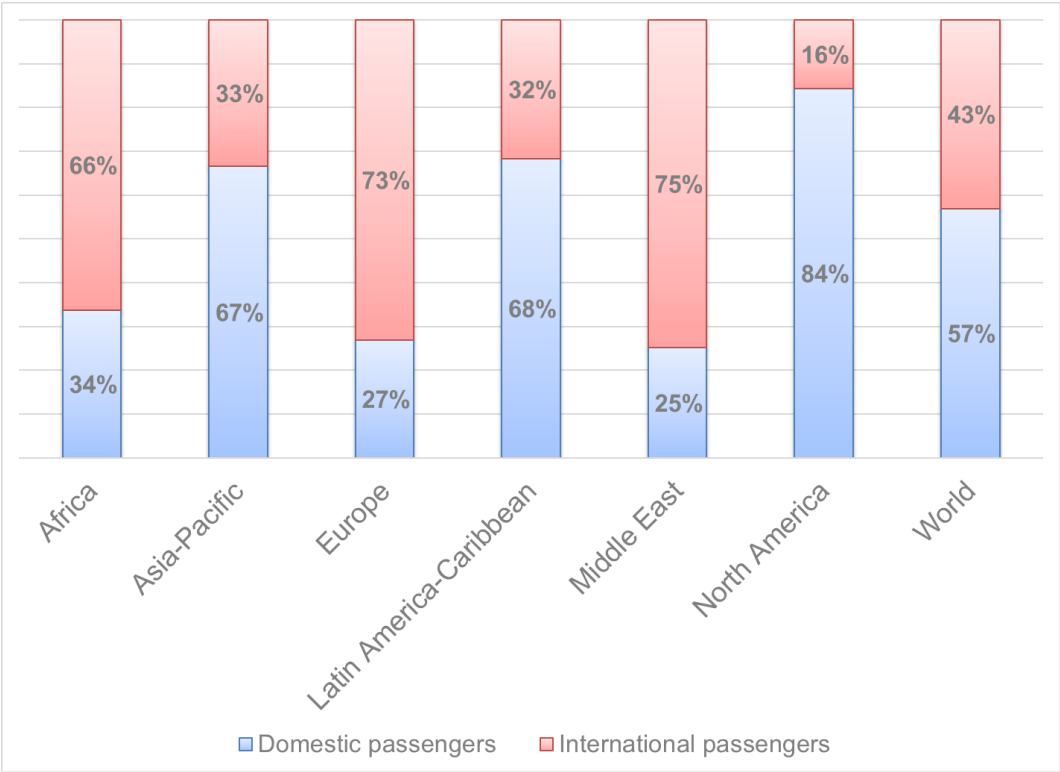
1. traffic mix in terms of relative proportions of domestic versus international traffic, and
2. seasonality patterns.

Evidence suggests that aviation markets with a significant share of domestic operations, which are often characterized by vast geography and sizable populations, are more resilient in the face of the ongoing health crisis.

China and the United States exemplify this pattern, as both countries continue to display a modest number of domestic flights. The major international aviation markets, on the other hand, demonstrate in general much deeper declines in traffic volumes.

Chart 3 illustrates the contrast between Africa, Europe and Middle East, characterized by high proportions of international traffic of 66%, 73% and 75% respectively, and three other regions—Asia-Pacific, Latin-America/Caribbean and North America with international traffic proportions of 33%, 32% and 16% respectively.

**Chart 3: Share of domestic versus international passenger traffic by region (2018)**



Source: ACI World Airport Traffic Database 2020

As for seasonality patterns, these differ from one region to another, but two regions sit on the opposing ends of the spectrum. In Europe, monthly passenger traffic variations reflect the mainstream holiday period from May to September and movements from north to south. Asia-Pacific, on the other hand, is known for a relatively stable seasonality pattern and most major airports show negligible seasonal variations.

As the COVID-19 continues to unfold in Europe and North America, which are the second and third largest aviation markets respectively and are tightly interrelated with transatlantic routes, there is an additional downside risk to the recovery.

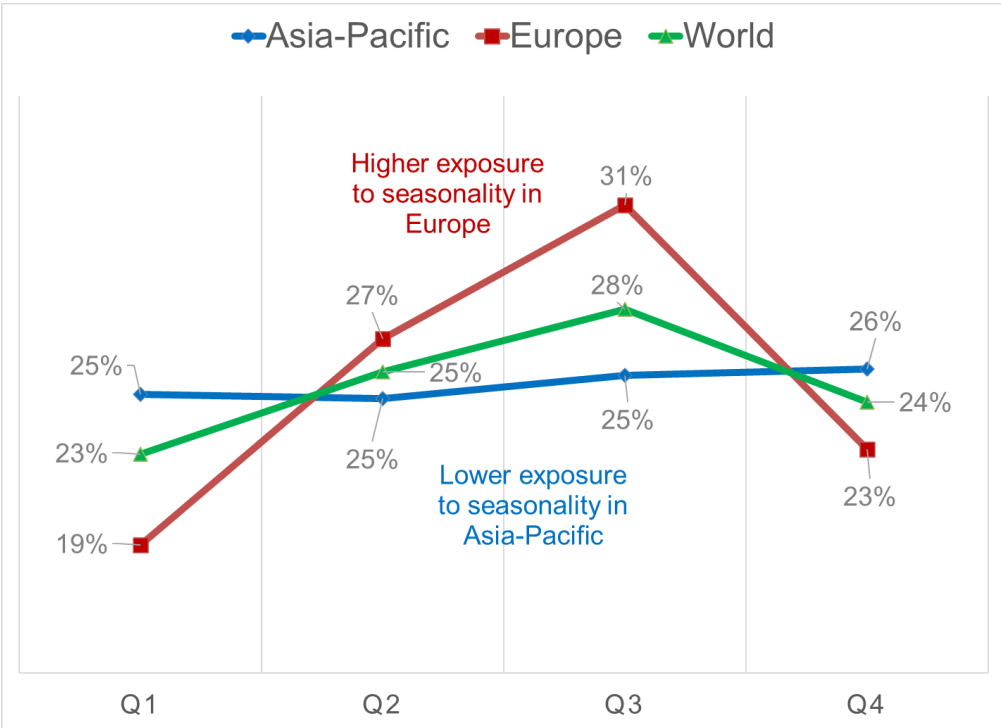
A prolonged health crisis may translate into a “lost summer” for the European airports, particularly those in the Mediterranean countries as well as the airports in the Central

and Northern Europe. Airports in North America and the Caribbean are also likely to suffer from hampered demand for international vacations, from the outbound and inbound traffic perspective, respectively.

Seasonal airports that had economic challenges even during normal times may lose a higher share of annual passenger traffic.

Chart 4 illustrates higher exposure of Europe to seasonality and hence a higher potential impact of COVID-19 on the year-end traffic results.

**Chart 4: Seasonality patterns for selected regions – quarterly share of annual passenger traffic, 2017–2019 weighted average**



Source: ACI World Airport Traffic Database 2020

### Impact on airport revenues

Airports are multi-faceted businesses, engaging in commercial relationships with airlines, passengers and concessionaires. They receive their revenues from two primary sources: aeronautical activities and non-aeronautical activities.

Both revenue streams are vital to support the operation and sustainable development of airports.

They are used to recover the large capital costs incurred by airports as the airport industry is highly asset-intensive, as well as operating expenses and especially staff expenses.



Revenue channels are paralyzed by the unprecedented reductions in aviation and commercial activity.

The fall in the number of passengers and flights has resulted in reduced revenues from airport charges (landing and parking charges paid by airlines for instance, and passenger service charges and security charges paid by passengers).

Considering the ongoing large-scale lockdowns, however, commercial activities are equally affected.

Non-aeronautical sources of revenue usually provide diversification of airport income streams and serve as an additional cushion during economic downturns.

In a similar way, revenues from commercial activities have plummeted forcing many outlets to shut down.

Airports are, at the same time, taking all possible measures to preserve financial stability. They are reducing, to a minimum, variable costs by closing portions of infrastructure, furloughing staff, and postponing capital expenditure.

These difficult decisions represent serious impacts for the communities that airports serve. They are not taken lightly but are necessary in response to the crisis.

As can be seen in Table 3, the reduction of revenues from the projected baseline is likely to reach -90% on a global level in the second quarter of 2020.

Europe is expected to be the hardest-hit region as it may lose close to \$37 billion (figures in US Dollars) in revenues or more than 60%, followed by Asia-Pacific with \$29.4 billion or -59%.

As for the 2020 year-end, estimates point to a decline of \$97.4 billion or -56.7%. Chart 5 illustrates that the brunt of the hit will be concentrated in the second and third quarters—falling by \$39.2 and \$27.7 billion, respectively.

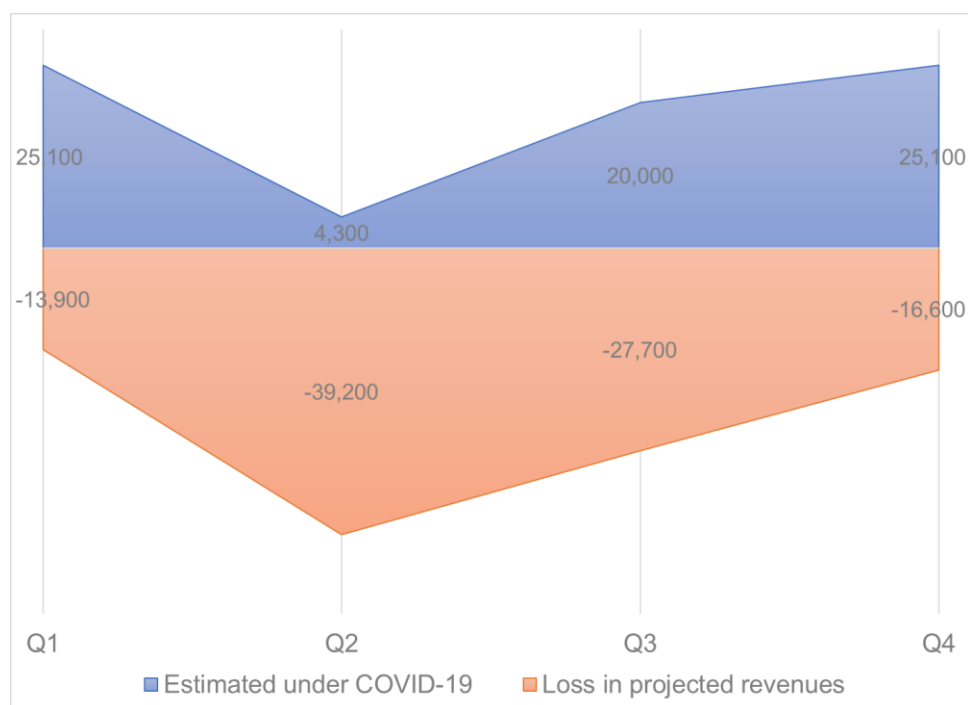
**Table 3: Quarterly total airport revenues in 2020 by region: forecasted (pre-COVID-19) versus estimated (COVID-19) (million USD)**

Region	Q1	Q2	Q3	Q4	2020
<b>Forecasted (pre-COVID-19)*</b>					
Africa	1,000	1,000	1,200	1,100	4,300
Asia-Pacific	12,400	12,200	12,600	12,700	49,900
Europe	11,600	15,700	18,500	13,500	59,300
Latin America-Caribbean	2,700	2,500	2,700	2,600	10,500
Middle East	3,300	3,100	3,600	3,200	13,200
North America	8,000	9,000	9,100	8,600	34,700
<b>World</b>	<b>39,000</b>	<b>43,500</b>	<b>47,700</b>	<b>41,700</b>	<b>171,900</b>
<b>Estimated under COVID-19**</b>					
Africa	700	100	600	700	2,100
Asia-Pacific	6,700	1,300	5,300	7,200	20,500
Europe	7,900	1,300	5,900	7,100	22,200
Latin America-Caribbean	1,900	200	1,400	1,700	5,200
Middle East	2,200	100	1,600	2,300	6,200
North America	5,700	1,300	5,200	6,100	18,300
<b>World</b>	<b>25,100</b>	<b>4,300</b>	<b>20,000</b>	<b>25,100</b>	<b>74,500</b>
<b>Reduction</b>					
Africa	-300	-900	-600	-400	-2,200
Asia-Pacific	-5,700	-10,900	-7,300	-5,500	-29,400
Europe	-3,700	-14,400	-12,600	-6,400	-37,100
Latin America-Caribbean	-800	-2,300	-1,300	-900	-5,300
Middle East	-1,100	-3,000	-2,000	-900	-7,000
North America	-2,300	-7,700	-3,900	-2,500	-16,400
<b>World</b>	<b>-13,900</b>	<b>-39,200</b>	<b>-27,700</b>	<b>-16,600</b>	<b>-97,400</b>
<b>% Change</b>					
Africa	-30.0%	-90.0%	-50.0%	-36.4%	-51.2%
Asia-Pacific	-46.0%	-89.3%	-57.9%	-43.3%	-58.9%
Europe	-31.9%	-91.7%	-68.1%	-47.4%	-62.6%
Latin America-Caribbean	-29.6%	-92.0%	-48.1%	-34.6%	-50.5%
Middle East	-33.3%	-96.8%	-55.6%	-28.1%	-53.0%
North America	-28.8%	-85.6%	-42.9%	-29.1%	-47.3%
<b>World</b>	<b>-35.6%</b>	<b>-90.1%</b>	<b>-58.1%</b>	<b>-39.8%</b>	<b>-56.7%</b>

\*The "pre-COVID-19" scenario based on adjusted World Airport Traffic Forecasts (WATF) 2019–2040 considering latest insights provided by ACI Regional offices and other inputs

\*\*Estimated passenger traffic volumes based on the Official Airline Guide (OAG) scheduled seat capacity and broad range of inputs provided by ACI Regional offices and industry experts (Source: ACI World)

**Chart 5: Reduction in global quarterly airport revenues 2020 (million USD)**



Source: ACI World

### Methodological note

- ACI World estimated the impact of the coronavirus outbreak 2019 (COVID-19) on the airport industry in terms of potential losses in traffic and revenues based primarily on two key data elements: estimated traffic considering the latest COVID-19 statistics and unit revenues derived from the Airport Key Performance Indicators 2020, as total airport revenues are largely a function of traffic, while unit revenues have remained stable in the recent years.
- Traffic estimates for Q1 2020 were generated using data collected by ACI World from airports for that period.
- The impact has been measured as a difference between the “business as usual scenario” (BAU) for Q1 2020 as well as year-end 2020 and the “COVID-19 scenario” with estimated traffic and revenues for Q1 2020 and year-end 2020, on a regional basis.
- The Q1 2020 traffic estimates, and hence the revenue figures, take into account the seasonality patterns for the year 2019 calculated on a regional basis.
- The BAU forecasts were calculated using the latest data up to December 2019 and projecting 1 year ahead. A combination forecast approach was used, which shows to be consistently performing adequately (mean absolute percentage error—MAPE < 2%) in cross-validation exercises.
- The impact of COVID-19 on passenger traffic for year-end 2020 was estimated under the assumption that most containment measures and flight restrictions will be lifted by the end of summer 2020. This implies a difficult second quarter for

the aviation industry, with a partial recovery in Q3 and Q4. However, the impact on passenger traffic is assumed to be long lasting, implying a slow and steady recovery possibly spanning far beyond the end of 2020.

- The revenue per passenger indicators (unit revenues) were calculated for airports on a country-by-country basis. In cases where the indicators were unavailable, regional indicators were applied as an approximation for the country-level indicators.
- Considering limited information on the impact of disease outbreaks on unit revenues, airport revenues were estimated under an assumption of slightly reduced unit revenues as agreed by a panel of experts. As such, the estimates represent an optimistic scenario, as it is highly likely that unit revenues will be more adversely impacted, both on the aeronautical and non-aeronautical sides of the business.

The main limitation of such methodology is that it does not consider additional factors affecting traffic volumes in parallel with COVID-19, such as macroeconomic ramifications of the ongoing crisis, changes in consumer behaviour and other structural shifts. As such, a fraction of the traffic and revenues losses can be accounted for factors either completely unrelated to COVID-19 or induced by COVID-19.

## Ends

1. Airports Council International (ACI), the trade association of the world's airports, was founded in 1991 with the objective of fostering cooperation among its member airports and other partners in world aviation, including the International Civil Aviation Organization, the International Air Transport Association and the Civil Air Navigation Services Organization. In representing the best interests of airports during key phases of policy development, ACI makes a significant contribution toward ensuring a global air transport system that is safe, secure, customer-centric and environmentally sustainable. As of January 2020, ACI serves 668 members, operating 1979 airports in 176 countries.