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Effects of Novel Coronavirus (COVID-19) on Civil Aviation: Economic Impact Analysis

Montréal, Canada

8 May 2020

Air Transport Bureau

Contents

Executive Summary: Economic Impact in Brief

Figures and estimates herein are subject to substantial changes, and will be updated with the situation evolving and more information available.

Estimated results in brief

The latest estimates indicate that the possible COVID-19 impact on scheduled international passenger traffic for the full year 2020, compared to Baseline (business as usual, originally-planned), would be:

V-shaped path (Scenario 1: a first sign of recovery in late May)

- Overall reduction ranging from **38% to 55% of seats offered by airlines**
- Overall reduction of **861 to 1,292 million passengers**
- Approx. **USD 151 to 228 billion potential loss** of gross operating revenues of airlines

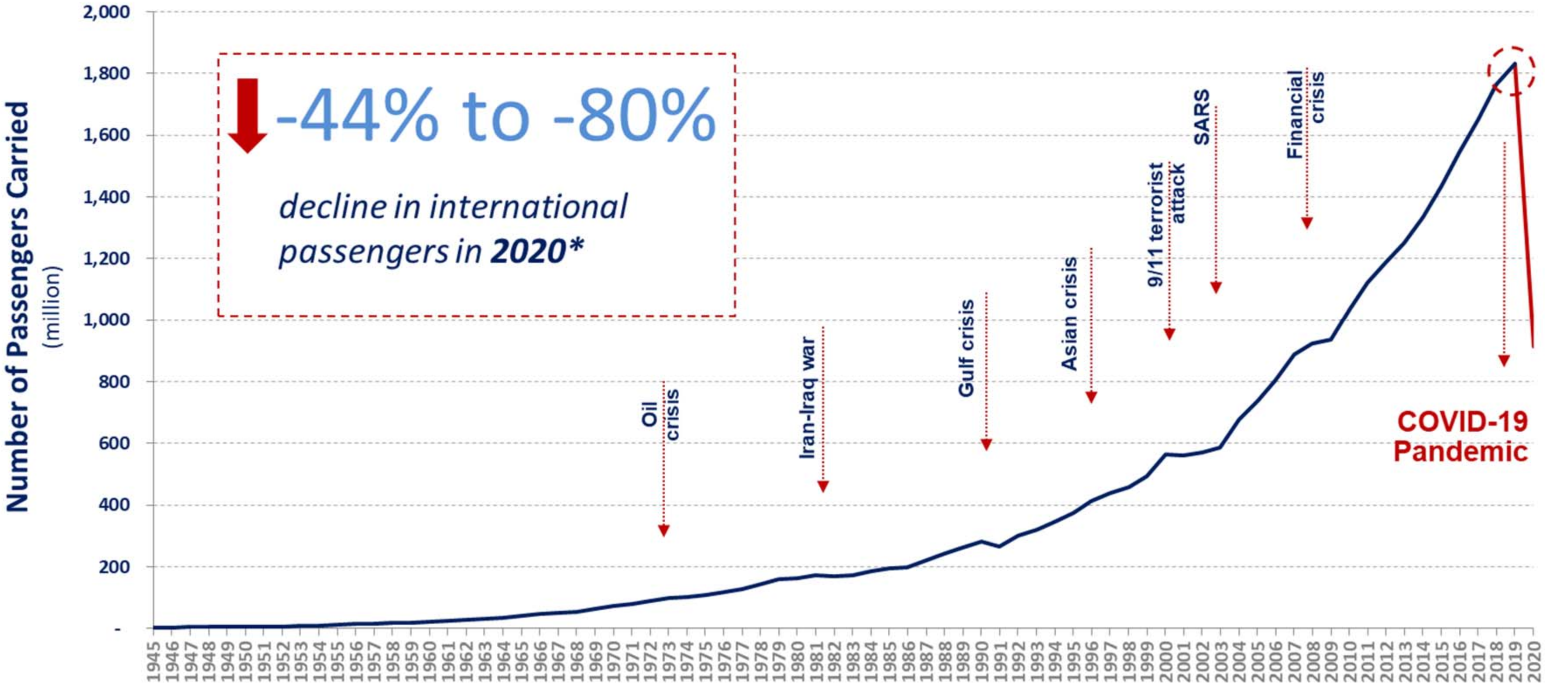
U-shaped path (Scenario 2: bottom out and pick up in third quarter or later)

- Overall reduction ranging from **48% to 71% of seats offered by airlines**
- Overall reduction of **1,108 to 1,524 million passengers**
- Approx. **USD 194 to 269 billion potential loss** of gross operating revenues of airlines

The impacts depend on duration and magnitude of the outbreak and containment measures, the degree of consumer confidence for air travel, and economic conditions, etc.

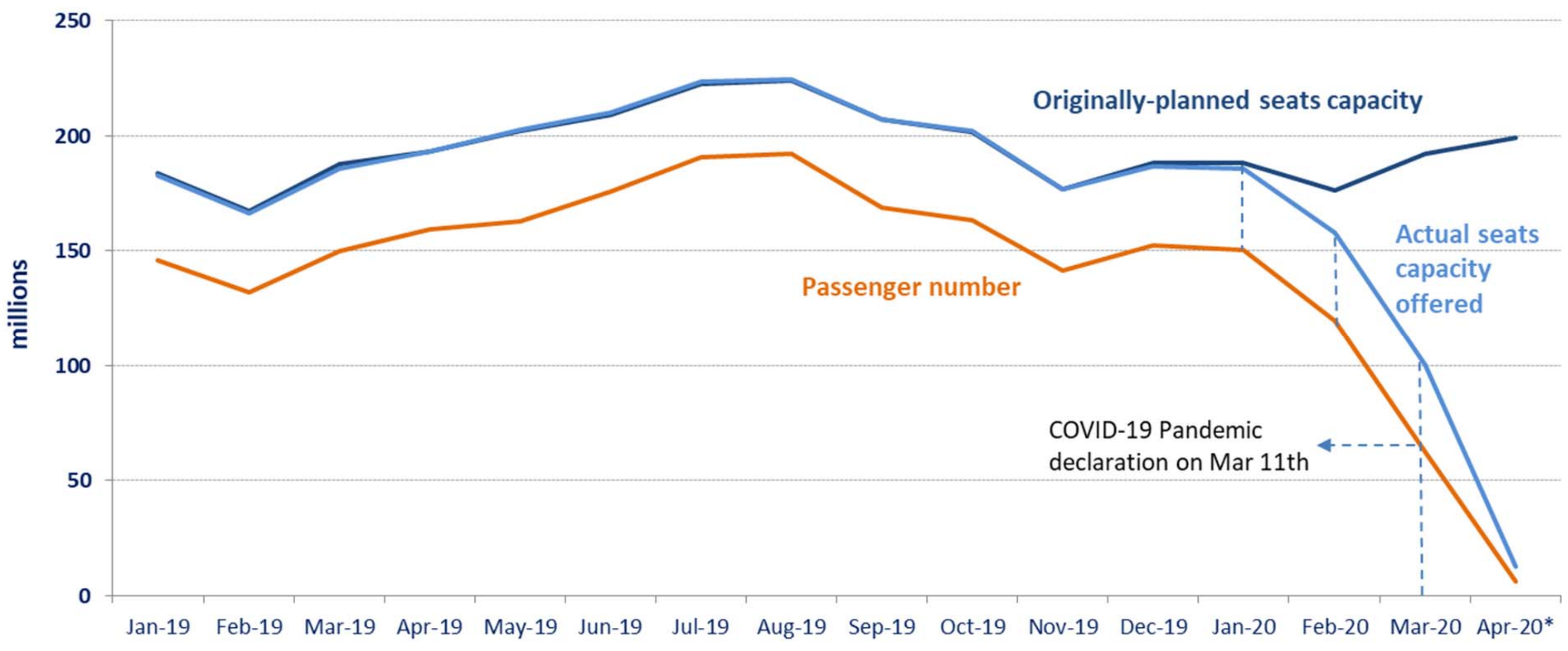
International passenger traffic collapses with unprecedented decline in history

World international passenger traffic evolution 1945 – 2020*



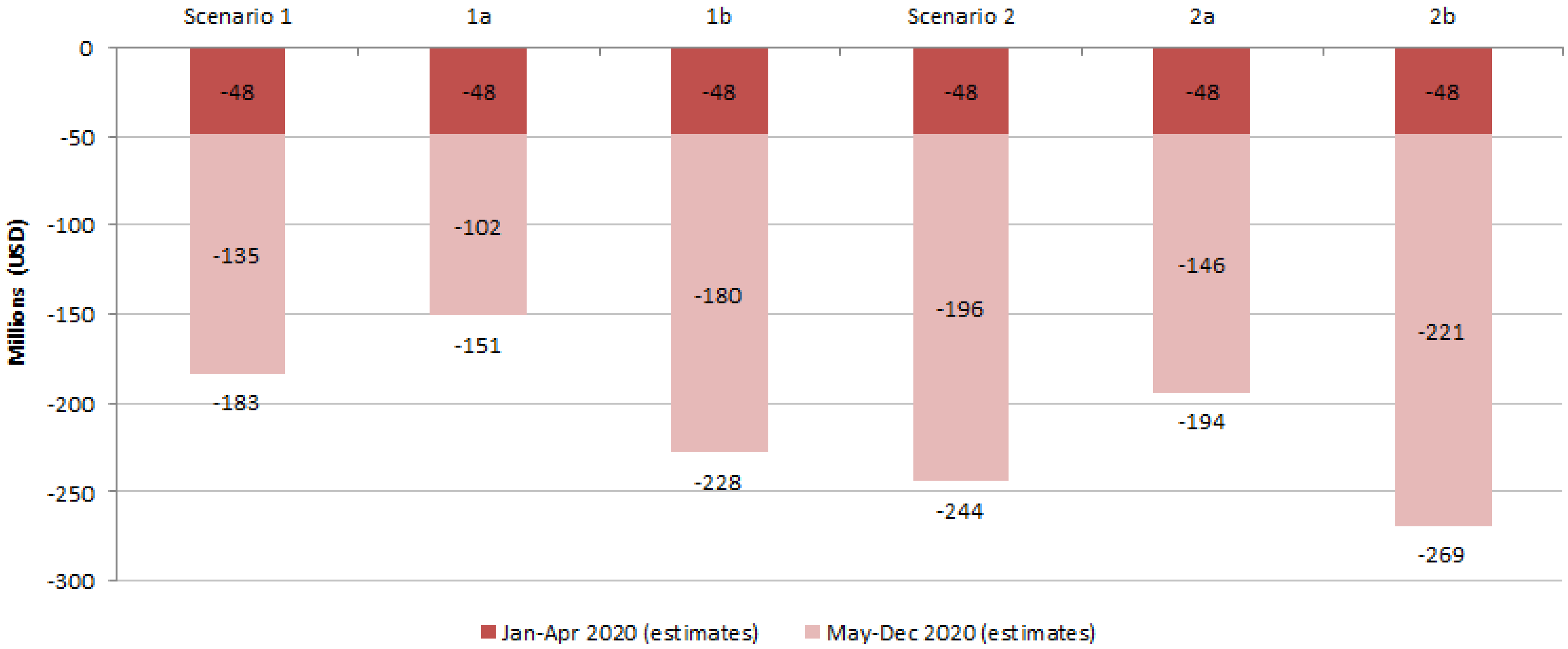
Drastic capacity cut along with dramatic drop in demand

Comparison of international passenger numbers and capacity



Source: ICAO ADS-B and OAG plus estimates

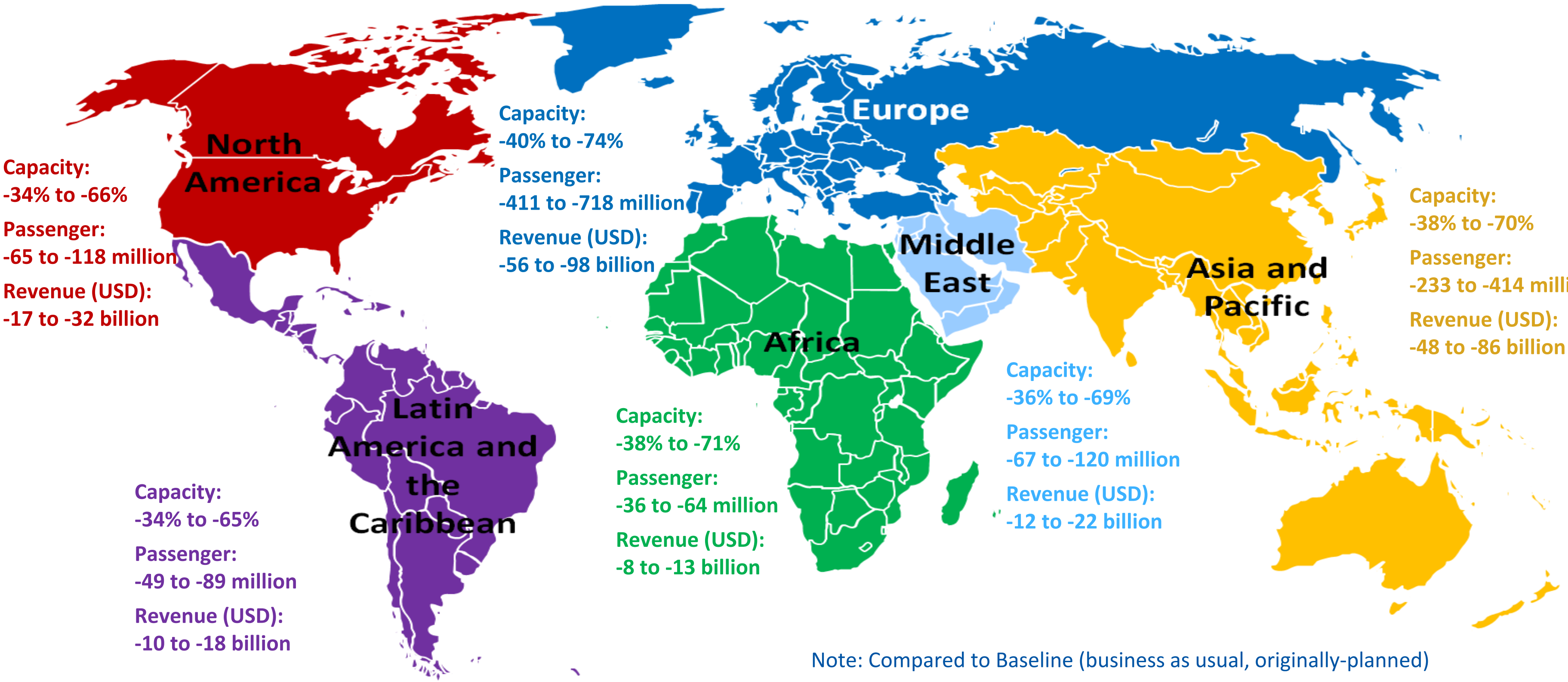
Approximately USD 48 billion international passenger revenue loss from Jan to Apr 2020



Note: Compared to Baseline (business as usual, originally-planned)

Source: ICAO estimates

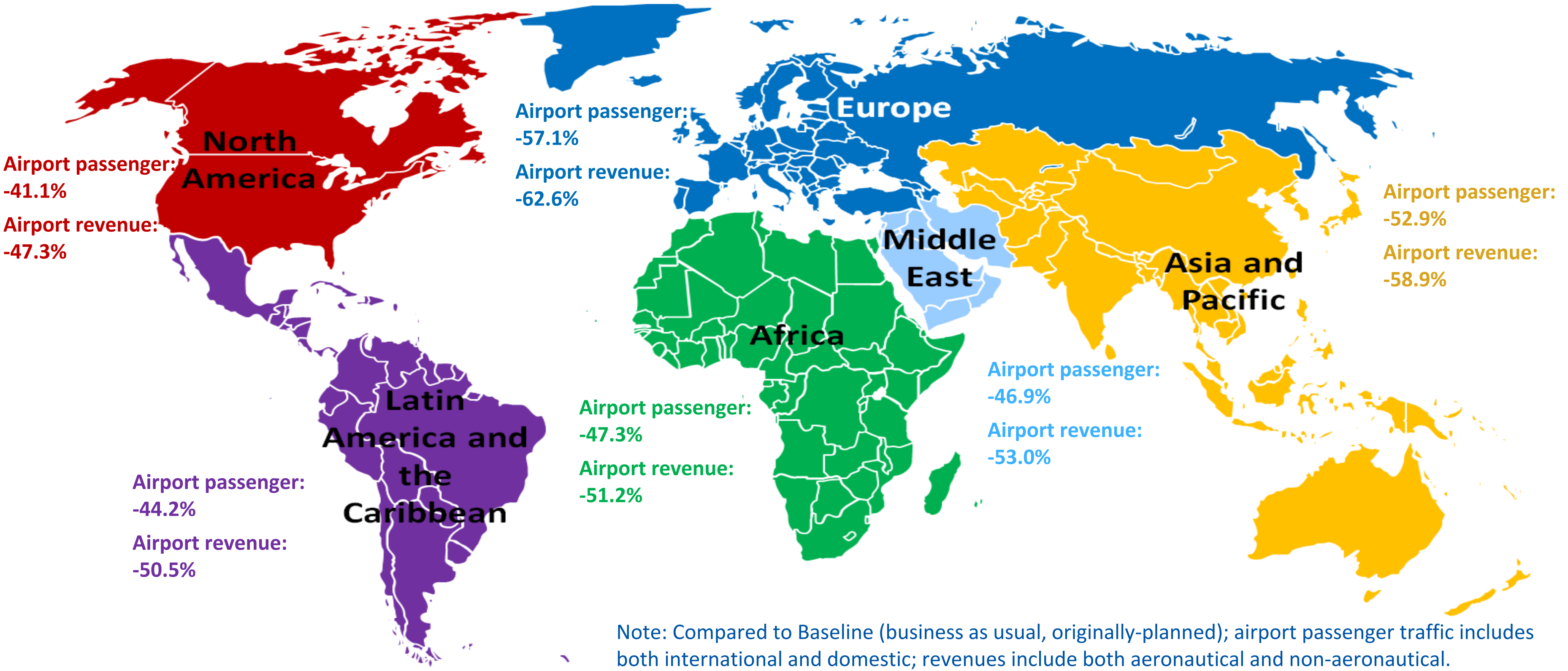
Estimated impact on international passenger traffic and revenues by region for 2020



Note: Compared to Baseline (business as usual, originally-planned)

Source: ICAO estimates

Estimated impact on airport passenger traffic and revenues by region for 2020 (by ACI)



Note: Compared to Baseline (business as usual, originally-planned); airport passenger traffic includes both international and domestic; revenues include both aeronautical and non-aeronautical.

Source: ACI Advisory Bulletin – Economic Impact Assessment of COVID-19 on the Airport Business (dated 5 May 2020)

Global impact of COVID-19 on aviation, tourism, trade and economy

- **International air passenger traffic:** An overall reduction of international passengers ranging from 44% to 80% in 2020 compared to 2019 (by **ICAO**)
- **Airports**: An estimated loss of over 50% of passenger traffic and 57% or over USD97 billion airport revenues in 2020 compared to business as usual (by **ACI**)
- **Airlines**: A 48% decline of revenue passenger kilometres (RPKs, both international and domestic) in 2020 compared to 2019 (by **IATA**)
- **Tourism**: A decline in international tourism receipts of between USD 910 to 1,170 billion in 2020, compared to the USD 1.5 trillion generated in 2019, with 96% of worldwide destinations having travel restrictions (by **UNWTO**)
- **Trade**: A fall of global merchandise trade volume by between 13 and 32% in 2020 compared to 2019 (by **WTO**)
- **Global economy**: A projected -3% contraction in world GDP in 2020, far worse than during the 2008–09 financial crisis (by **IMF**)

Scenario Building

As overall severity and duration of the pandemic are still uncertain, six different recovery paths under two indicative scenarios are developed to explore the potential "short-term" economic implication of the COVID-19 pandemic.

Illustrative 3 scenarios: Baseline, V-shaped and U-shaped

- 3 scenarios to assess the possible economic impact of COVID-19:
  - **Baseline**: counterfactual scenario, in which the COVID-19 pandemic does not occur, that is, **originally-planned** or **business as usual**
  - **Scenario 1**: **V-shaped** path, normal shape for recession, a brief period of contraction followed by quick/smooth recovery
  - **Scenario 2**: **U-shaped** path, prolonged contraction and muted recovery, possibility of not to return to trend line growth (L-shaped)

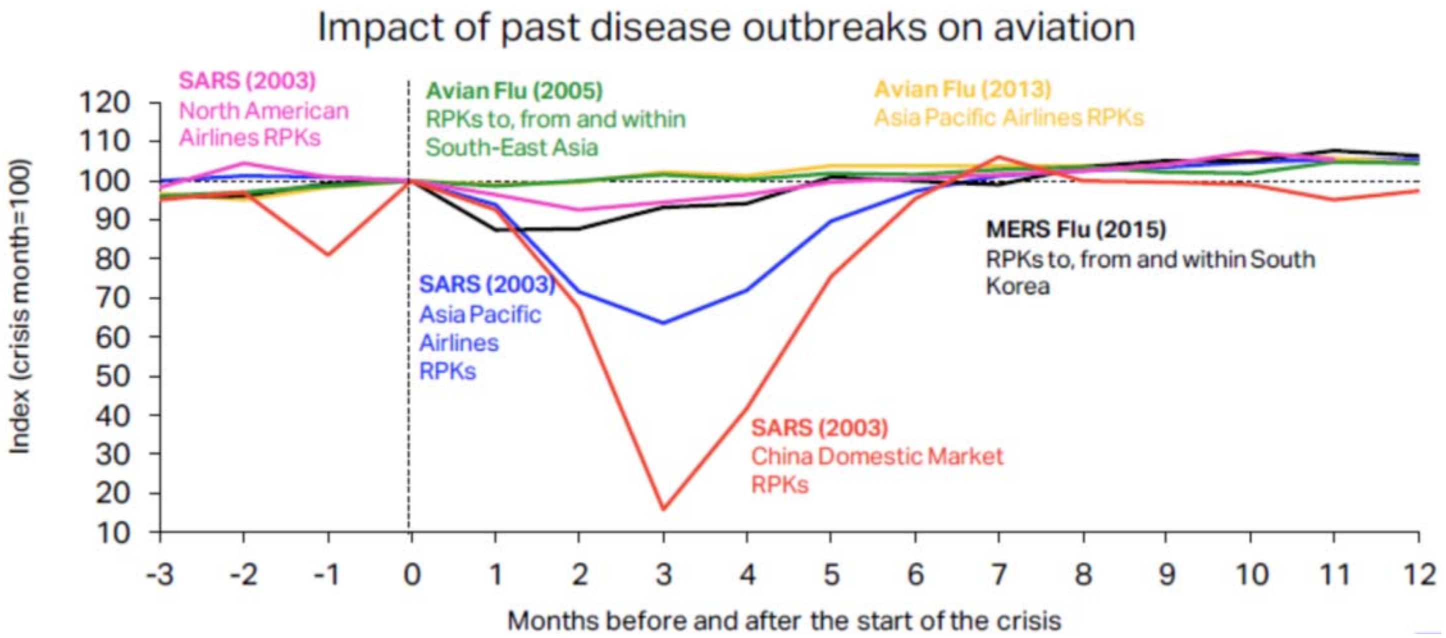
- Analytical focus, for the time being, on:
  - Near-term, i.e. monthly profile from **January to December 2020**
  - Scheduled **international passenger** traffic*

*: Preliminary scenario analysis for scheduled domestic passenger traffic is presented in **Appendix C**.

What does Scenario mean?

- Scenarios 1 and 2 are **not forecasts** of what is most likely to happen. Given a rapidly changing environment, these scenarios are merely indicative of **possible paths or consequential outcomes out of many**.
- The exact path (depth, length and shape) will depend upon various factors, inter alia, duration and magnitude of the outbreak and containment measures, availability of government assistance, consumer confidence, and economic conditions.
- Scenarios 1 and 2 are differentiated in terms of **supply (output)** and **demand (spending)** conditions, mainly, a) the timing and scale of airline capacity decline and recovery, and b) the degree of consumer confidence in air travel that can be translated into demand or load factor.

Previous outbreaks/pandemics had a V-shaped impact on air transport in Asia/Pacific



Source: IATA Economics using data from IATA Statistics

The impact of COVID-19 has already surpassed the 2003 SARS outbreak which had resulted in reduction of annual RPKs by 8% and USD 6 billion revenues for Asia/Pacific airlines. **The 6-month recovery path of SARS might not apply to today's situation.**

https://www.iata.org/en/iata-repository/publications/economic-reports/third-impact-assessment/

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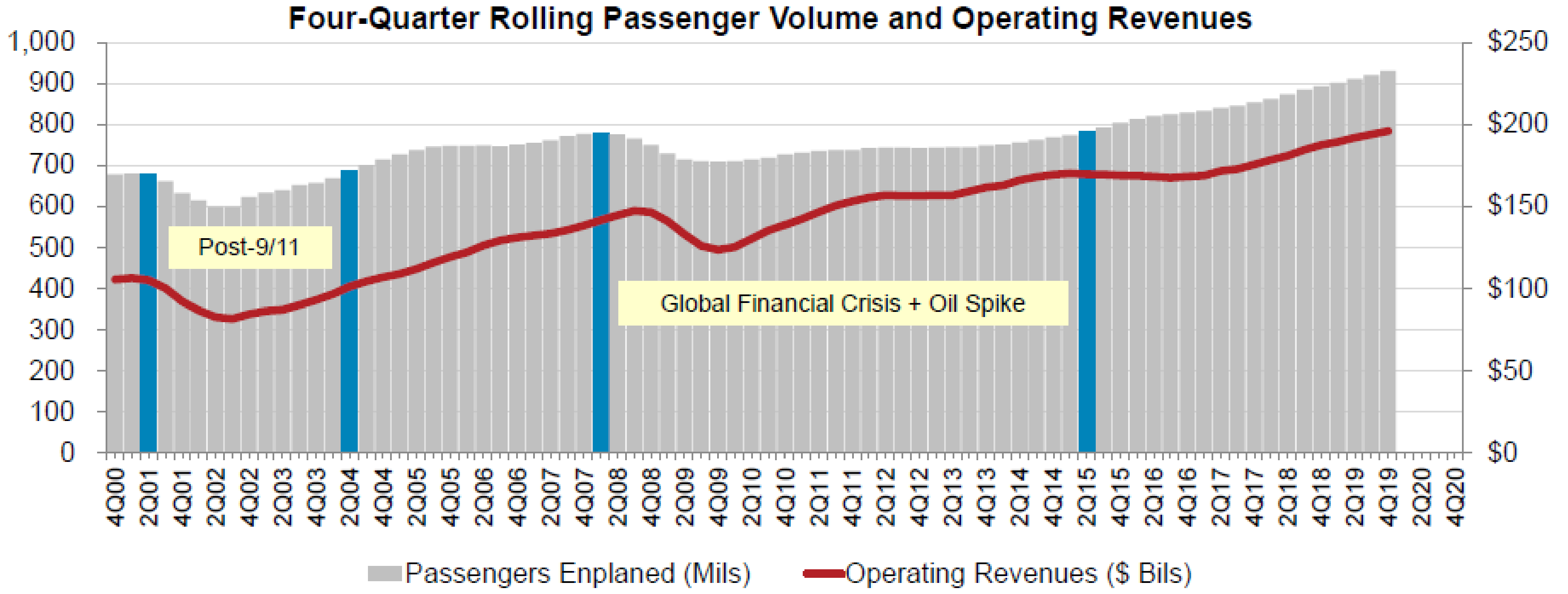
9/11 and global financial crisis had a U/L-shaped impact on air transport in United States



* Passengers enplaned systemwide on U.S. airlines in scheduled and nonscheduled services

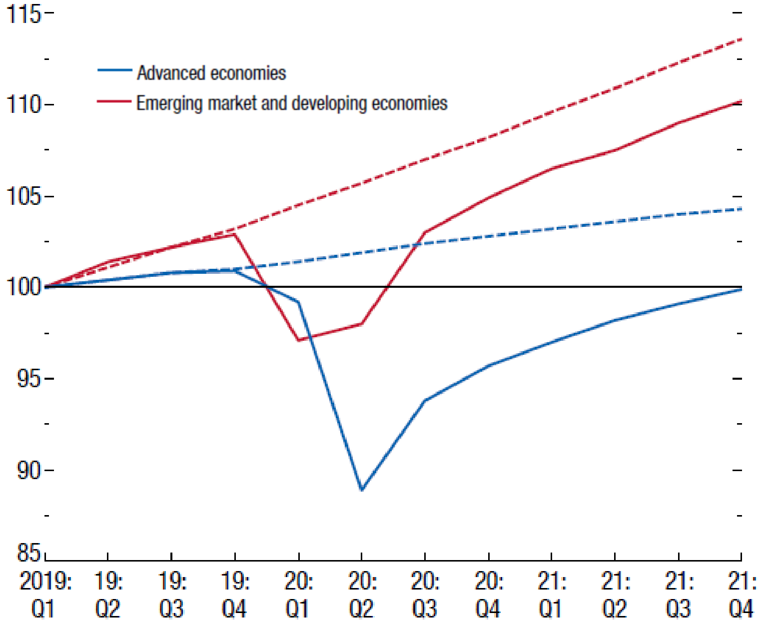
Source: A4A Passenger Airline Cost Index and Bureau of Transportation Statistics (Form 41 Schedule T1)

https://www.airlines.org/dataset/impact-of-covid19-data-updates/

Source: A4A Tracking the Impacts of COVID-19 - Some Early Indicators (updated on 29 April 2020)

What “recession shape” can be assumed given uncertainties surrounding the outlook?

World’s GDP Projections (by IMF)



(2019:Q1 = 100; dashed lines indicate estimates from January 2020 World Economic Outlook Update)

https://www.imf.org/en/Publications/WEO/Issues/2020/04/14/weo-april-2020

- How long will the pandemic last and what will be the severity levels?
- How deep and how long will the global recession be?
- How long will lockdowns and travel restrictions continue?
- How fast will consumer confidence in air travel be restored?
- Will there be a structural shift in industry and consumers’ behaviors?
- How long can the air transport industry withstand the finical adversity?

Source: IMF Word Economic Outlook (April 2020)

Due to extreme uncertainty, 6 different paths up till 4Q 2020 are considered

- **Baseline (counterfactual, no COVID-19 pandemic)**
  - **Originally-planned or business as usual**: trend line growth from 2019 level
- **Scenario 1 (V-shaped path, a first sign of recovery in late May)**
  - **Path 1**: Gradual capacity recovery to 80% of Baseline level by December but weak demand return
  - **Path 1a**: Swift capacity rebound to 90% pushed by pent-up demand
  - **Path 1b**: Slow progression to recover 60% capacity with downside risk in demand
- **Scenario 2 (U-shaped path, bottom out and pick up in 3/4Q or even later)**
  - **Path 2**: Slow progression of capacity recovery to 50% of Baseline with sluggish demand growth
  - **Path 2a**: Swift capacity rebound to 90% by December, outpacing demand recovery
  - **Path 2b**: Prolonged downturn towards 2021 with marginal seasonal adjustments

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Assumptions underlying Baseline Scenario (originally-planned, business as usual)

<table>
<tr><th rowspan="2">Assumptions (Global)</th><th colspan="2">Baseline (Originally-planned, business as usual)</th></tr>
<tr><th>Seat capacity</th><th>Passenger load factor</th></tr>
<tr><td>January 2020</td><td rowspan="3">Airlines' winter schedules filed with OAG as of 6 January 2020</td><td rowspan="12">Forecasted 2020 load factor by region/route group, based on ICAO long-term traffic forecasts (LTF), which was adjusted monthly by difference between 2019 actual monthly results (ICAO, IATA) and 2019 LTF forecasted load factor</td></tr>
<tr><td>February 2020</td></tr>
<tr><td>March 2020</td></tr>
<tr><td>April 2020</td><td rowspan="6">Maximum number of seats taken from airlines' summer schedules filed with OAG during the period from 6 January 2020 to 20 April 2020</td></tr>
<tr><td>May 2020</td></tr>
<tr><td>June 2020</td></tr>
<tr><td>July 2020</td></tr>
<tr><td>August 2020</td></tr>
<tr><td>September 2020</td></tr>
<tr><td>October 2020</td><td rowspan="3">Using 2019 winter schedule as the base, and applying the growth rate of 2019/2018</td></tr>
<tr><td>November 2020</td></tr>
<tr><td>December 2020</td></tr>
</table>

Note 1: A list of route group is shown in **Appendix E**.

Note 2: Average air fares (i.e. passenger yield multiplied by average trip distance) for each region/route group are used to estimate gross passenger operating revenues.

Assumptions underlying Scenario 1 (V-shaped)

Assumptions (Global)	Scenario 1 (V-shaped)	
	Seat capacity	Passenger load factor
January 2020	Actual capacity based on ICAO ADS-B data	January 2020 results by region/route group
February 2020		February 2020 results by region/route group
March 2020		20 to 25 percentage points lower than Baseline
April 2020	Twice of actual capacity based on ICAO ADS-B data from 1 to 15 April	30 percentage points lower than Baseline with adjustment of GDP impact by region/route group
May 2020	Most recent airlines' schedules filed with OAG or world average of -89% from Baseline whichever is smaller	25 (1), 20 (1a) and 30 (1b) percentage points lower than Baseline with adjustment of GDP impact by region/route group
June 2020	Most recent airlines' schedules filed with OAG or world average of -77% (1), -69% (1a) and -82% (1b) from Baseline whichever is smaller	20 (1), 10 (1a) and 25 (1b) percentage points lower than Baseline with adjustment of GDP impact by region/route group
July 2020	Most recent airlines' schedules filed with OAG or world average of -59% (1), -44% (1a) and -72% (1b) from Baseline whichever is smaller	15 (1), 5 (1a) and 20 (1b) percentage points lower than Baseline with adjustment of GDP impact by region/route group
August 2020	Most recent airlines' schedules filed with OAG or world average of -44% (1), -29% (1a) and -62% (1b) from Baseline whichever is smaller	10 (1), 5 (1a) and 20 (1b) percentage points lower than Baseline with adjustment of GDP impact by region/route group
September 2020	Most recent airlines' schedules filed with OAG or world average of -34% (1), -24% (1a) and -55% (1b) from Baseline whichever is smaller	10 (1), 5 (1a) and 25 (1b) percentage points lower than Baseline with adjustment of GDP impact by region/route group
October 2020	Most recent airlines' schedules filed with OAG or world average of -29% (1), -18% (1a) and -50% (1b) from Baseline whichever is smaller	
November 2020	Most recent airlines' schedules filed with OAG or world average of -24% (1), -13% (1a) and -45% (1b) from Baseline whichever is smaller	
December 2020	Most recent airlines' schedules filed with OAG or world average of -19% (1), -9% (1a) and -40% (1b) from Baseline whichever is smaller	10 (1), 5 (1a) and 20 (1b) percentage points lower than Baseline with adjustment of GDP impact by region/route group

Assumptions underlying Scenario 2 (U-shaped)

Assumptions (Global)	**Scenario 2 (U-shaped)**	
	Seat capacity	Passenger load factor
January 2020	Actual capacity based on ICAO ADS-B data	January 2020 results by region/route group
February 2020		February 2020 results by region/route group
March 2020		25 percentage points lower than Baseline
April 2020	Twice of actual capacity based on ICAO ADS-B data from 1 to 15 April	30 percentage points lower than Baseline with adjustment of GDP impact by region/route group
May 2020	Most recent airlines' schedules filed with OAG or world average of -94% from Baseline whichever is smaller	30 (2 & 2b) and 25 (2a) percentage points lower than Baseline with adjustment of GDP impact by region/route group
June 2020		25 (2 & 2a) and 30 (2b) percentage points lower than Baseline with adjustment of GDP impact by region/route group
July 2020	Most recent airlines' schedules filed with OAG or world average of -86% (2), -79% (2a) and -89% (2b) from Baseline whichever is smaller	25 (2 & 2b) and 20 (2b) percentage points lower than Baseline with adjustment of GDP impact by region/route group
August 2020	Most recent airlines' schedules filed with OAG or world average of -74% (2), -54% (2a) and -84% (2b) from Baseline whichever is smaller	20 (2), 15 (2a) and 25 (2b) percentage points lower than Baseline with adjustment of GDP impact by region/route group
September 2020	Most recent airlines' schedules filed with OAG or world average of -67% (2), -34% (2a) and -84% (2b) from Baseline whichever is smaller	
October 2020	Most recent airlines' schedules filed with OAG or world average of -62% (2), -24% (2a) and -79% (2b) from Baseline whichever is smaller	15 (2), 10 (2a) and 25 (2b) percentage points lower than Baseline with adjustment of GDP impact by region/route group
November 2020	Most recent airlines' schedules filed with OAG or world average of -57% (2), -16% (2a) and -79% (2b) from Baseline whichever is smaller	
December 2020	Most recent airlines' schedules filed with OAG or world average of -52% (2), -10% (2a) and -79% (2b) from Baseline whichever is smaller	15 (2), 10 (2a) and 20 (2b) percentage points lower than Baseline with adjustment of GDP impact by region/route group

Data used for scenario analysis

- **Seat capacity (Baseline):** OAG airlines schedule data; Route Online; and airline websites
- **Seat capacity (actual):** ICAO ADS-B operational data
- **Load factor:** ICAO long-term traffic forecasts (LTF); ICAO statistical reporting forms; IATA economics data; and airline news release
- **Historical passenger traffic**: ICO Annual Report of the Council, and ICAO statistical reporting forms
- **Yield:** ICAO revenue-cost analysis of airlines (RCA); and ICAO-ICM Marketing Information Data Transfer (MIDT passenger origin-destination)
- **Macroeconomic factors:** Income elasticity of demand estimated for ICAO LTF; and IMF economic outlook data

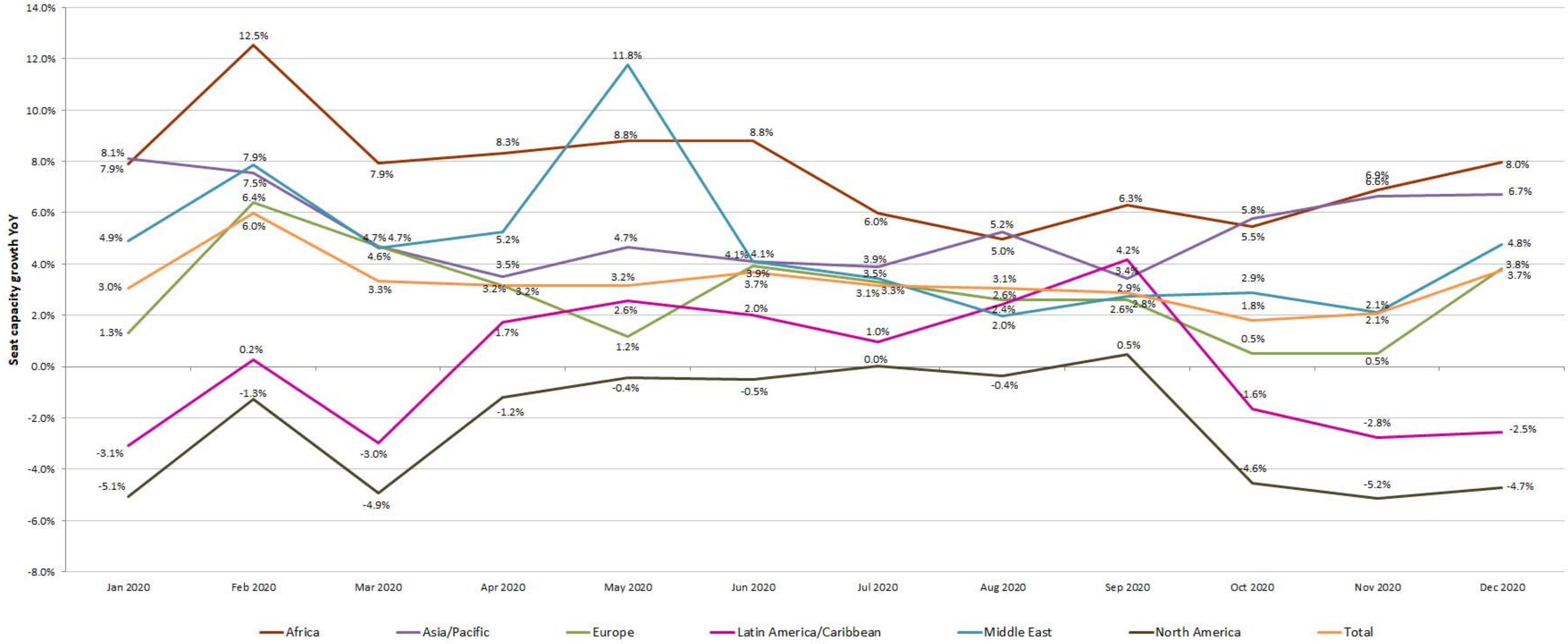
Scenario Analysis

Figures and estimates herein are <u>subject to substantial changes</u>, and will be updated with the situation evolving and more information available.

Impact on International Passenger Seat Capacity (Supply)

- Prior to the outbreak, airlines had planned to increase seat capacity by **3.2%** for 2020, compared to 2019.
- According to the latest estimates, passenger seat capacity could instead drop from the above Baseline by **38% to 55%** (Scenario 1) and **48% to 71%** (Scenario 2).
- This capacity level would be **36% to 54%** (Scenario 1) and **46% to 70%** (Scenario 2) below the 2019 level.
- Biggest capacity reduction (%) is expected to be in Europe, followed by Africa and Asia/Pacific.

Baseline:
3.2% seat capacity increase from 2019



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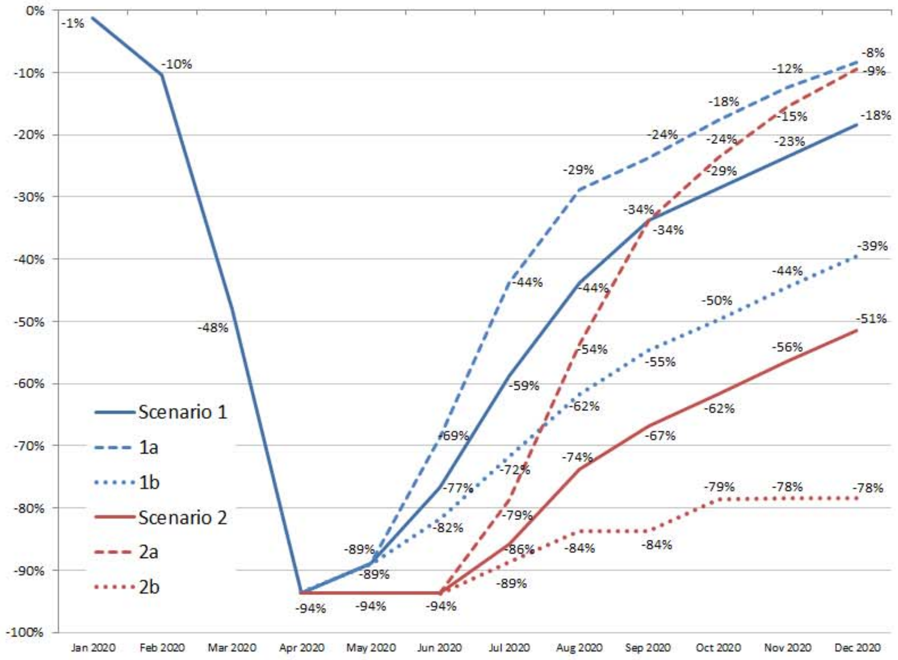
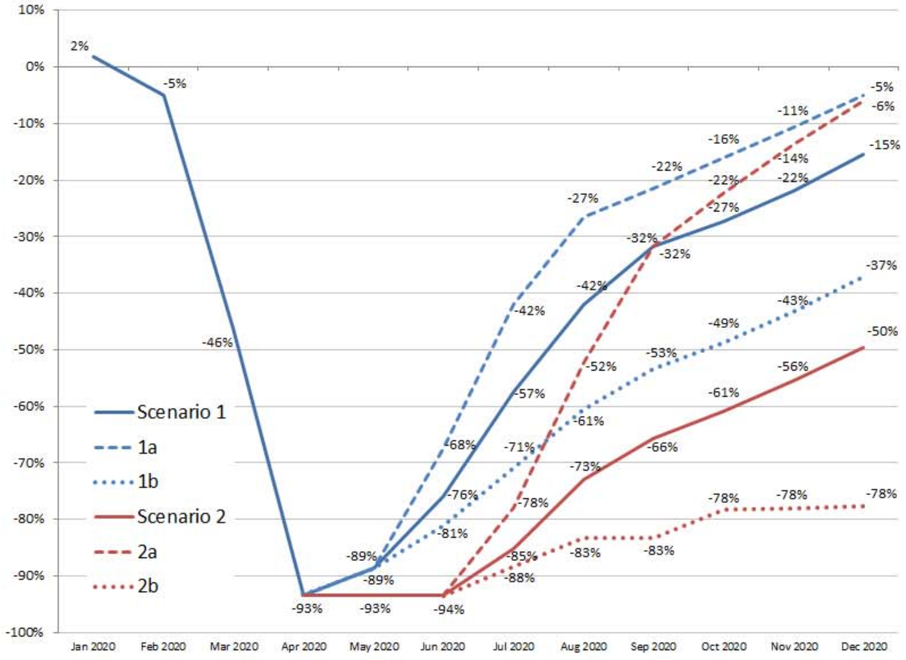
Scenarios 1 & 2: seat capacity reduction by 38 - 71% from Baseline and 36 - 70% from 2019

Comparison to Baseline



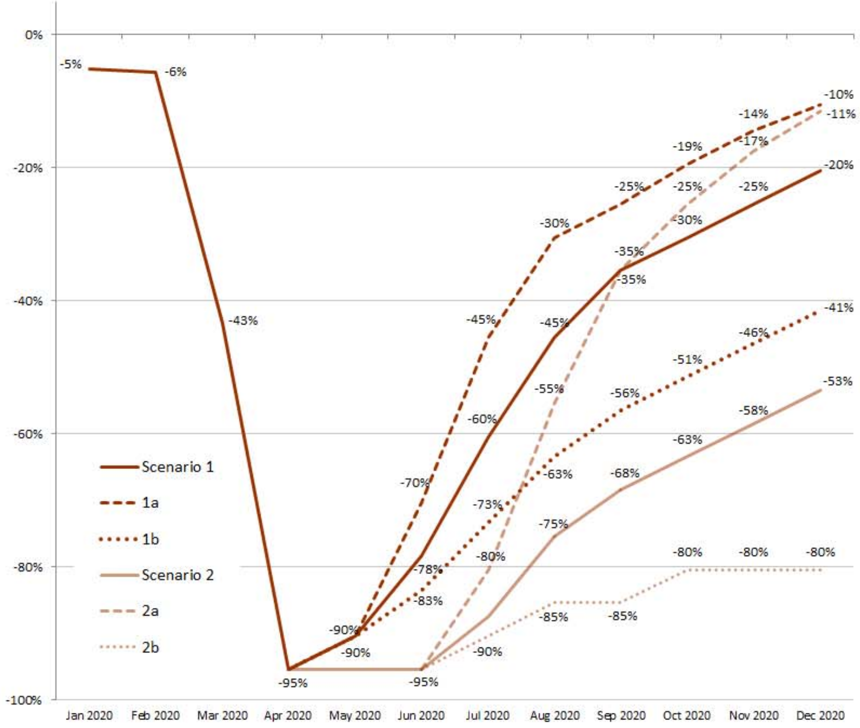
Comparison to 2019 (YoY)



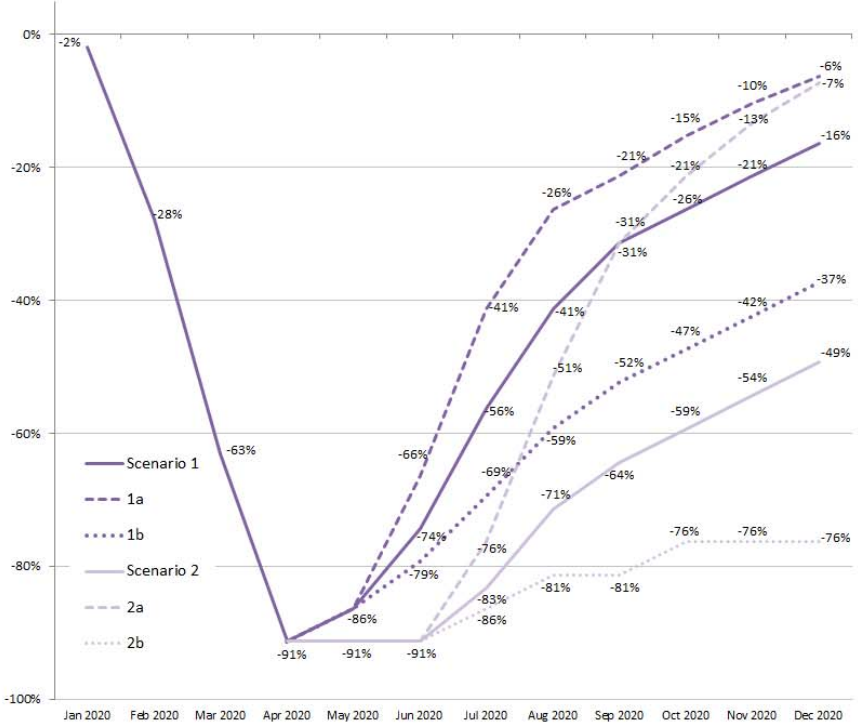
Source: ICAO estimates based on ICAO ADS-B, OAG, Routes Online and airline websites

Break-down of seat capacity reduction from Baseline by region (1)

Africa

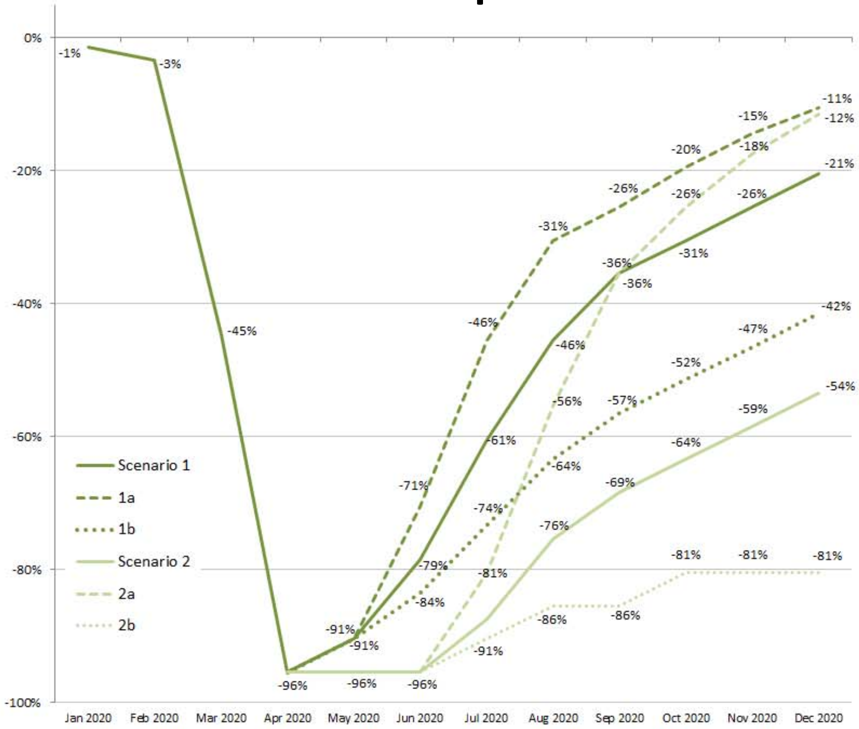


Asia/Pacific

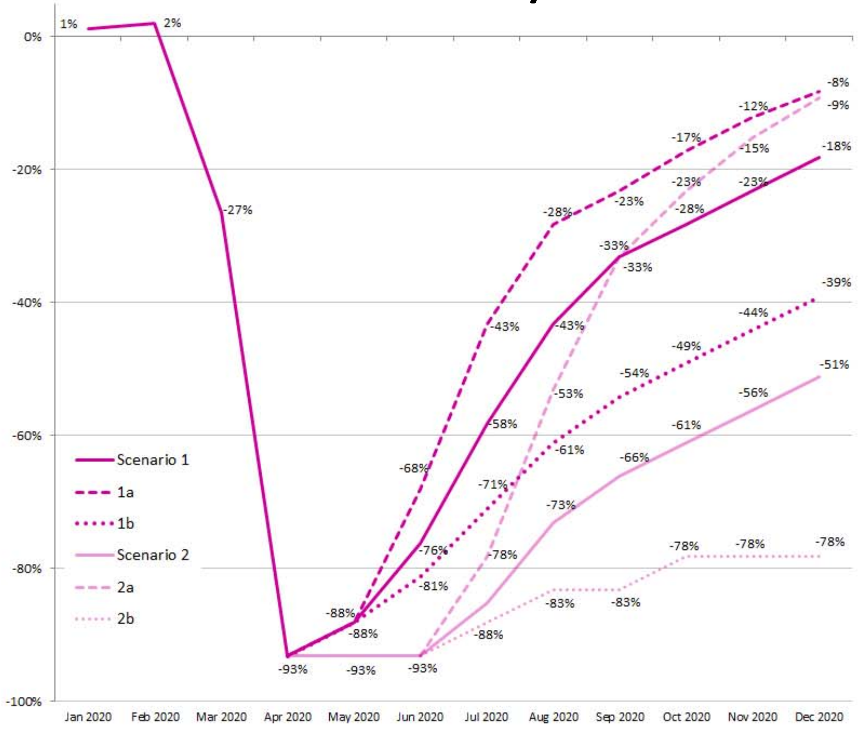


Break-down of seat capacity reduction from Baseline by region (2)

Europe



Latin America/Caribbean



Source: ICAO estimates based on ICAO ADS-B, OAG, Routes Online and airline websites

Break-down of seat capacity reduction from Baseline by region (3)

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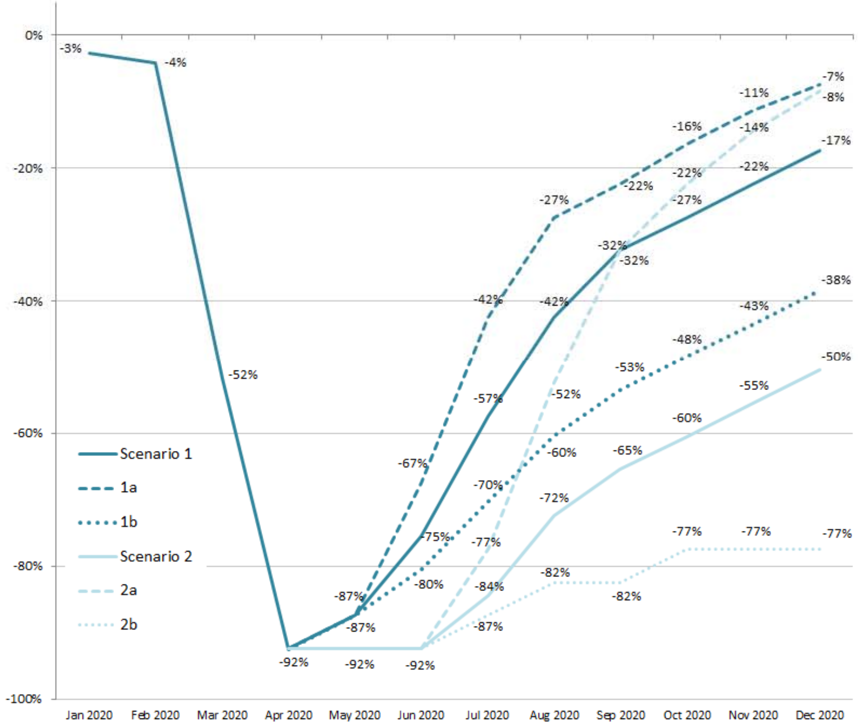
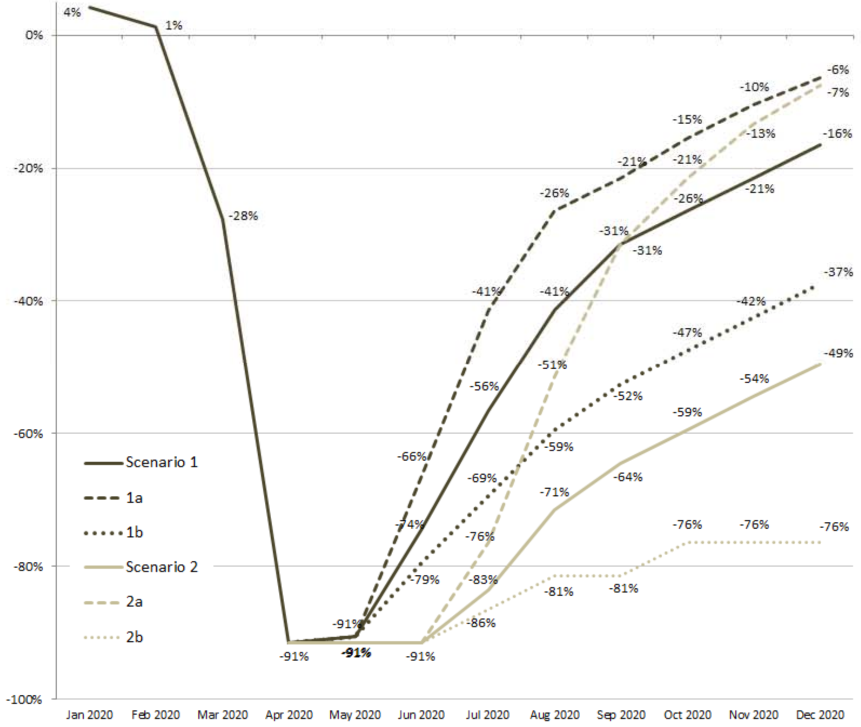
Middle East



North America

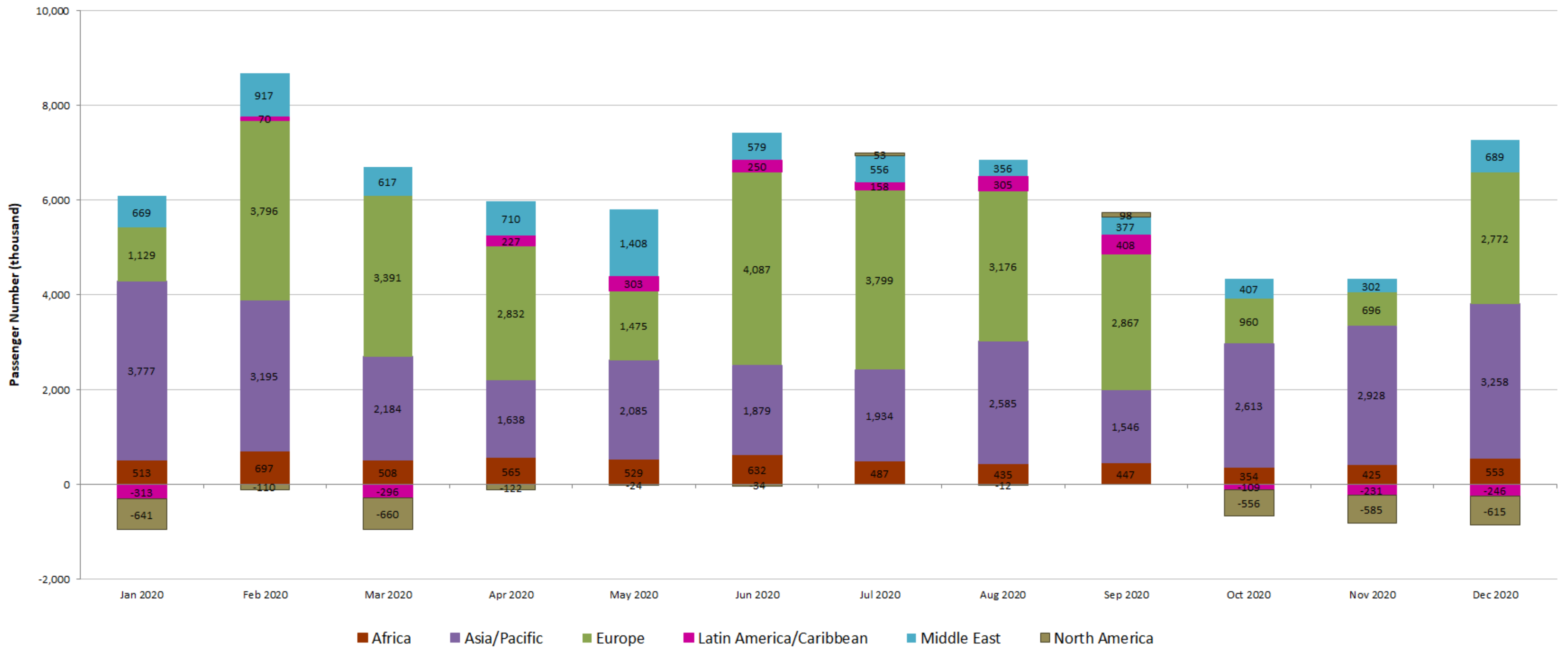


Source: ICAO estimates based on ICAO ADS-B, OAG, Routes Online and airline websites

Impact on International Passenger Numbers (Demand)

- Given the originally-planned seat capacity, passenger demand could have increased **72 million** for 2020, compared to 2019.
- According to the latest estimates, passenger demand could instead drop from the above Baseline by **861 to 1,292 million** (Scenario 1) and **1,108 to 1,524 million** (Scenario 2).
- This demand level would be **789 to 1,221 million** (Scenario 1) and **1,036 to 1,452 million** (Scenario 2) below the 2019 level.
- The most substantial demand reduction (in number) is expected to be in Europe, hitting summer travel peak season, followed by Asia/Pacific.

Baseline:
72 million increase of passengers from 2019



Note: Number of international passengers departing from each country and territory, which are aggregated at the regional level to avoid double counting

Source: ICAO estimates based on ICAO ADS-B, OAG, ICAO LTF, ICAO Statistical Reporting, and IATA Economics

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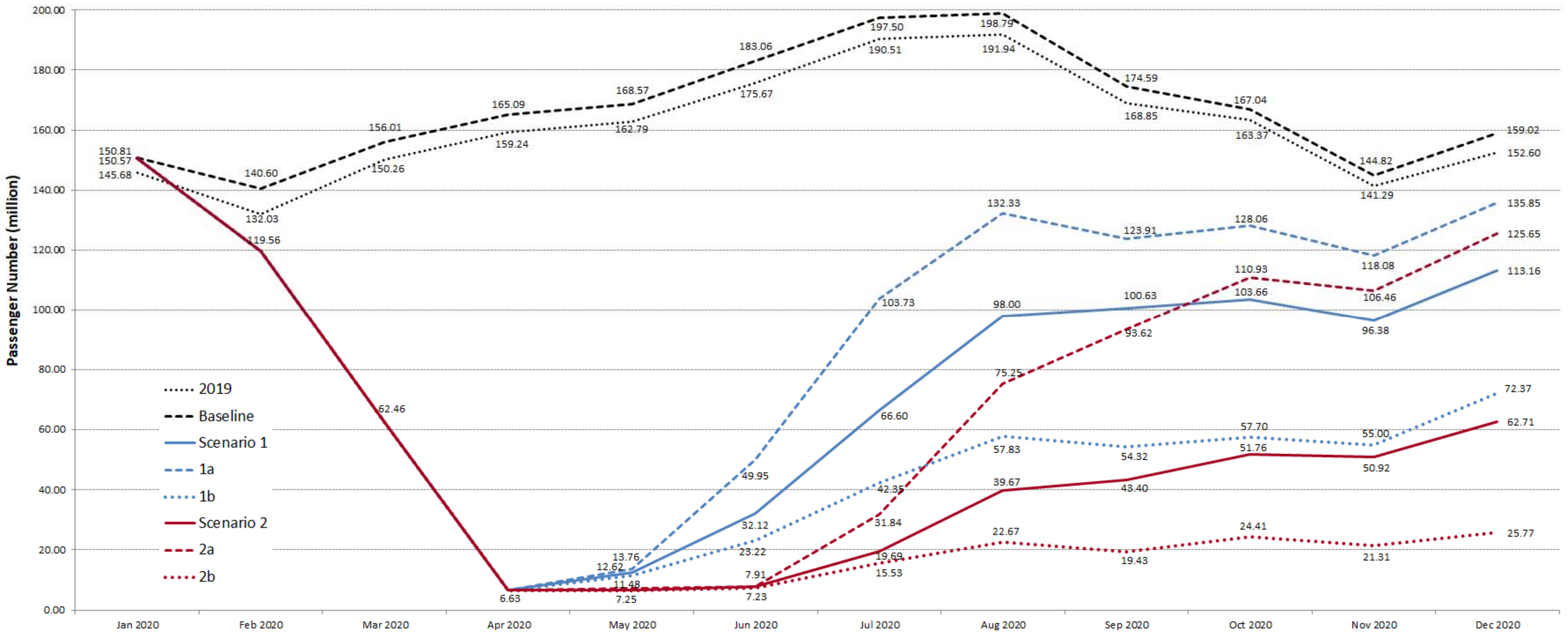
Scenarios 1 & 2: 861 - 1,524 million less passengers than Baseline and 789 - 1,452 million below 2019



Note: Number of international passengers departing from each country and territory, which are aggregated at the regional level to avoid double counting

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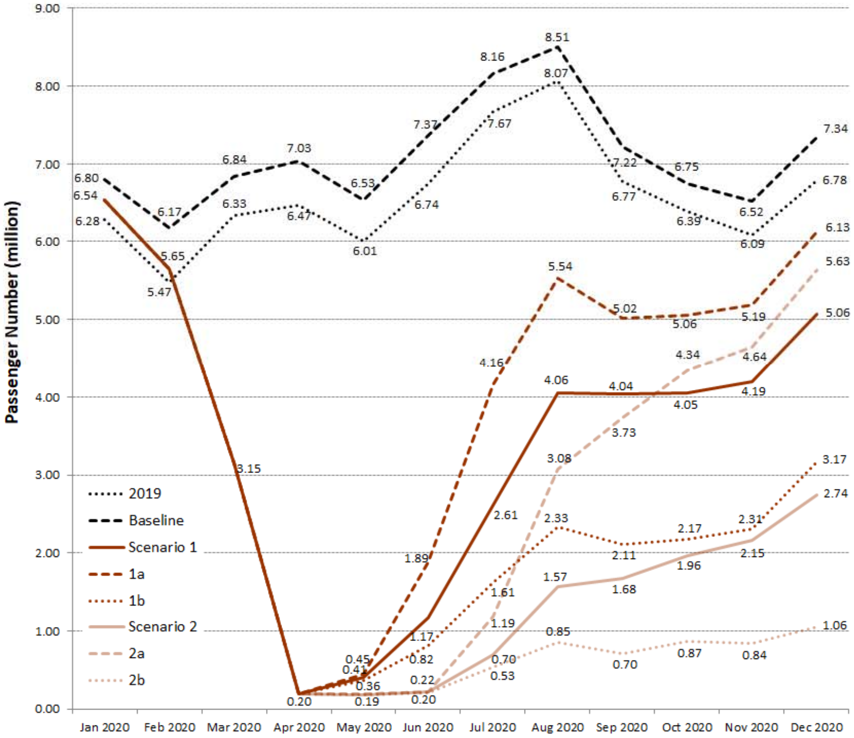
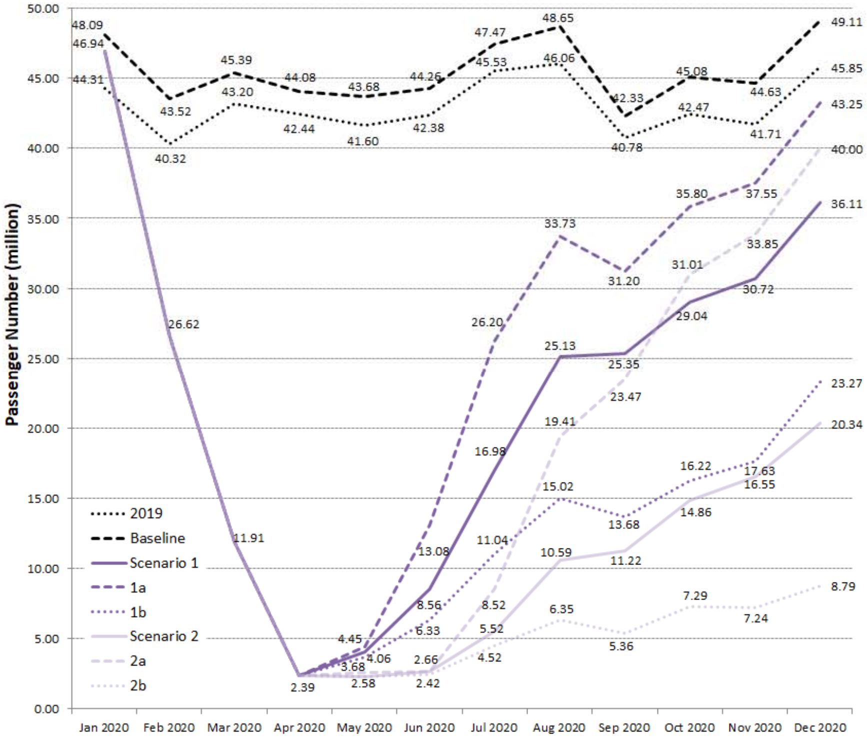
Break-down of passenger number by region (1)

Africa



Asia/Pacific



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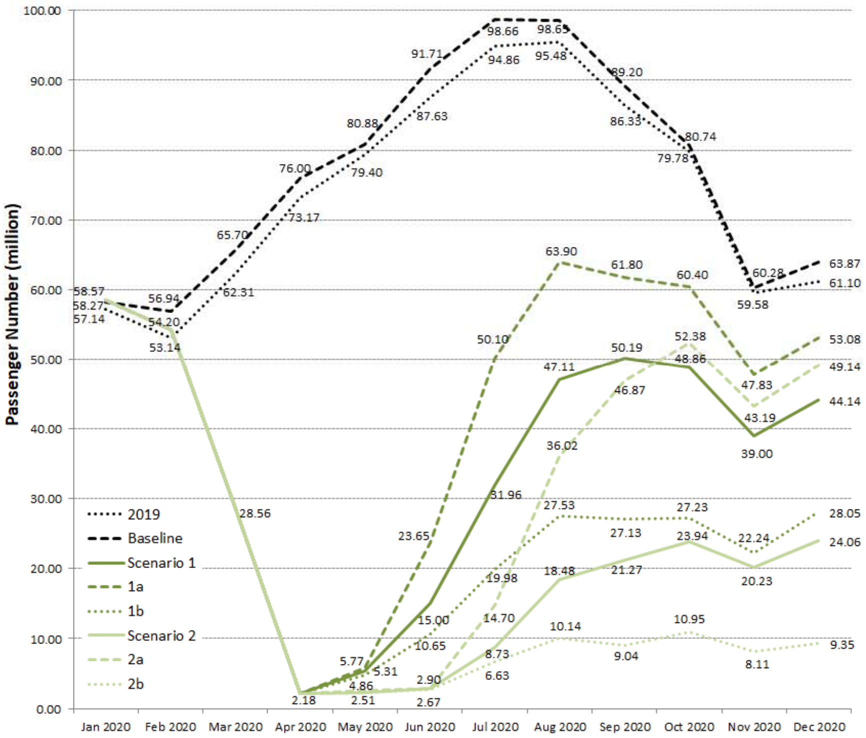
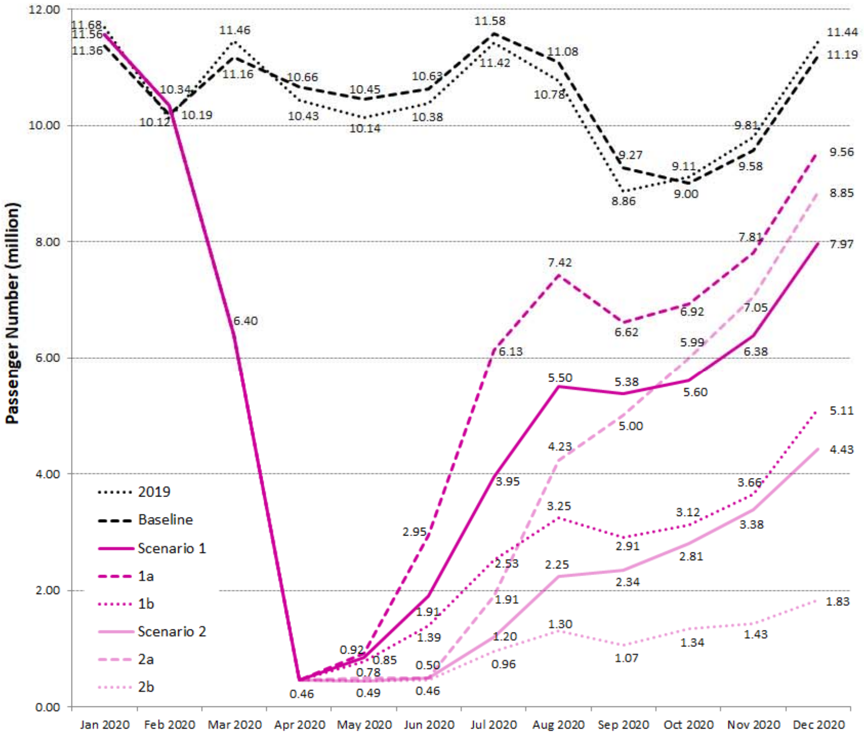
Break-down of passenger number by region (2)

Europe

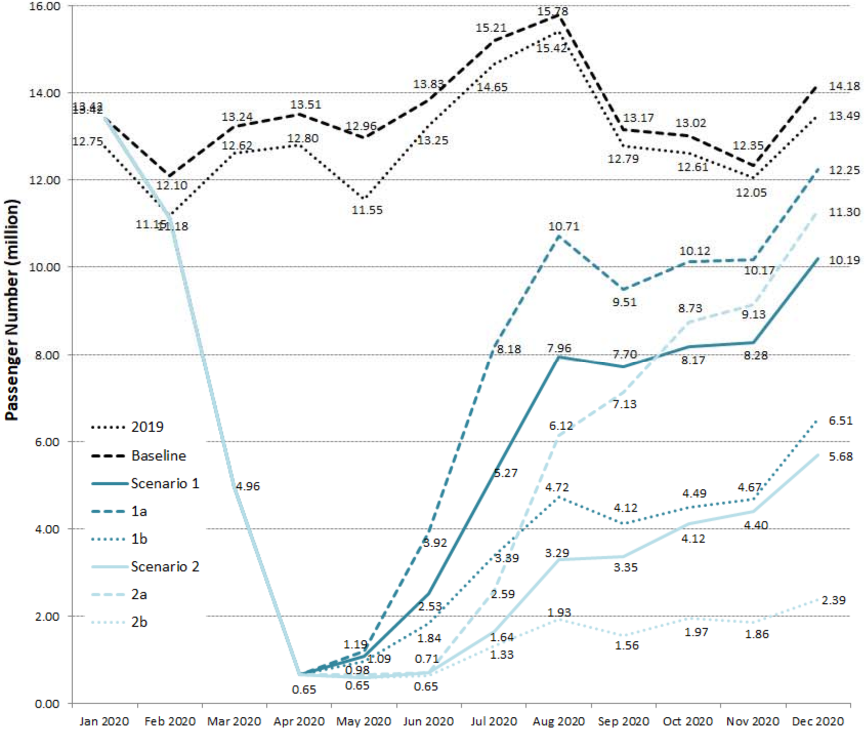


Latin America/Caribbean

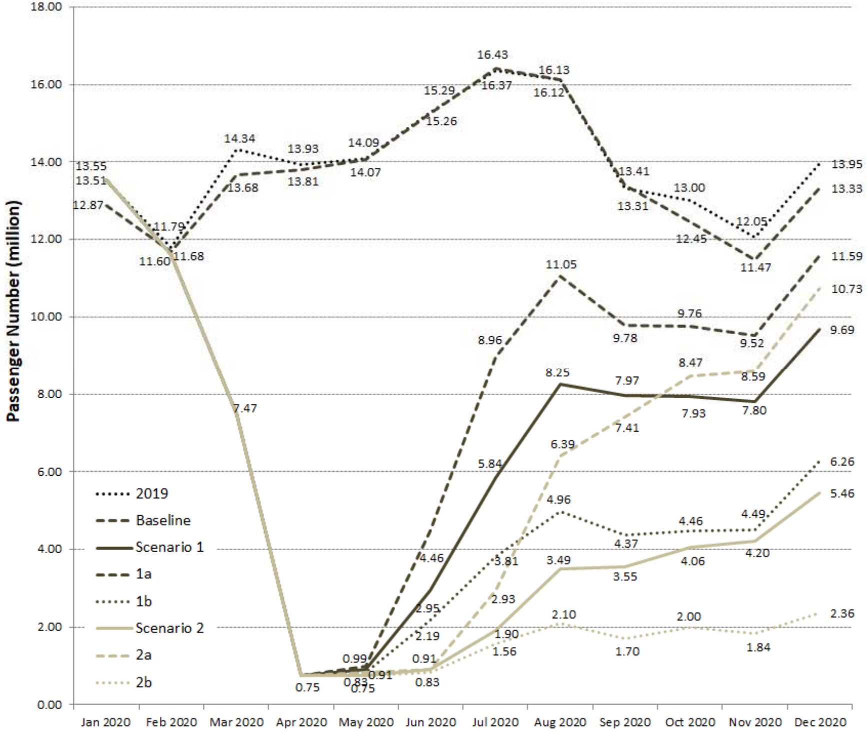


Break-down of passenger number by region (3)

Middle East



North America

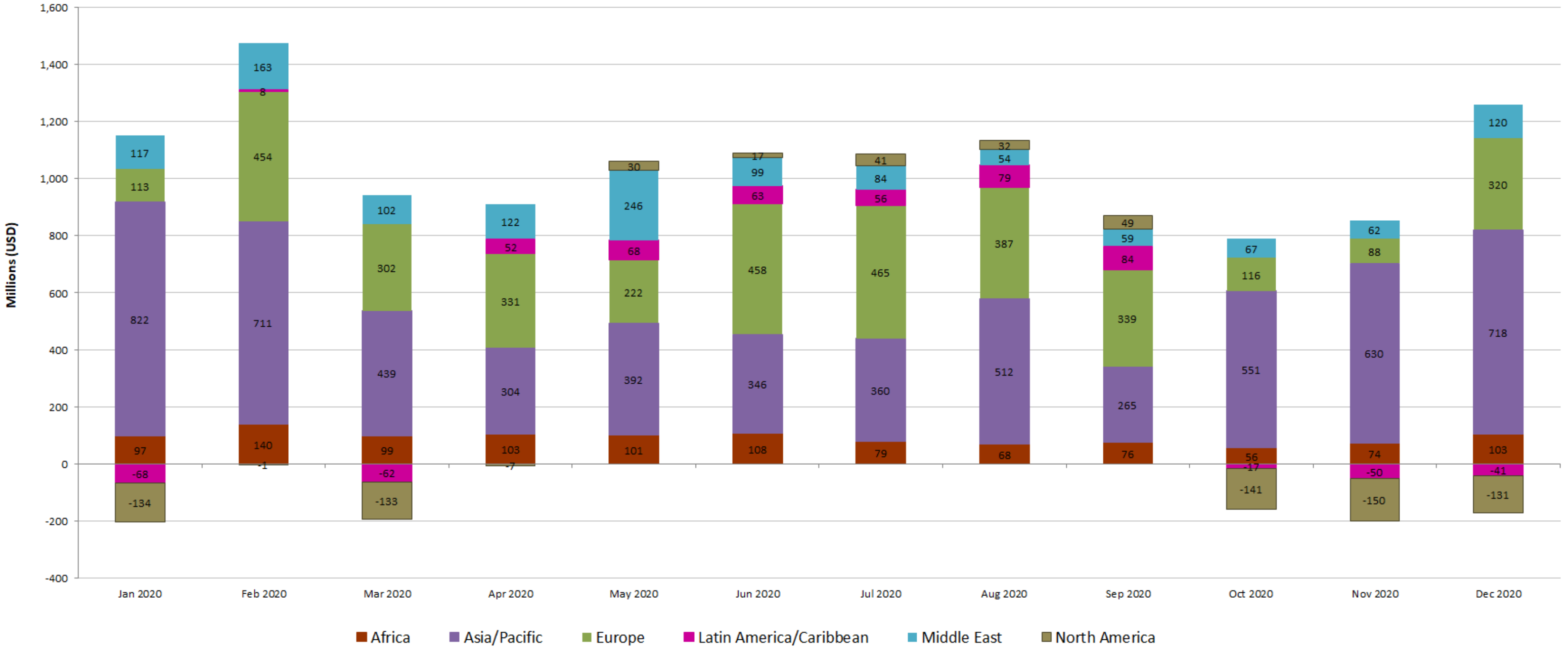


Source: ICAO estimates based on ICAO ADS-B, OAG, ICAO LTF, ICAO Statistical Reporting, IATA Economics, and IMF Economic Outlook

Impact on Gross Passenger Operating Revenues of Airlines

- With the originally-planned seat capacity and trend line growth of demand, airlines' gross passenger operating revenues could have increased **USD 12 billion** for 2020, compared to 2019.
- According to the latest estimates, airlines' revenues could instead plummet **USD 151 to 228 billion** (Scenario 1) and **USD 194 to 269 billion** (Scenario 2) below the above Baseline, or **USD 139 to 216 billion** (Scenario 1) and **USD 183 to 257 billion** (Scenario 2) below the 2019 level.
- Over two-third of revenue loss would be recorded by Europe and Asia/Pacific.

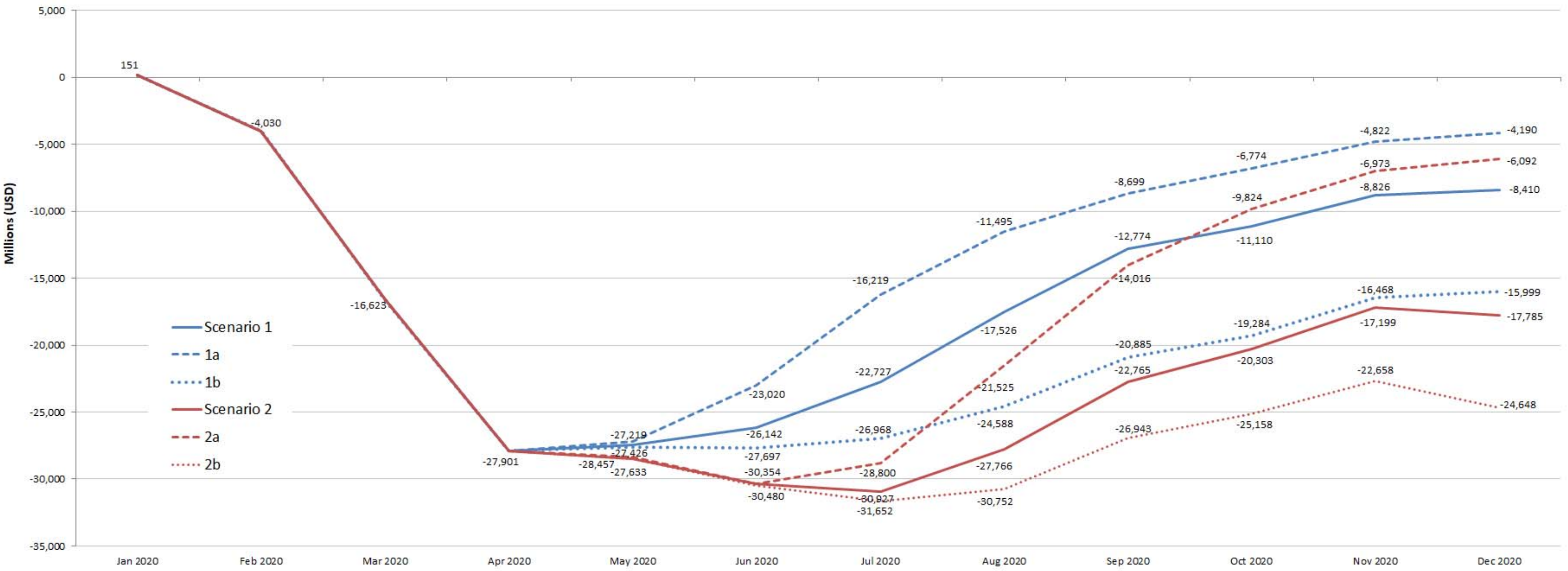
Baseline:
USD 12 billion increase of revenues from 2019



Note: The above revenues are gross passenger operating revenues of all airlines serving international routes from each country and territory, which are aggregated at the regional level (revenues of international routes to each country and territory were removed to avoid double counting).

Source: ICAO estimates based on ICAO ADS-B, OAG, ICAO-ICM MIDT, ICAO LTF, ICAO RCA, IATA Economics, and IMF Economic Outlook

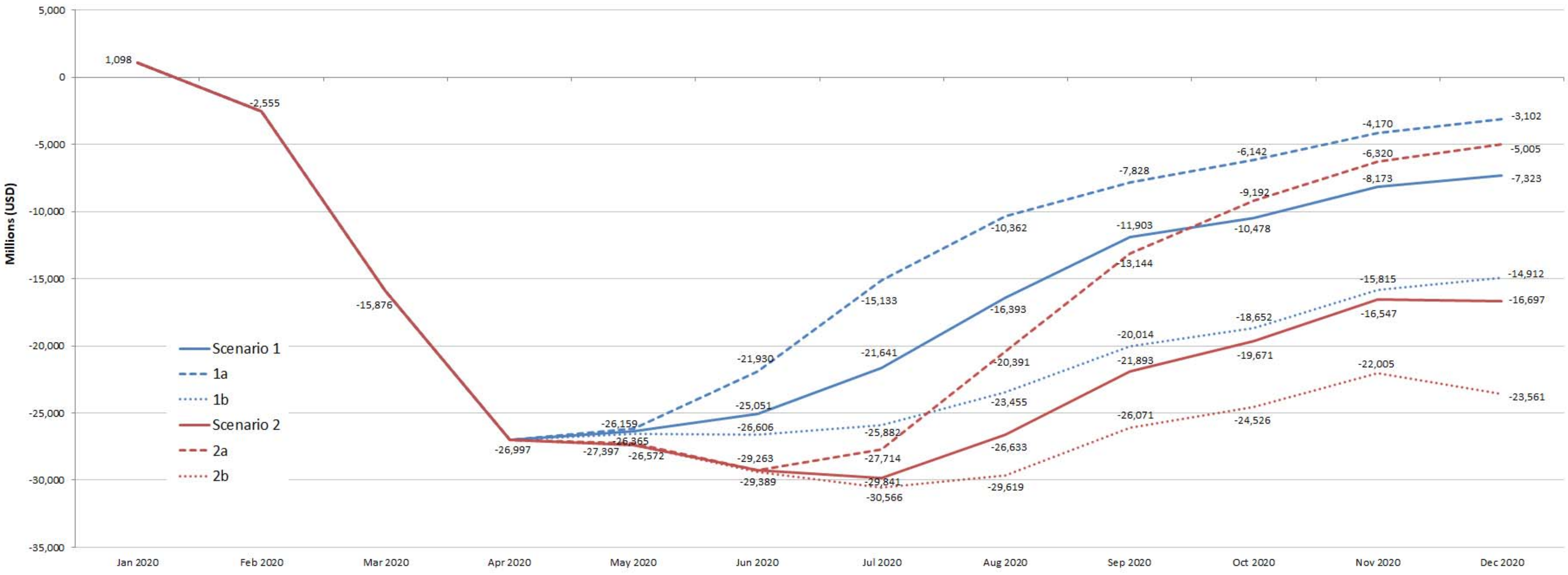
Scenarios 1 & 2: USD 151 to 269 billion less revenues than Baseline



Note: The above revenues are gross passenger operating revenues of all airlines serving international routes from each country and territory, which are aggregated at the regional level (revenues of international routes to each country and territory were removed to avoid double counting).

Source: ICAO estimates based on ICAO ADS-B, OAG, ICAO-ICM MIDT, ICAO LTF, ICAO RCA, IATA Economics, and IMF Economic Outlook

Scenarios 1 & 2: USD 139 to 257 billion less revenues than 2019



Note: The above revenues are gross passenger operating revenues of all airlines serving international routes from each country and territory, which are aggregated at the regional level (revenues of international routes to each country and territory were removed to avoid double counting).

Source: ICAO estimates based on ICAO ADS-B, OAG, ICAO-ICM MIDT, ICAO LTF, ICAO RCA, IATA Economics, and IMF Economic Outlook

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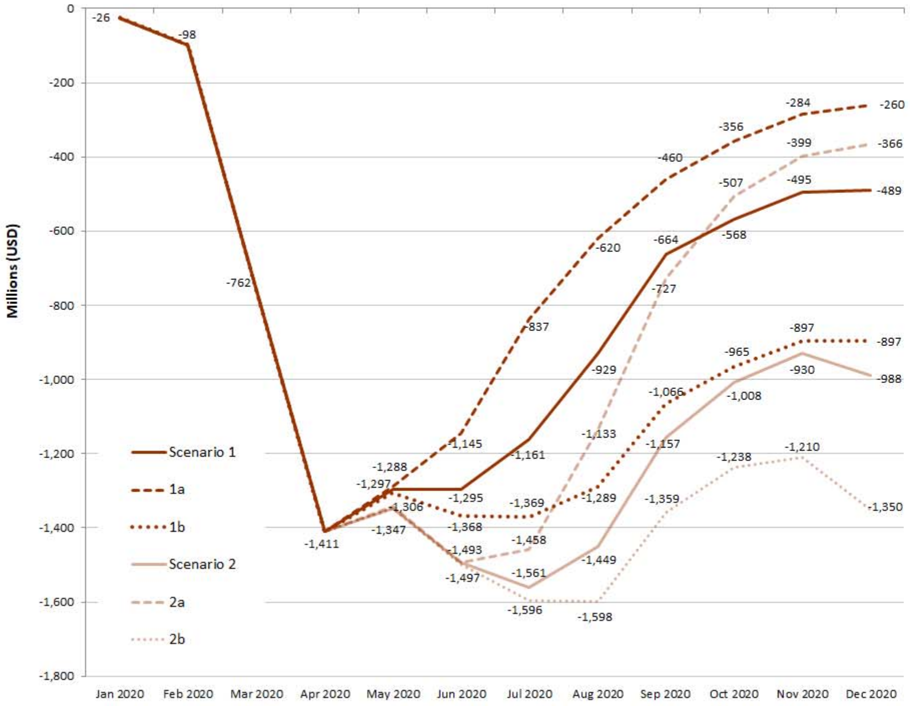
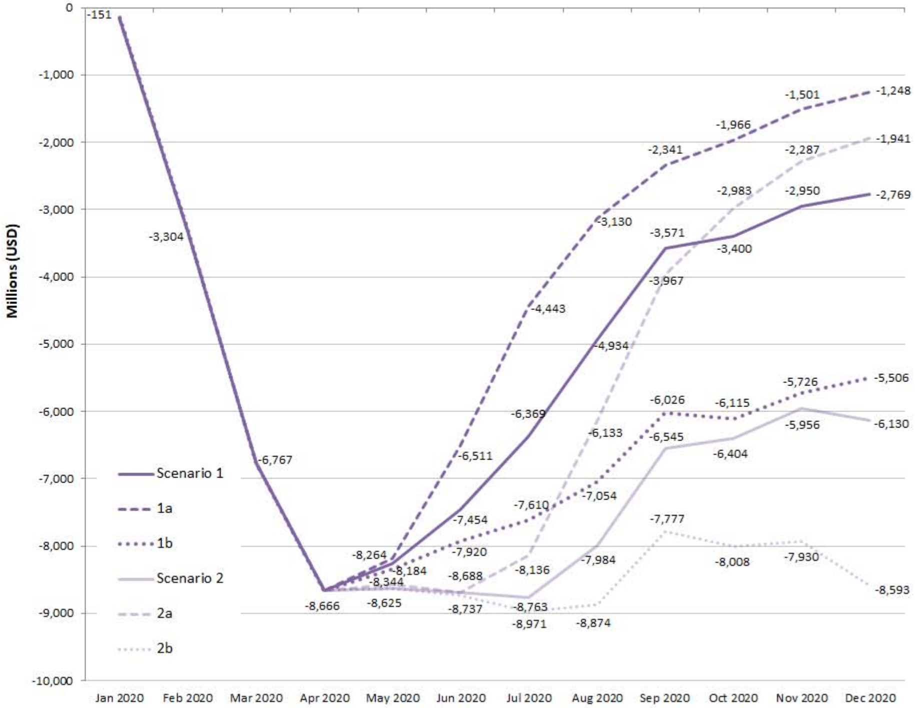
Break-down of revenue reduction compared to Baseline by region (1)

Africa

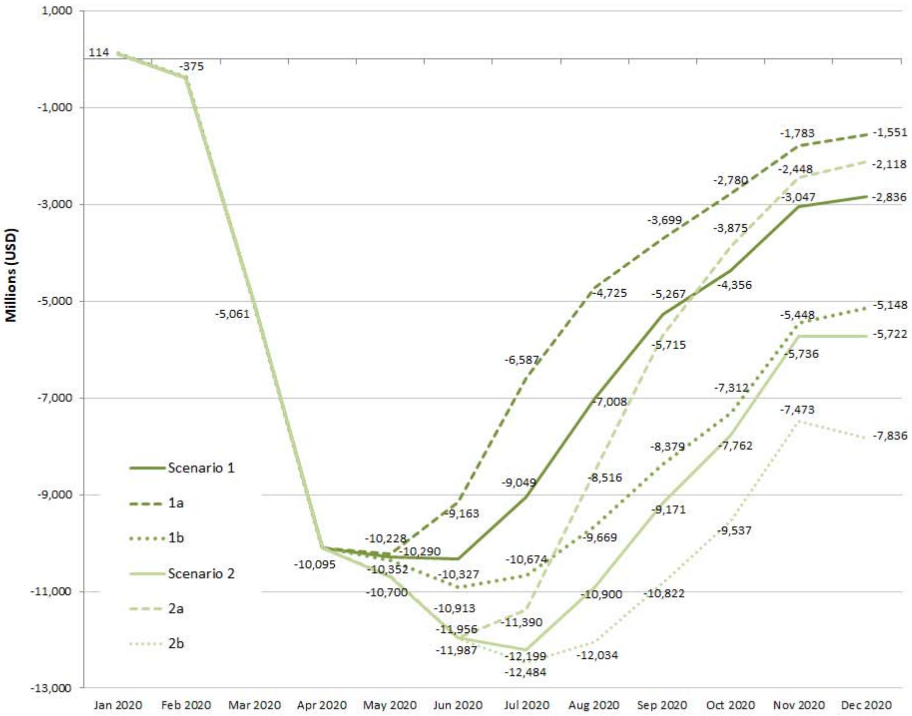


Asia/Pacific

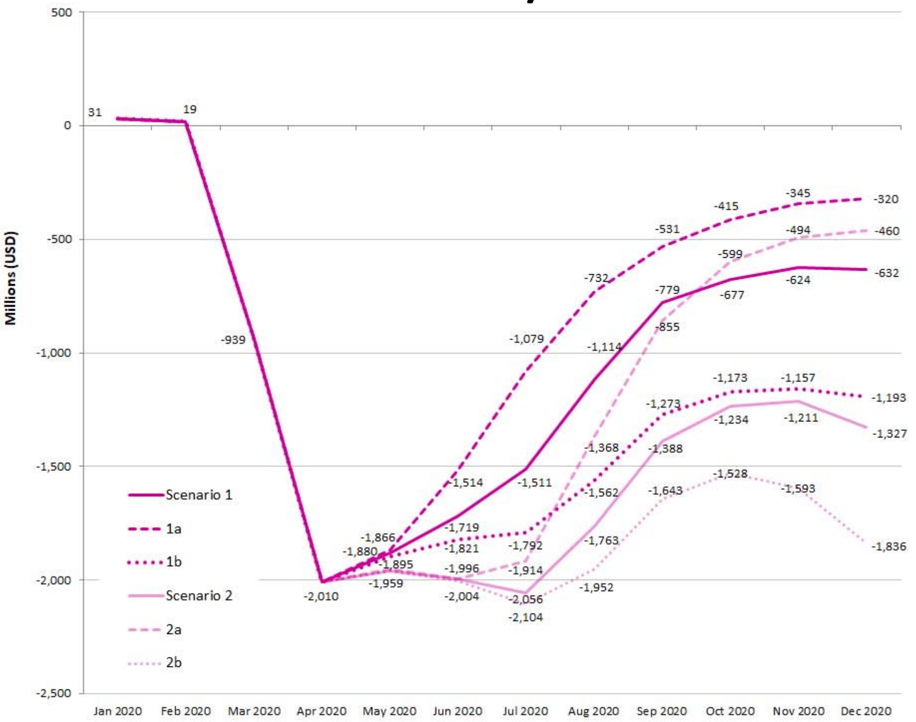


Break-down of revenue reduction compared to Baseline by region (2)

Europe

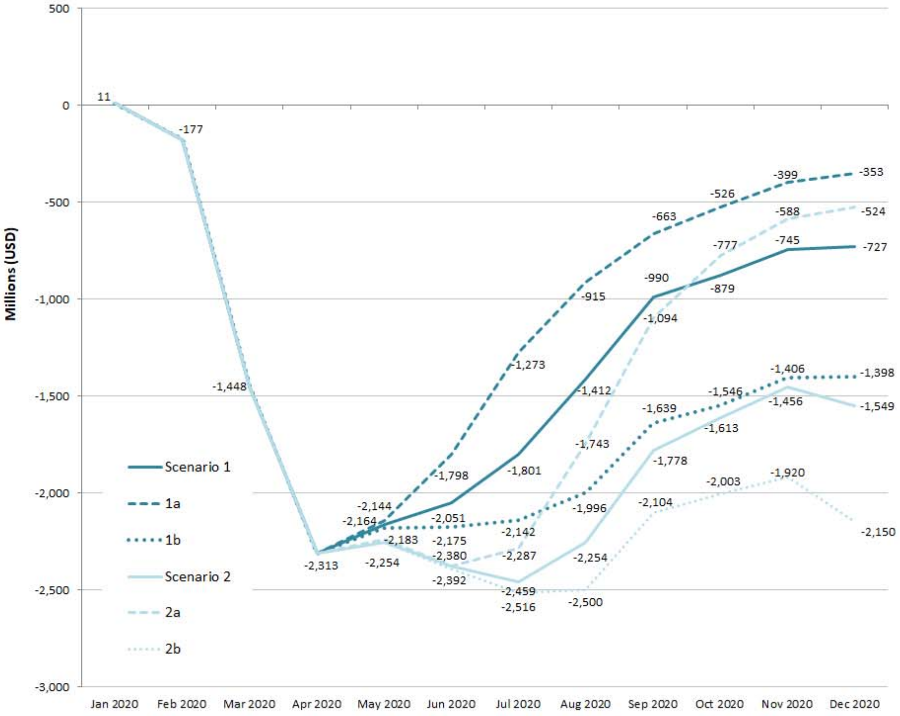


Latin America/Caribbean

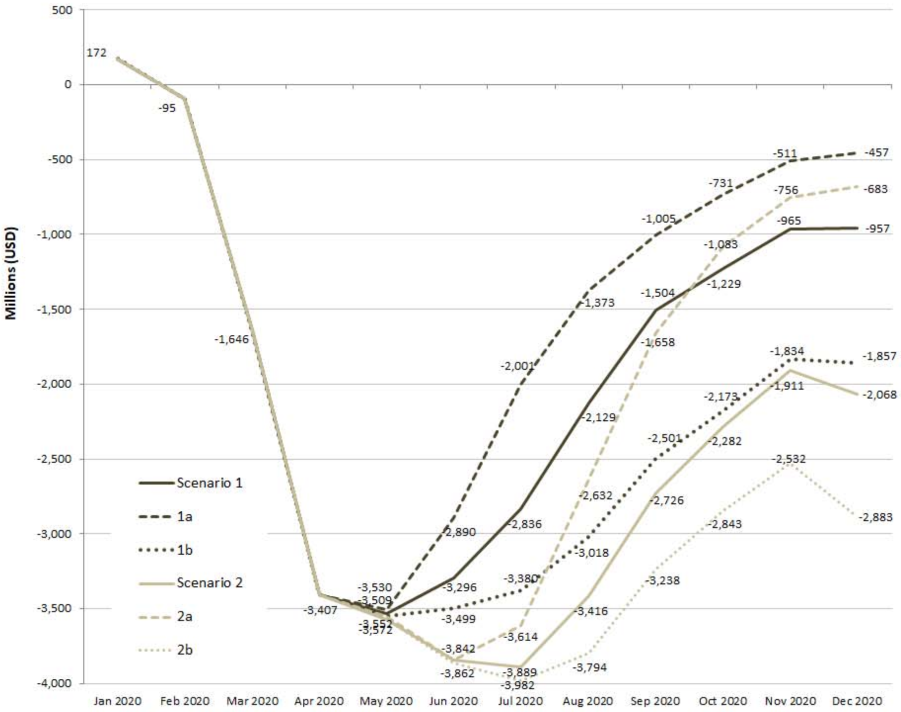


Break-down of revenue reduction compared to Baseline by region (3)

Middle East



North America



Summary of Key Impact Indicators

Figures and estimates herein are subject to substantial changes, and will be updated with the situation evolving and more information available.

Baseline compared to 2019 (year-on-year)

Compared to 2019 (year-on-year)	Baseline (Originally-planned or business as usual)		
Month	Seat Capacity (%)	Passenger number (million)	Passenger revenue (USD, billion)
January 2020	3.0%	5.13	0.95
February 2020	6.0%	8.56	1.47
March 2020	3.3%	5.74	0.75
April 2020	3.2%	5.85	0.90
May 2020	3.2%	5.78	1.06
June 2020	3.7%	7.39	1.09
July 2020	3.1%	6.99	1.09
August 2020	3.1%	6.84	1.13
September 2020	2.9%	5.74	0.87
October 2020	1.8%	3.67	0.63
November 2020	2.1%	3.53	0.65
December 2020	3.7%	6.41	1.09
Total	**3.2%**	**71.65**	**11.69**

Compared to 2019 (year-on-year)	Baseline (Originally-planned or business as usual)		
Region	Seat Capacity (%)	Passenger number (million)	Passenger revenue (USD, billion)
Africa	7.5%	6.14	1.10
Asia/Pacific	5.4%	29.62	6.05
Europe	2.8%	30.98	3.60
Latin America/Caribbean	0.0%	0.53	0.17
Middle East	4.6%	7.59	1.30
North America	-2.2%	-3.21	-0.53
Total	**3.2%**	**71.65**	**11.69**

Source: ICAO estimates

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Estimated results by month: Scenario 1 compared to Baseline

Compared to Baseline (Originally-planned, business as usual)	Scenario 1 (V-shaped) Path 1			Scenario 1 (V-shaped) Path 1a			Scenario 1 (V-shaped) Path 1b		
Month	Seat Capacity (%)	Passenger number (million)	Passenger revenue (USD, billion)	Seat Capacity (%)	Passenger number (million)	Passenger revenue (USD, billion)	Seat Capacity (%)	Passenger number (million)	Passenger revenue (USD, billion)
January 2020	-1.2%	-0.24	0.15	-1.2%	-0.24	0.15	-1.2%	-0.24	0.15
February 2020	-10.3%	-21.04	-4.03	-10.3%	-21.04	-4.03	-10.3%	-21.04	-4.03
March 2020	-48.0%	-93.55	-16.62	-48.0%	-93.55	-16.62	-48.0%	-93.55	-16.62
April 2020	-93.6%	-158.46	-27.90	-93.6%	-158.46	-27.90	-93.6%	-158.46	-27.90
May 2020	-89.0%	-155.95	-27.43	-89.0%	-154.81	-27.22	-89.0%	-157.09	-27.63
June 2020	-76.7%	-150.95	-26.14	-68.7%	-133.11	-23.02	-81.7%	-159.84	-27.70
July 2020	-58.7%	-130.90	-22.73	-43.7%	-93.77	-16.22	-71.7%	-155.15	-26.97
August 2020	-43.7%	-100.79	-17.53	-28.7%	-66.46	-11.50	-61.7%	-140.96	-24.59
September 2020	-33.8%	-73.96	-12.77	-23.8%	-50.68	-8.70	-54.8%	-120.27	-20.89
October 2020	-28.7%	-63.38	-11.11	-17.7%	-38.98	-6.77	-49.7%	-109.34	-19.28
November 2020	-23.4%	-48.44	-8.83	-12.4%	-26.74	-4.82	-44.4%	-89.82	-16.47
December 2020	-18.4%	-45.85	-8.41	-8.4%	-23.17	-4.19	-39.4%	-86.64	-16.00
Total	**-45.0%**	**-1,043.50**	**-183.34**	**-38.1%**	**-861.00**	**-150.84**	**-55.3%**	**-1,292.40**	**-227.93**

Source: ICAO estimates

Estimated results by month: Scenario 1 compared to 2019 (year-on-year)

Compared to 2019 (year-on-year)	Scenario 1 (V-shaped) Path 1			Scenario 1 (V-shaped) Path 1a			Scenario 1 (V-shaped) Path 1b		
Month	Seat Capacity (%)	Passenger number (million)	Passenger revenue (USD, billion)	Seat Capacity (%)	Passenger number (million)	Passenger revenue (USD, billion)	Seat Capacity (%)	Passenger number (million)	Passenger revenue (USD, billion)
January 2020	1.8%	4.89	1.10	1.8%	4.89	1.10	1.8%	4.89	1.10
February 2020	-5.0%	-12.48	-2.55	-5.0%	-12.48	-2.55	-5.0%	-12.48	-2.55
March 2020	-46.2%	-87.81	-15.88	-46.2%	-87.81	-15.88	-46.2%	-87.81	-15.88
April 2020	-93.4%	-152.61	-27.00	-93.4%	-152.61	-27.00	-93.4%	-152.61	-27.00
May 2020	-88.7%	-150.17	-26.37	-88.7%	-149.03	-26.16	-88.7%	-151.32	-26.57
June 2020	-75.9%	-143.55	-25.05	-67.6%	-125.72	-21.93	-81.1%	-152.45	-26.61
July 2020	-57.4%	-123.91	-21.64	-42.0%	-86.78	-15.13	-70.9%	-148.16	-25.88
August 2020	-42.0%	-93.94	-16.39	-26.6%	-59.61	-10.36	-60.6%	-134.11	-23.45
September 2020	-31.8%	-68.21	-11.90	-21.5%	-44.93	-7.83	-53.4%	-114.53	-20.01
October 2020	-27.4%	-59.71	-10.48	-16.2%	-35.31	-6.14	-48.8%	-105.67	-18.65
November 2020	-21.9%	-44.90	-8.17	-10.6%	-23.21	-4.17	-43.3%	-86.28	-15.82
December 2020	-15.4%	-39.44	-7.32	-5.0%	-16.76	-3.10	-37.2%	-80.23	-14.91
Total	**-43.3%**	**-971.86**	**-171.66**	**-36.1%**	**-789.35**	**-139.15**	**-53.8%**	**-1,220.76**	**-216.24**

Source: ICAO estimates

Estimated results by region: Scenario 1 compared to Baseline

Compared to Baseline (Originally-planned, business as usual)	**Scenario 1 (V-shaped) Path 1**			**Scenario 1 (V-shaped) Path 1a**			**Scenario 1 (V-shaped) Path 1b**		
Region	Seat Capacity (%)	Passenger number (million)	Passenger revenue (USD, billion)	Seat Capacity (%)	Passenger number (million)	Passenger revenue (USD, billion)	Seat Capacity (%)	Passenger number (million)	Passenger revenue (USD, billion)
Africa	-45.1%	-44.11	-9.20	-38.2%	-36.27	-7.55	-55.3%	-54.81	-11.45
Asia/Pacific	-44.4%	-282.46	-58.60	-37.6%	-233.16	-48.21	-54.5%	-351.54	-73.19
Europe	-47.3%	-495.84	-67.60	-40.1%	-410.88	-55.93	-57.7%	-609.73	-83.31
Latin America/Caribbean	-40.3%	-59.83	-11.83	-33.7%	-49.05	-9.70	-50.0%	-74.62	-14.76
Middle East	-43.0%	-81.40	-14.69	-36.2%	-66.54	-12.00	-53.1%	-101.86	-18.41
North America	-40.9%	-79.87	-21.42	-34.1%	-65.09	-17.45	-50.8%	-99.83	-26.79
Total	**-45.0%**	**-1,043.50**	**-183.34**	**-38.1%**	**-861.00**	**-150.84**	**-55.3%**	**-1,292.40**	**-227.93**

Source: ICAO estimates

Estimated results by region: Scenario 1 compared to 2019 (year-on-year)

Compared to 2019 (year-on-year)	Scenario 1 (V-shaped) Path 1			Scenario 1 (V-shaped) Path 1a			Scenario 1 (V-shaped) Path 1b		
Region	Seat Capacity (%)	Passenger number (million)	Passenger revenue (USD, billion)	Seat Capacity (%)	Passenger number (million)	Passenger revenue (USD, billion)	Seat Capacity (%)	Passenger number (million)	Passenger revenue (USD, billion)
Africa	-41.0%	-37.96	-8.09	-33.5%	-30.13	-6.44	-52.0%	-48.67	-10.35
Asia/Pacific	-41.4%	-252.84	-52.55	-34.3%	-203.54	-42.16	-52.0%	-321.92	-67.14
Europe	-45.8%	-464.86	-64.00	-38.4%	-379.90	-52.34	-56.6%	-578.75	-79.72
Latin America/Caribbean	-40.3%	-59.30	-11.66	-33.8%	-48.52	-9.53	-50.0%	-74.10	-14.59
Middle East	-40.4%	-73.81	-13.40	-33.2%	-58.95	-10.70	-51.0%	-94.28	-17.12
North America	-42.2%	-83.08	-21.95	-35.6%	-68.30	-17.98	-51.9%	-103.04	-27.32
Total	**-43.3%**	**-971.86**	**-171.66**	**-36.1%**	**-789.35**	**-139.15**	**-53.8%**	**-1,220.76**	**-216.24**

Source: ICAO estimates

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Estimated results by month: Scenario 2 compared to Baseline

Compared to Baseline (Originally-planned, business as usual)	Scenario 2 (U-shaped) Path 2			Scenario 2 (U-shaped) Path 2a			Scenario 2 (U-shaped) Path 2b		
Month	Seat Capacity (%)	Passenger number (million)	Passenger revenue (USD, billion)	Seat Capacity (%)	Passenger number (million)	Passenger revenue (USD, billion)	Seat Capacity (%)	Passenger number (million)	Passenger revenue (USD, billion)
January 2020	-1.2%	-0.24	0.15	-1.2%	-0.24	0.15	-1.2%	-0.24	0.15
February 2020	-10.3%	-21.04	-4.03	-10.3%	-21.04	-4.03	-10.3%	-21.04	-4.03
March 2020	-48.0%	-93.55	-16.62	-48.0%	-93.55	-16.62	-48.0%	-93.55	-16.62
April 2020	-93.6%	-158.46	-27.90	-93.6%	-158.46	-27.90	-93.6%	-158.46	-27.90
May 2020	-93.7%	-161.98	-28.46	-93.7%	-161.32	-28.33	-93.7%	-161.98	-28.46
June 2020	-93.7%	-175.16	-30.35	-93.7%	-175.16	-30.35	-93.7%	-175.84	-30.48
July 2020	-85.7%	-177.81	-30.93	-78.7%	-165.66	-28.80	-88.7%	-181.97	-31.65
August 2020	-73.7%	-159.12	-27.77	-53.7%	-123.53	-21.52	-83.7%	-176.12	-30.75
September 2020	-66.8%	-131.19	-22.77	-33.8%	-80.97	-14.02	-83.8%	-155.16	-26.94
October 2020	-61.7%	-115.28	-20.30	-23.7%	-56.11	-9.82	-78.7%	-142.63	-25.16
November 2020	-56.4%	-93.90	-17.20	-15.4%	-38.36	-6.97	-78.4%	-123.51	-22.66
December 2020	-51.4%	-96.31	-17.79	-9.4%	-33.37	-6.09	-78.4%	-133.25	-24.65
Total	**-63.1%**	**-1,384.04**	**-243.96**	**-48.1%**	**-1,107.78**	**-194.32**	**-71.0%**	**-1,523.74**	**-269.15**

Source: ICAO estimates

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Estimated results by month: Scenario 2 compared to 2019 (year-on-year)

Compared to 2019 (year-on-year)	Scenario 2 (U-shaped) Path 2			Scenario 2 (U-shaped) Path 2a			Scenario 2 (U-shaped) Path 2b		
Month	Seat Capacity (%)	Passenger number (million)	Passenger revenue (USD, billion)	Seat Capacity (%)	Passenger number (million)	Passenger revenue (USD, billion)	Seat Capacity (%)	Passenger number (million)	Passenger revenue (USD, billion)
January 2020	1.8%	4.89	1.10	1.8%	4.89	1.10	1.8%	4.89	1.10
February 2020	-5.0%	-12.48	-2.55	-5.0%	-12.48	-2.55	-5.0%	-12.48	-2.55
March 2020	-46.2%	-87.81	-15.88	-46.2%	-87.81	-15.88	-46.2%	-87.81	-15.88
April 2020	-93.4%	-152.61	-27.00	-93.4%	-152.61	-27.00	-93.4%	-152.61	-27.00
May 2020	-93.5%	-156.20	-27.40	-93.5%	-155.54	-27.27	-93.5%	-156.20	-27.40
June 2020	-93.5%	-167.76	-29.26	-93.5%	-167.76	-29.26	-93.5%	-168.44	-29.39
July 2020	-85.3%	-170.82	-29.84	-78.1%	-158.67	-27.71	-88.4%	-174.98	-30.57
August 2020	-72.9%	-152.27	-26.63	-52.3%	-116.69	-20.39	-83.2%	-169.28	-29.62
September 2020	-65.8%	-125.44	-21.89	-31.8%	-75.23	-13.14	-83.3%	-149.42	-26.07
October 2020	-61.0%	-111.61	-19.67	-22.3%	-52.44	-9.19	-78.3%	-138.96	-24.53
November 2020	-55.5%	-90.37	-16.55	-13.7%	-34.83	-6.32	-78.0%	-119.97	-22.00
December 2020	-49.6%	-89.90	-16.70	-6.0%	-26.95	-5.00	-77.6%	-126.84	-23.56
Total	**-61.9%**	**-1,312.39**	**-232.27**	**-46.4%**	**-1,036.13**	**-182.63**	**-70.1%**	**-1,452.09**	**-257.46**

Source: ICAO estimates

Estimated results by region: Scenario 2 compared to Baseline

Compared to Baseline (Originally-planned, business as usual)	**Scenario 2 (U-shaped) Path 2**			**Scenario 2 (U-shaped) Path 2a**			**Scenario 2 (U-shaped) Path 2b**		
Region	Seat Capacity (%)	Passenger number (million)	Passenger revenue (USD, billion)	Seat Capacity (%)	Passenger number (million)	Passenger revenue (USD, billion)	Seat Capacity (%)	Passenger number (million)	Passenger revenue (USD, billion)
Africa	-63.1%	-58.50	-12.23	-47.9%	-46.65	-9.72	-71.2%	-64.46	-13.49
Asia/Pacific	-62.1%	-374.36	-77.98	-46.8%	-296.94	-61.60	-70.2%	-414.13	-86.40
Europe	-65.9%	-655.50	-89.56	-50.9%	-529.70	-72.11	-73.7%	-718.22	-98.29
Latin America/Caribbean	-57.4%	-80.01	-15.83	-42.9%	-63.35	-12.54	-65.1%	-88.54	-17.52
Middle East	-60.8%	-108.80	-19.67	-45.7%	-86.21	-15.56	-68.8%	-120.32	-21.76
North America	-58.2%	-106.86	-28.68	-43.7%	-84.93	-22.80	-65.9%	-118.06	-31.68
Total	**-63.1%**	**-1,384.04**	**-243.96**	**-48.1%**	**-1,107.78**	**-194.32**	**-71.0%**	**-1,523.74**	**-269.15**

Source: ICAO estimates

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Estimated results by region: Scenario 2 compared to 2019 (year-on-year)

Compared to 2019 (year-on-year)	Scenario 2 (U-shaped) Path 2			Scenario 2 (U-shaped) Path 2a			Scenario 2 (U-shaped) Path 2b		
Region	Seat Capacity (%)	Passenger number (million)	Passenger revenue (USD, billion)	Seat Capacity (%)	Passenger number (million)	Passenger revenue (USD, billion)	Seat Capacity (%)	Passenger number (million)	Passenger revenue (USD, billion)
Africa	-60.4%	-52.36	-11.13	-44.0%	-40.51	-8.62	-69.0%	-58.32	-12.39
Asia/Pacific	-60.1%	-344.74	-71.93	-44.0%	-267.31	-55.55	-68.6%	-384.50	-80.35
Europe	-64.9%	-624.52	-85.97	-49.5%	-498.72	-68.51	-73.0%	-687.24	-94.69
Latin America/Caribbean	-57.4%	-79.49	-15.66	-43.0%	-62.82	-12.36	-65.1%	-88.02	-17.35
Middle East	-59.0%	-101.21	-18.37	-43.2%	-78.62	-14.27	-67.4%	-112.73	-20.47
North America	-59.1%	-110.07	-29.21	-44.9%	-88.14	-23.32	-66.7%	-121.27	-32.21
Total	**-61.9%**	**-1,312.39**	**-232.27**	**-46.4%**	**-1,036.13**	**-182.63**	**-70.1%**	**-1,452.09**	**-257.46**

Source: ICAO estimates

Appendix A: Situation Overview

COVID-19 outbreak has impacted air traffic of China starting from late January 2020

Note: The above includes a) international from mainland China, Hong Kong SAR of China, Macao SAR of China, Taiwan, Province of China; b) domestic within mainland China, and c) regional between mainland China and Hong Kong SAR, Macao SAR and Taiwan Province

Source: CARNOC.com/VariFlight (retrieved on 9 March 2020)

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A surge of COVID-19 confirmed cases occurred in several States by late February 2020

January 2020	International passenger seat capacity	
Country/Territory	Capacity change from originally-planned	
Russian Federation	-89,778	-1%
Italy	-65,971	-1%
Turkey	-53,262	-1%
China	-45,484	0%
Morocco	-42,684	-2%
United Arab Emirates	-31,464	0%
Iraq	-29,326	-3%
Albania	-22,080	-7%
United Kingdom	-21,888	0%
South Africa	-21,476	-1%
Iran Islamic Republic of	-20,891	-2%
France	-19,537	0%
Poland	-18,154	0%
Romania	-17,493	-1%
Japan	-16,449	0%
United States	-13,067	0%
Indonesia	-12,114	0%
Bulgaria	-10,540	-1%
India	-10,342	0%
Cambodia	-10,158	-1%
Bahamas	-9,588	-2%
Denmark	-8,942	0%
Viet Nam	-8,489	0%
Malta	-7,372	-1%
Lebanon	-7,182	-1%
Bahrain	-7,123	-1%
Uzbekistan	-6,539	-1%
Tunisia	-6,362	-1%
Switzerland	-6,235	0%
Czechia	-5,642	0%

February 2020	International passenger seat capacity	
Country/Territory	Capacity change from originally-planned	
China	-10,532,219	-61%
Hong Kong SAR of China (CN)	-2,363,320	-36%
Republic of Korea	-1,717,147	-19%
Japan	-1,592,429	-15%
Thailand	-1,452,478	-15%
Taiwan, Province of China (CN)	-1,446,686	-23%
Singapore	-807,608	-12%
Viet Nam	-731,936	-16%
Macao SAR of China (CN)	-721,489	-64%
Philippines	-646,104	-18%
United States	-620,296	-3%
Malaysia	-448,172	-8%
Indonesia	-426,102	-10%
Russian Federation	-317,890	-5%
Cambodia	-307,968	-4%
Turkey	-277,868	-21%
Italy	-268,846	-3%
United Arab Emirates	-253,548	-2%
Australia	-241,284	-5%
United Kingdom	-188,864	-1%
Iran Islamic Republic of	-169,782	-18%
France	-157,998	-1%
Myanmar	-147,487	-21%
Germany	-145,561	-1%
India	-116,823	-2%
Morocco	-108,186	-5%
Qatar	-99,338	-2%
Canada	-96,231	-1%
Lao People's Democratic Republi	-71,910	-21%
Finland	-71,413	-4%

In February 2020, international passenger capacity **reduced by 10%**, mainly related to traffic from/to States experiencing an early outbreak and States deeply interconnected to China.

State/Territory with 100 to 999 confirmed cases*

State/Territory with 1,000 to 9,999 confirmed cases*

State/Territory with 10,000 to 49,999 confirmed cases*

State/Territory with 50,000 or more confirmed cases*

*: Coronavirus Disease 2019 (COVID-19) Situation Report by WHO (29 February 2020)

Source: OAG scheduled data adjusted by ICAO estimates

COVID-19 Pandemic was declared and accelerating in March 2020

March 2020 International Passenger Capacity

Country/Territory	Capacity change from originally-planned	
China	-14,841,792	-82%
Italy	-6,860,837	-60%
Republic of Korea	-6,536,917	-70%
Japan	-5,837,894	-51%
Germany	-5,771,162	-31%
Hong Kong SAR of China (CN)	-5,352,855	-77%
United Kingdom	-4,965,296	-22%
United States	-4,950,969	-19%
Thailand	-4,587,421	-46%
Taiwan, Province of China (CN)	-4,074,431	-62%
Spain	-3,792,140	-26%
United Arab Emirates	-3,400,833	-26%
Singapore	-3,297,434	-45%
France	-3,216,482	-25%
Turkey	-2,879,271	-35%
Viet Nam	-2,599,336	-55%
Malaysia	-2,500,355	-42%
India	-2,077,578	-29%
Saudi Arabia	-1,747,385	-31%
Switzerland	-1,691,017	-28%

Country/Territory	Capacity change from originally-planned	
Philippines	-1,669,456	-45%
Indonesia	-1,466,518	-34%
Netherlands	-1,292,472	-17%
Canada	-1,218,383	-16%
Austria	-1,200,864	-30%
Russian Federation	-1,177,704	-19%
Australia	-1,119,345	-25%
Portugal	-1,118,941	-26%
Belgium	-1,060,572	-31%
Qatar	-1,041,439	-21%
Denmark	-980,211	-28%
Israel	-972,061	-44%
Poland	-967,520	-24%
Macao SAR of China (CN)	-954,453	-80%
Egypt	-818,043	-28%
Morocco	-762,145	-31%
Sweden	-761,425	-24%
Ireland	-733,678	-21%
Greece	-635,039	-34%
Czechia	-610,048	-37%

In March 2020, global international passenger capacity **reduced by 48%**, with significant reduction not only in States experiencing an early outbreak but also worldwide.

- State/Territory with 100 to 999 confirmed cases*
- State/Territory with 1,000 to 9,999 confirmed cases*
- State/Territory with 10,000 to 49,999 confirmed cases*
- State/Territory with 50,000 or more confirmed cases*

*: Coronavirus Disease 2019 (COVID-19) Situation Report by WHO (31 March 2020)

Source: OAG scheduled data adjusted by ICAO estimates

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The world reached 3 million confirmed COVID-19 cases in April 2020

April 2020 International Passenger Capacity

Country/Territory	Capacity change from originally-planned	
United States	-22,976,621	-88%
United Kingdom	-22,345,210	-90%
Germany	-19,374,444	-92%
Spain	-18,041,897	-94%
China	-16,683,876	-95%
France	-13,480,021	-91%
Italy	-12,464,502	-94%
United Arab Emirates	-11,009,896	-89%
Japan	-9,501,833	-88%
Turkey	-8,798,224	-94%
Thailand	-8,441,105	-94%
Republic of Korea	-7,960,525	-86%
Hong Kong SAR of China (CN)	-7,122,206	-93%
Netherlands	-6,960,693	-89%
Singapore	-6,596,279	-93%
Canada	-6,288,656	-90%
India	-6,286,458	-89%
Switzerland	-5,990,424	-93%
Russian Federation	-5,747,918	-87%
Taiwan, Province of China (CN)	-5,400,277	-85%

Country/Territory	Capacity change from originally-planned	
Malaysia	-4,959,606	-85%
Portugal	-4,913,803	-95%
Saudi Arabia	-4,193,572	-77%
Australia	-4,115,805	-92%
Mexico	-4,104,882	-78%
Austria	-3,812,866	-91%
Qatar	-3,760,492	-80%
Indonesia	-3,723,583	-87%
Viet Nam	-3,681,731	-89%
Ireland	-3,595,318	-92%
Poland	-3,449,632	-79%
Denmark	-3,417,729	-93%
Belgium	-3,323,135	-87%
Greece	-3,078,774	-94%
Philippines	-2,993,741	-86%
Sweden	-2,941,579	-89%
Norway	-2,476,519	-90%
Egypt	-2,248,437	-78%
Brazil	-2,214,850	-92%
Israel	-2,196,238	-91%

In April 2020, global international passenger capacity so far experienced by **unprecedented 94% reduction** (estimated)

State/Territory with 100 to 999 confirmed cases*

State/Territory with 1,000 to 9,999 confirmed cases*

State/Territory with 10,000 to 49,999 confirmed cases*

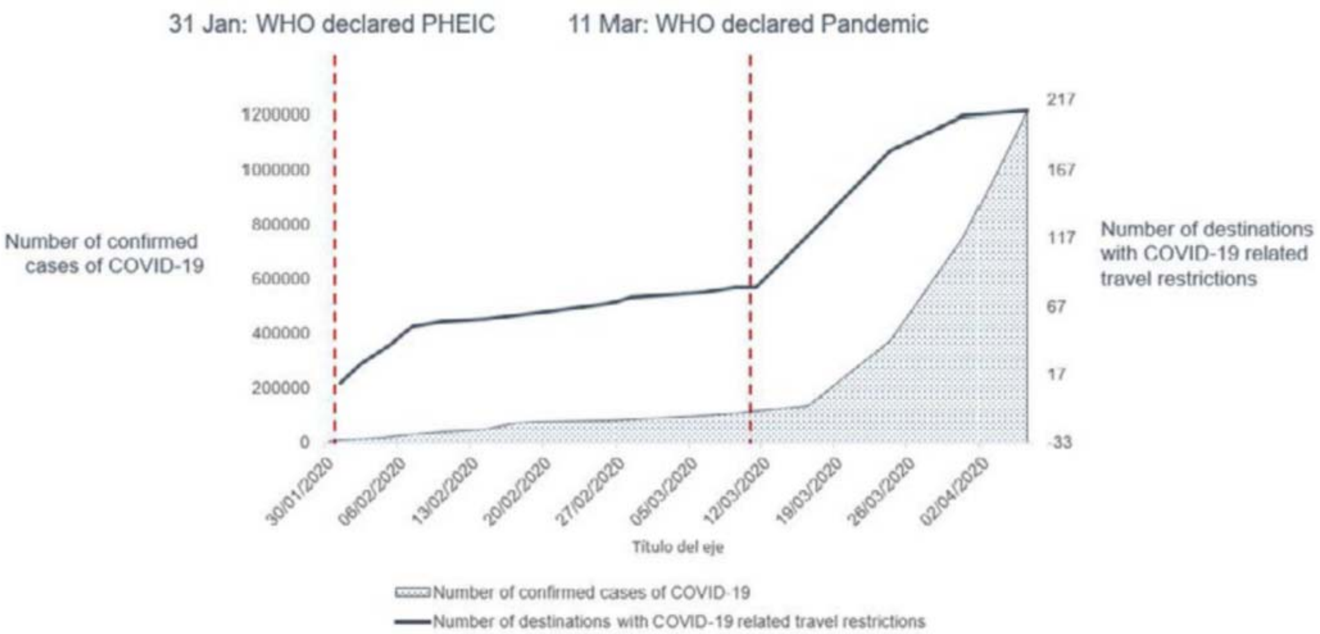
State/Territory with 50,000 or more confirmed cases*

*: Coronavirus Disease 2019 (COVID-19) Situation Report by WHO (30 April 2020)

Source: OAG scheduled data adjusted by ICAO estimates

Drastic reduction in air traffic amplified by travel restrictions amid COVID-19 outbreak

Number of confirmed cases and destinations with COVID-19-related travel restrictions



As of 6 April 2020, 96% of all world destinations have travel restrictions. About 90 destinations have completely or partially closed their borders for tourists, while another 44 destinations are closing their borders for specific countries of origin.

https://www.unwto.org/news/covid-19-response-travel-restrictions

Source: UNWTO COVID-19 Related Travel Restrictions – A Global Review for Tourism (dated 16 April 2020)

Air freight volumes have also been declining

Total air cargo throughout declined by 19% in March 2020 YoY, with a significant withdraw of passenger aircraft belly cargo capacity while the increase in all-cargo freighters have offset the capacity reduction

Millions of Tonnes Transported			
	March 2019	March 2020	Change
Belly Cargo	3.49	2.40	-31%
Freighter Cargo	1.48	1.61	9%
Net	**4.97**	**4.01**	**-19%**

Preliminary analysis indicates air cargo revenues have dropped 22% from USD 8.3 to 6.5 billion in March 2020 over the same period

Source: ICAO ADS-B operation data and ICAO Statistical Reporting

Appendix B: Summary of Analysis by Other Organizations

ACI: Airport would lose USD 97.4 billion revenues in 2020

Region	**Passenger number** - both interntional and domestic for full year 2020		**Airport revenue** - both aeronautical and non-aeronautical for full year 2020	
	million and % change from 2020 "business as usual" baseline scenario		USD billion and % change from 2020 "business as usual" baseline scenario	
Africa	-114	-47.3%	-2.2	-51.2%
Asia/Pacific	-1,797	-52.9%	-29.4	-58.9%
Europe	-1,416	-57.1%	-37.1	-62.6%
Latin America/Caribbean	-289	-44.2%	-5.3	-50.5%
Middle East	-201	-46.9%	-7.0	-53.0%
North America	-859	-41.1%	-16.4	-47.3%
Total	**-4,676**	**-50.4%**	**-97.4**	**-56.7%**

https://aci.aero/wp-content/uploads/2020/05/200505-Third-Economic-Impact-Bulletin-FINAL.pdf

Source: ACI Advisory Bulletin – Economic Impact Assessment of COVID-19 on the Airport Business (dated 5 May 2020)

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IATA: Airlines would lose USD 314 billion revenues under “3-month lock-down + recession” scenario

The analytical difference between ICAO and IATA estimates:

- **Traffic**: international only (ICAO) vs. both international and domestic (IATA)
- **Regional break-down**: by all traffic from States in each region (ICAO) vs. region of airline registration (IATA)
- **Baseline**: originally-planned i.e. 2020 business as usual scenario (ICAO) vs. 2019 level with 2020 airline schedules (IATA)

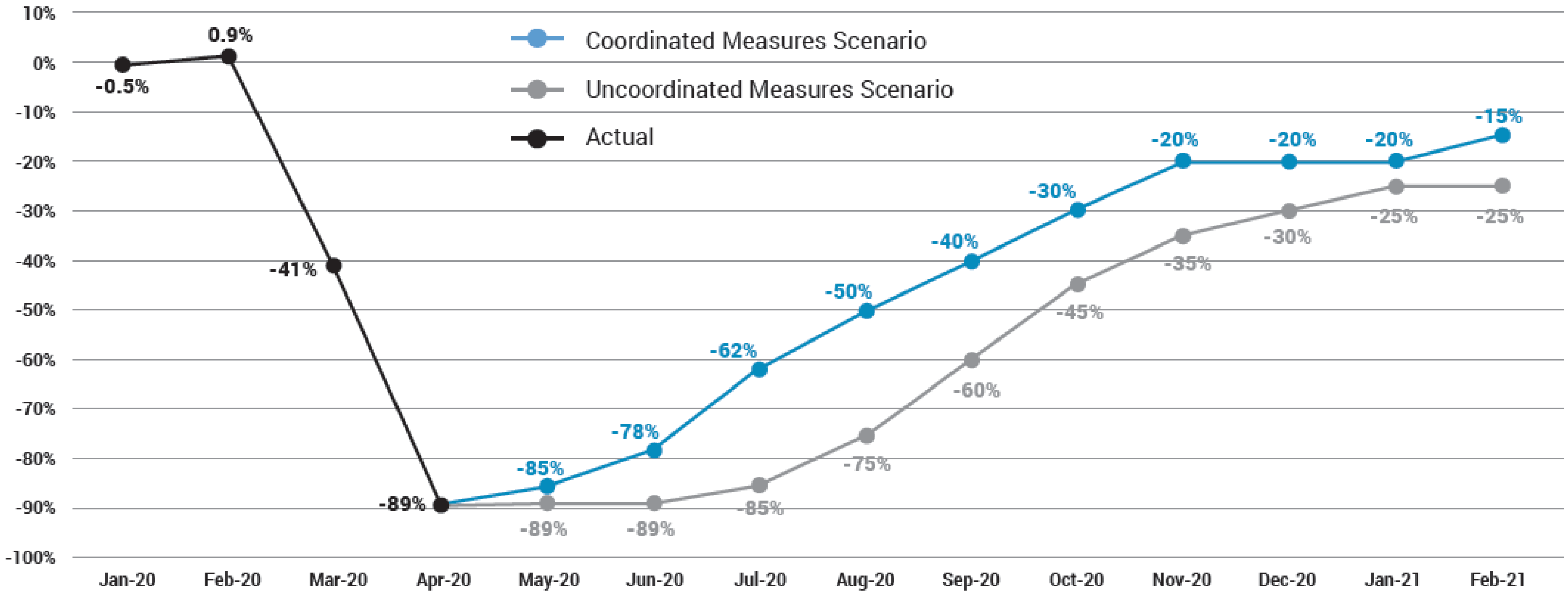
Region of airline registration	**Revenue Passenger Kilometres (RPKs)** - both interntional and domestic for full year 2020	**Gross passenger revenue** - both interntional and domestic for full year 2020
	year-on-year % change from 2019 level	USD billion, compared to 2019 level
Africa	-51%	-6
Asia/Pacific	-50%	-113
Europe	-55%	-89
Latin America/Caribbean	-49%	-18
Middle East	-51%	-24
North America	-36%	-64
Total	**-48%**	**-314**

https://www.iata.org/en/iata-repository/publications/economic-reports/covid-fourth-impact-assessment/

Source: IATA COVID-19 Updated Impact Assessment (dated 14 April 2020)

EUOCONTROL: A loss of € 110 billion for airlines, airports and ANSPs in Europe in 2020

EUROCONTROL Draft Traffic Scenarios - 24 April 2020 (base year 2019)



The Coordinated Measures Scenario envisages a loss of 45% of flights (5 million) in 2020, while the Uncoordinated Measures Scenario would result in the loss of 57% of flights (6.2 million).

https://www.eurocontrol.int/covid19#traffic-scenarios

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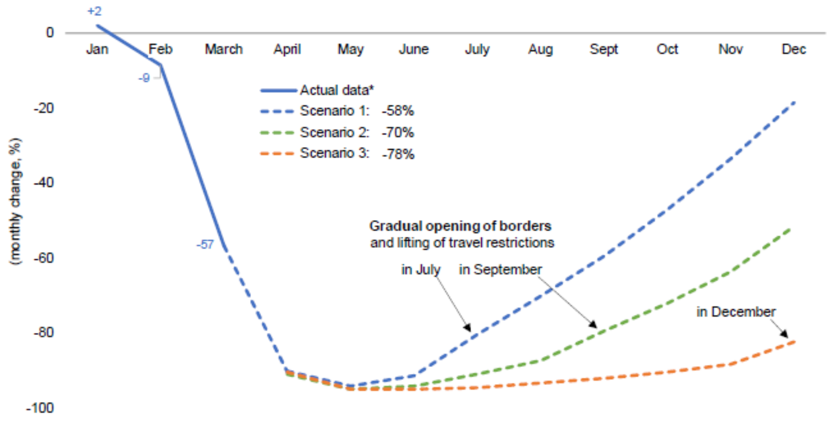
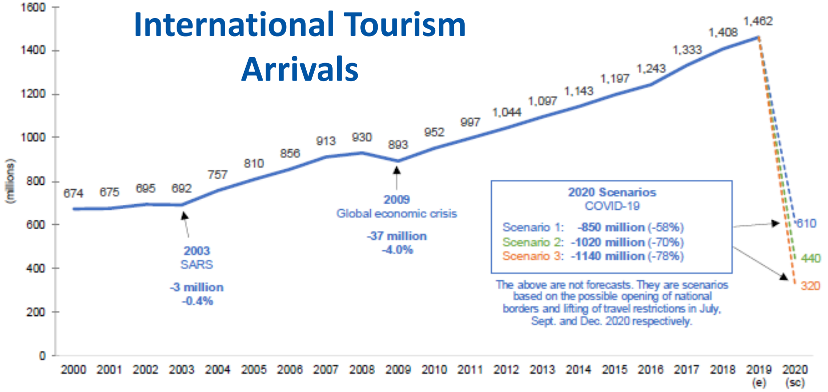
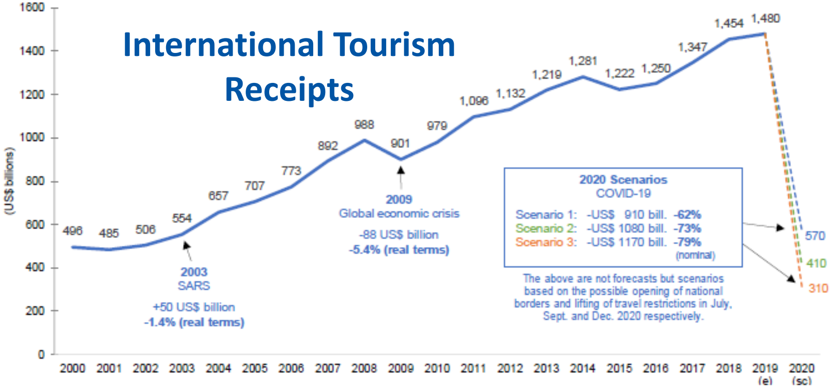
UNWTO: A loss of USD 910 to 1,170 billion in international tourism receipts in 2020

Three scenarios dependent upon re-opening of borders International Tourism Arrivals (year-on-year % change from 2019 level)



https://webunwto.s3.eu-west-1.amazonaws.com/s3fs-public/2020-05/Barometer%20-%20May%202020%20-%20Short.pdf





Source: UNWTO World Tourism Barometer – Special Focus on the Impact of COVID-19 (May 2020)

WTTC: A loss of 100 million jobs in travel and tourism sector in 2020

2020 forecasts – COVID-19 impact on travel and tourism sector

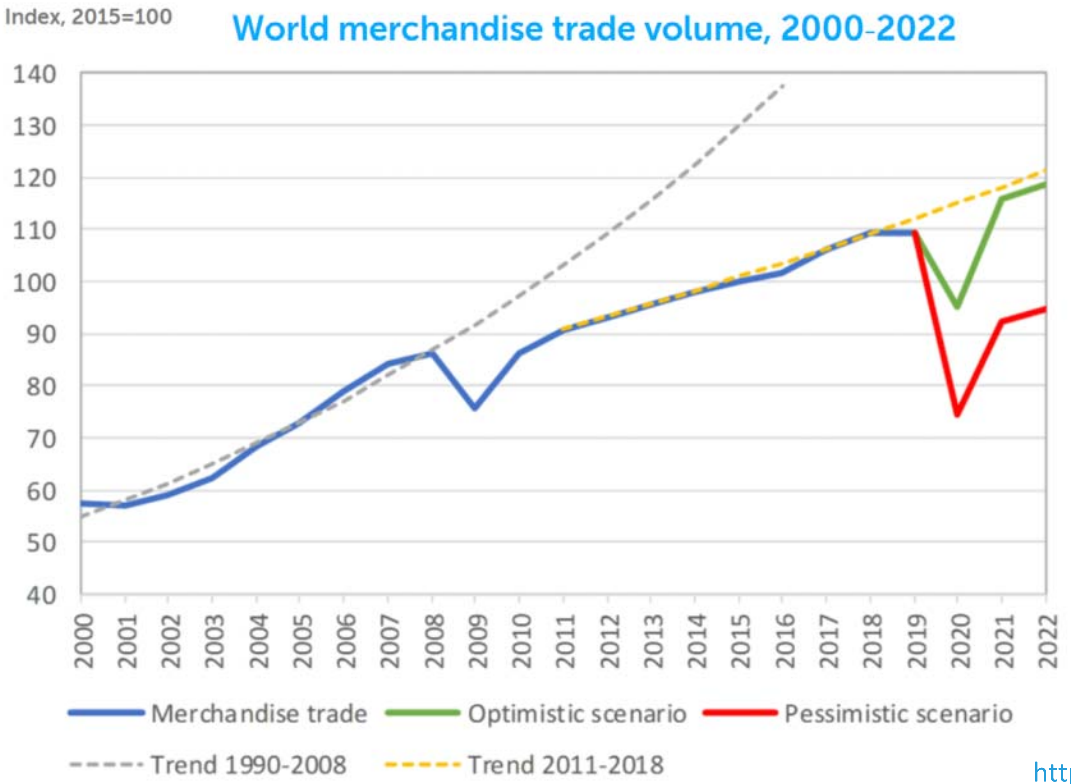
Region	**Potential Total Job Losses** (million)	**Total GDP Loss** (USD billion*)
Africa	-7.6	-52.8
Asia/Pacific	-63.4	-1,041.0
Europe	-13.0	-708.5
Latin America/Caribbean	-5.9	-110.2
Middle East	-2.6	-96.2
North America	-8.2	-680.7
Total	**-100.8**	**-2689.4**

* based on 2019 prices and exchange rates

https://wttc.org/About/News-Media/Press-Releases

Source: WTTC news release (dated 24 April 2020)

WTO: Global trade falling by 13 to 32% in 2020



- **World merchandise trade is set to plummet by between 13 and 32% in 2020** due to the COVID-19 pandemic.
- **A 2021 recovery** in trade is expected, but dependent on the duration of the outbreak and the effectiveness of the policy responses.
- **Nearly all regions will suffer double-digit declines in trade volumes in 2020**, with exports from North America and Asia hit hardest.

https://www.wto.org/english/news_e/pres20_e/pr855_e.htm

Source: WTO news release (dated 8 April 2020)

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IMF: Global economy is projected to contract sharply by -3% in 2020

The Projections assume that the pandemic fades in the second half of 2020 and containment efforts can be gradually unwound

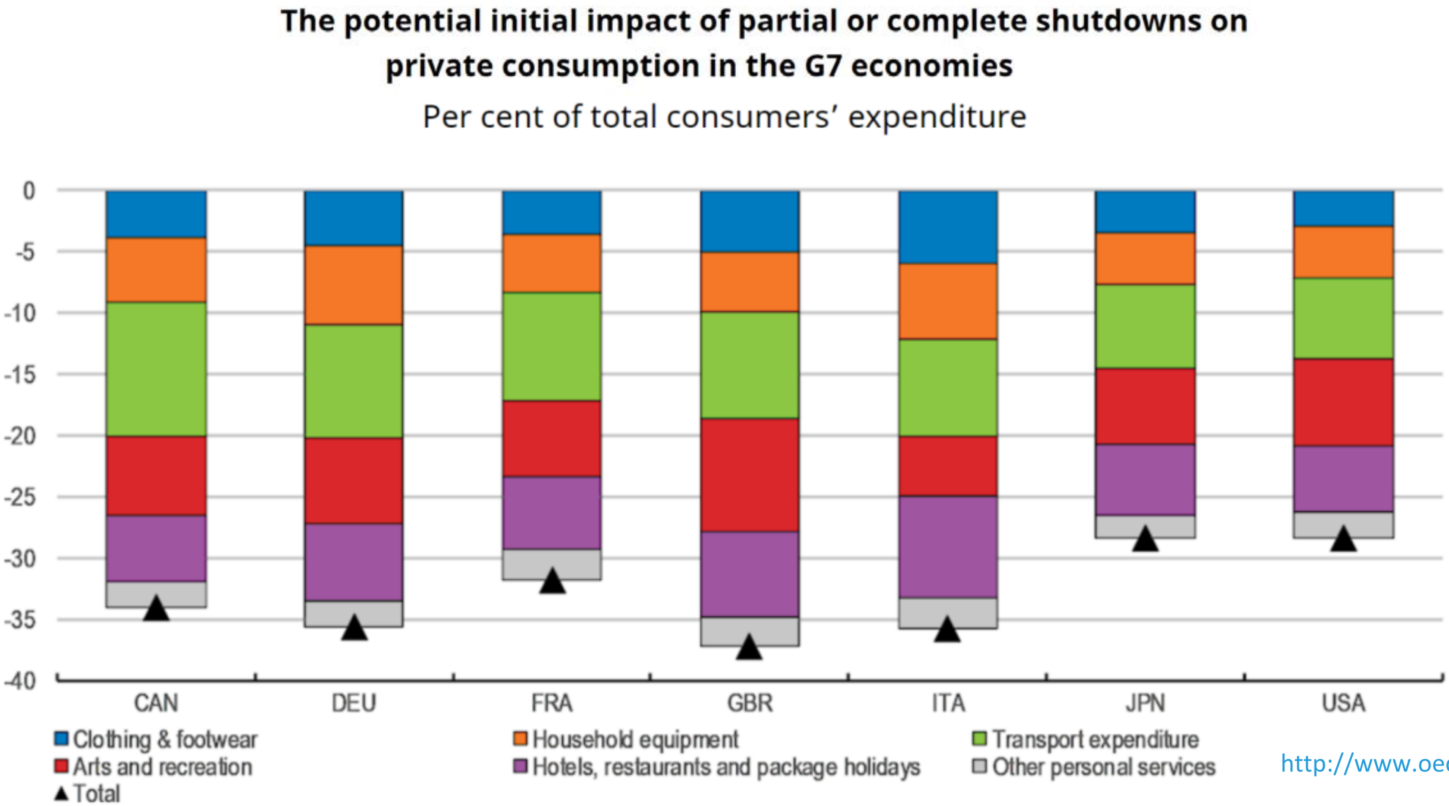
(real GDP, annual percent change)	2019	2020	2021
World Output	**2.9**	**-3.0**	**5.8**
Advanced Economies	**1.7**	**-6.1**	**4.5**
United States	2.3	-5.9	4.7
Euro Area	1.2	-7.5	4.7
Germany	0.6	-7.0	5.2
France	1.3	-7.2	4.5
Italy	0.3	-9.1	4.8
Spain	2.0	-8.0	4.3
Japan	0.7	-5.2	3.0
United Kingdom	1.4	-6.5	4.0
Canada	1.6	-6.2	4.2
Other Advanced Economies	1.7	-4.6	4.5

(real GDP, annual percent change)	2019	2020	2021
Emerging Markets and Developing Economies	**3.7**	**-1.0**	**6.6**
Emerging and Developing Asia	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
Emerging and Developing Europe	2.1	-5.2	4.2
Russia	1.3	-5.5	3.5
Latin America and the Caribbean	0.1	-5.2	3.4
Brazil	1.1	-5.3	2.9
Mexico	-0.1	-6.6	3.0
Middle East and Central Asia	1.2	-2.8	4.0
Saudi Arabia	0.3	-2.3	2.9
Sub-Saharan Africa	3.1	-1.6	4.1
Nigeria	2.2	-3.4	2.4
South Africa	0.2	-5.8	4.0
Low-Income Developing Countries	5.1	0.4	5.6

https://www.imf.org/en/Publications/WEO/Issues/2020/04/14/weo-april-2020

Source: IMF Word Economic Outlook (April 2020)

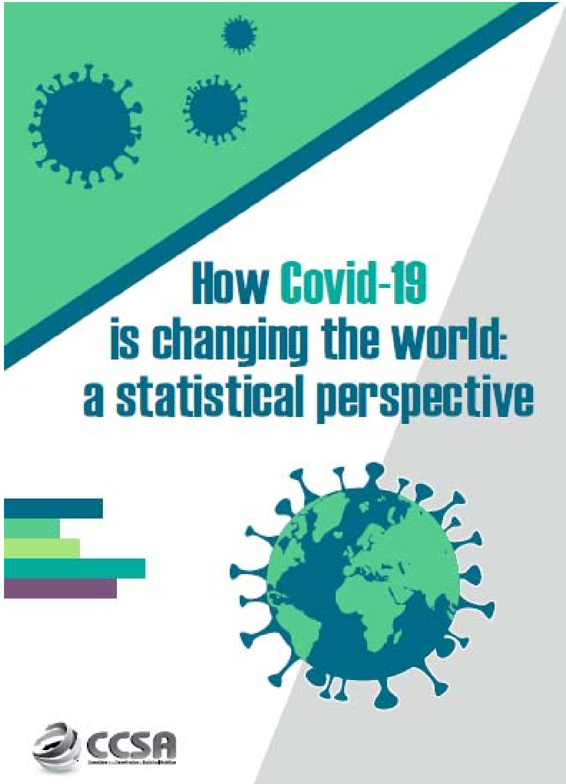
OECD: Sharp decrease in consumers' expenditures for air travel due to containment measures



http://www.oecd.org/coronavirus/en/

Source: OECD Evaluating the Initial Impact of Containment Measures (updated 14 April 2020)

CCSA: Compilation of economic, social, regional and statistical impacts



The new report will be published by the Committee for the Coordination of Statistical Activities (CCSA) under the auspice of the UN-DESA

Aviation industry facing deepest crisis ever in history

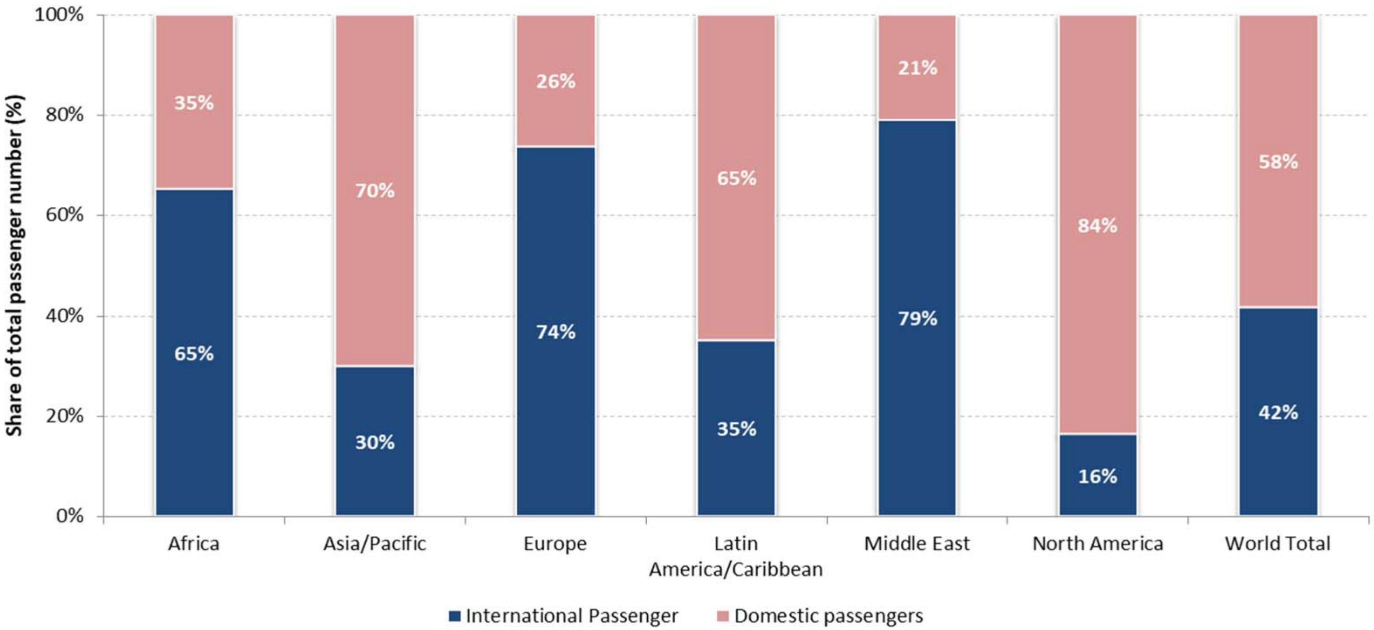
The aviation industry bears the weight of the consequences of the COVID-19 outbreak heavier than other industries as its "raison d'être" is the transport of people and goods all across the globe for travel, tourism, business and trade.

Appendix C:
Preliminary Scenarios of Domestic Passenger Traffic

Figures and estimates herein are preliminary, incomplete and subject to substantial changes.
The contents will be gradually added with more robust analysis.

Domestic-international passenger traffic mix exhibits significant geographical disparity

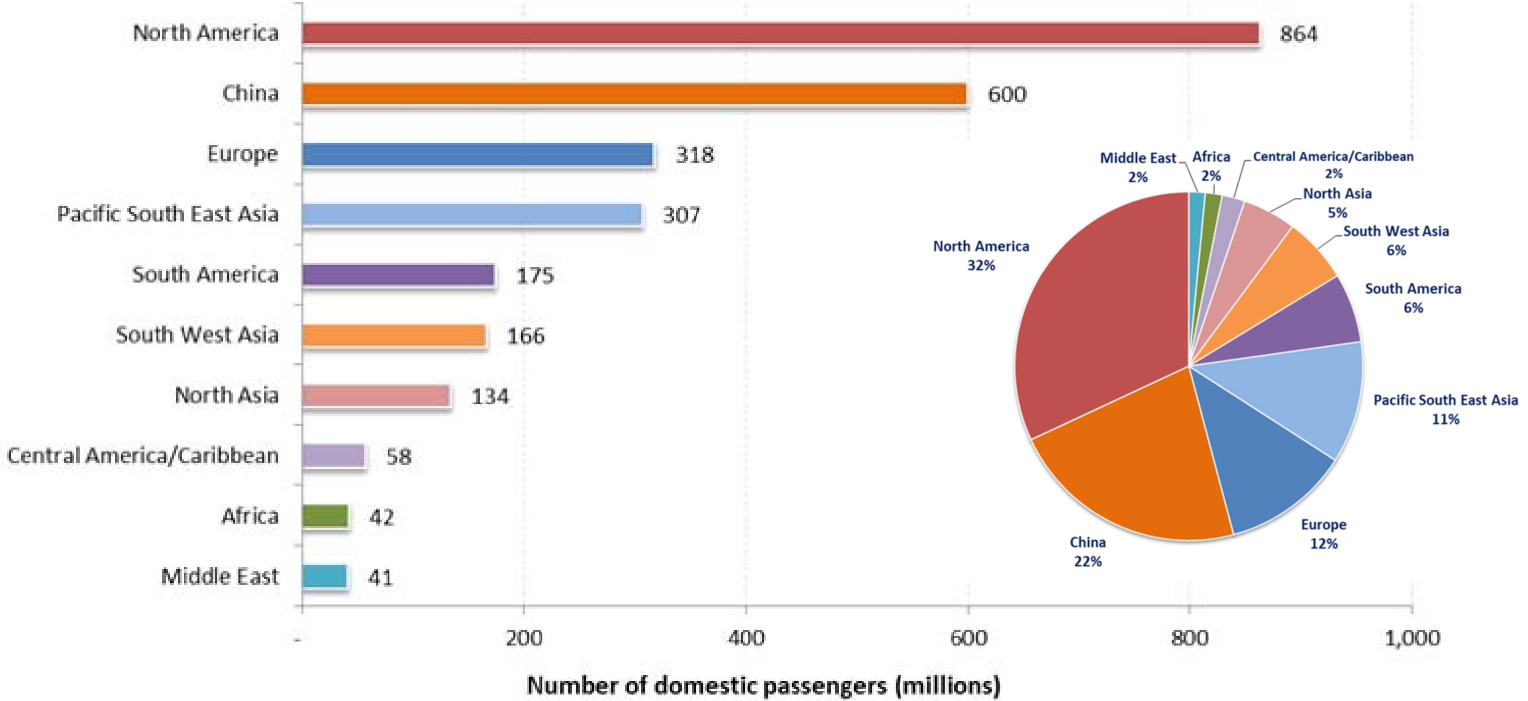
Share of domestic-international passenger traffic mix by region (2019)



Source: ICAO estimates based on ICAO ADS-B, OAG, ICAO LTF, ICAO Statistical Reporting, and IATA Economics

North America and China account for over half of world's domestic passenger traffic

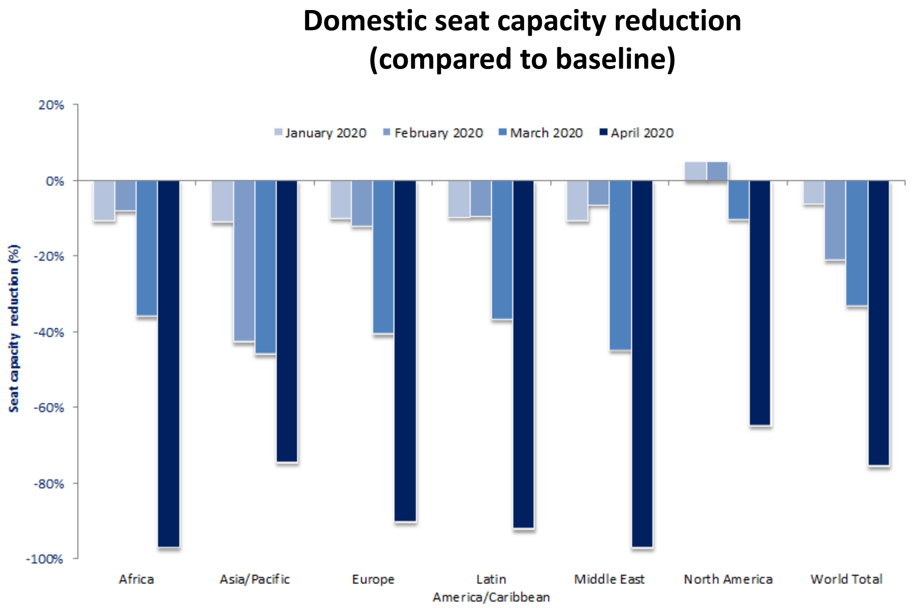
Number of Domestic Passengers by Route Group (2019)

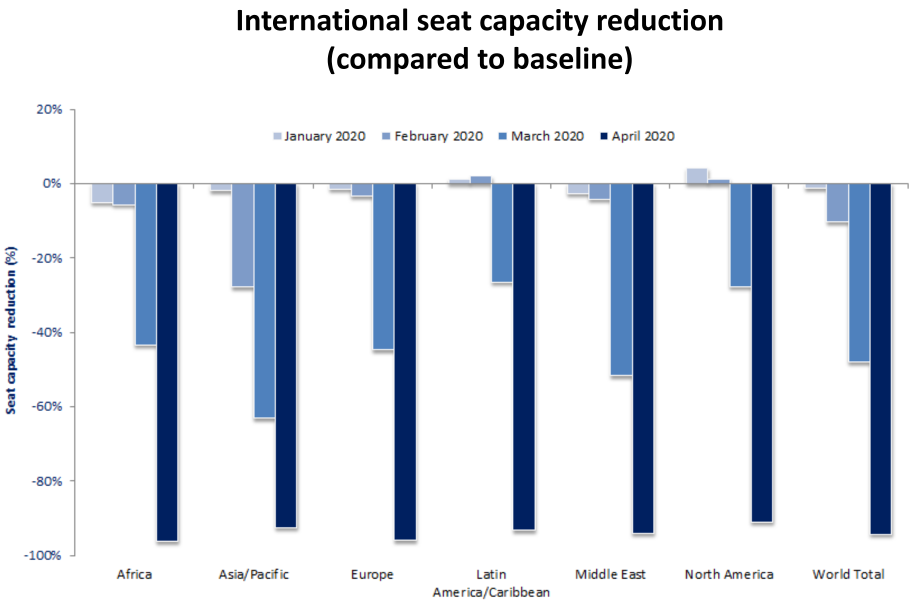


Source: ICAO estimates based on ICAO ADS-B, OAG, ICAO LTF, ICAO Statistical Reporting, and IATA Economics

Domestic passenger traffic may be more resilient than international in some markets

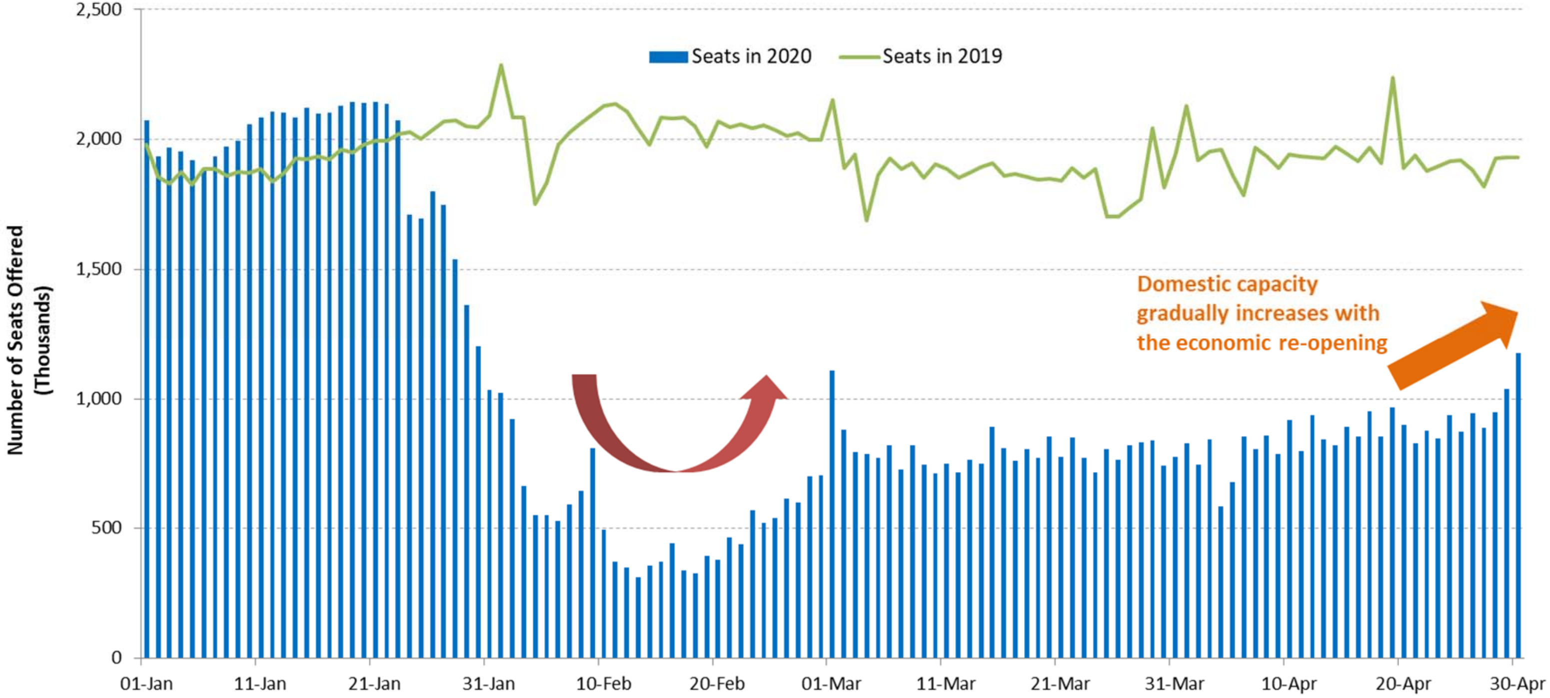
Asia/Pacific and North America have experienced 20% to 25% less decline in domestic passenger traffic than international





Domestic passenger traffic may recover ahead of international

Domestic passenger traffic in China already bottomed out in mid-February, followed by the slow pace of recovery



Source: ICAO ADS-B operation data

Illustrative 3 scenarios with 6 different paths assuming one step ahead of international traffic

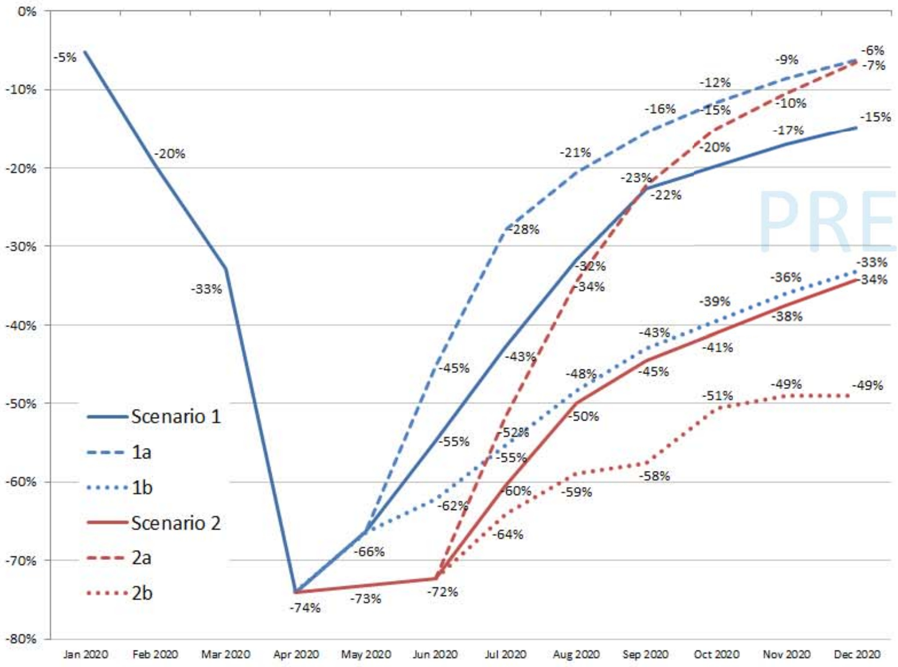
- **Baseline (counterfactual, no COVID-19 pandemic)**
  - **Originally-planned or business as usual**: trend line growth from 2019 level

*: There is different timing and speed of recovery by region, where Asia/Pacific sees earlier start

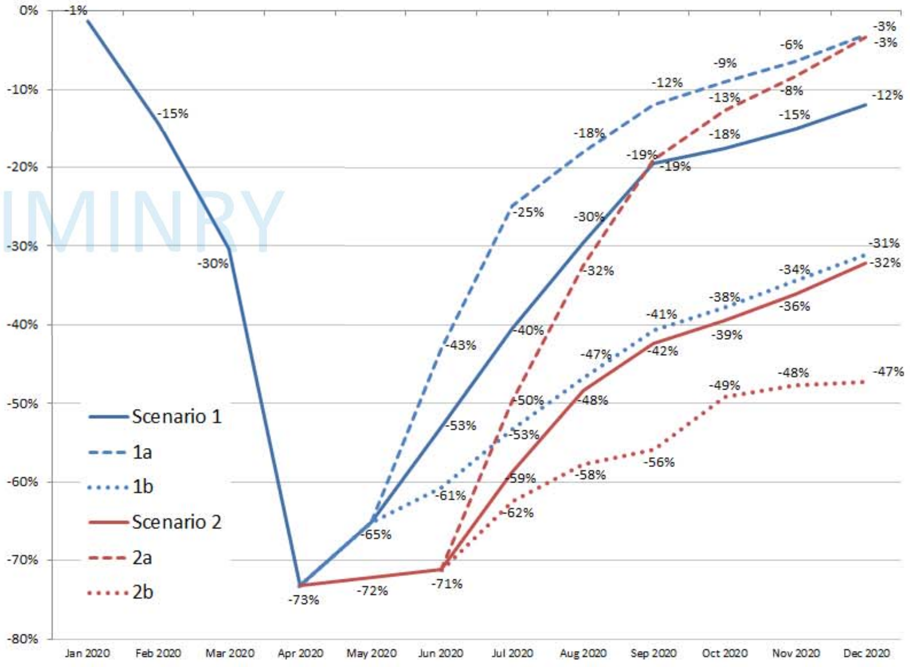
- **Scenario 1 (V-shaped path, bottom out and pick up from late May*)**
  - **Path 1**: Gradual capacity recovery (in a soft patch in Q4) to 85% of Baseline level by December
  - **Path 1a**: Swift capacity rebound to 95% of Baseline pushed by pent-up demand
  - **Path 1b**: Slow progression to recover 75% capacity with sluggish demand growth
- **Scenario 2 (U-shaped path, bottom out and pick up from July*)**
  - **Path 2**: Gradual capacity recovery to 75% of Baseline by December with sluggish demand growth
  - **Path 2a**: Swift capacity rebound to 93%, outpacing demand recovery
  - **Path 2b**: Capacity recovery only to 50% with respite and continuous demand slump

Scenarios 1 & 2: seat capacity reduction by 28 - 51% from Baseline and 25 - 49% from 2019

Comparison to Baseline



Comparison to 2019 (YoY)



Source: ICAO estimates based on ICAO ADS-B, OAG, Routes Online and airline websites

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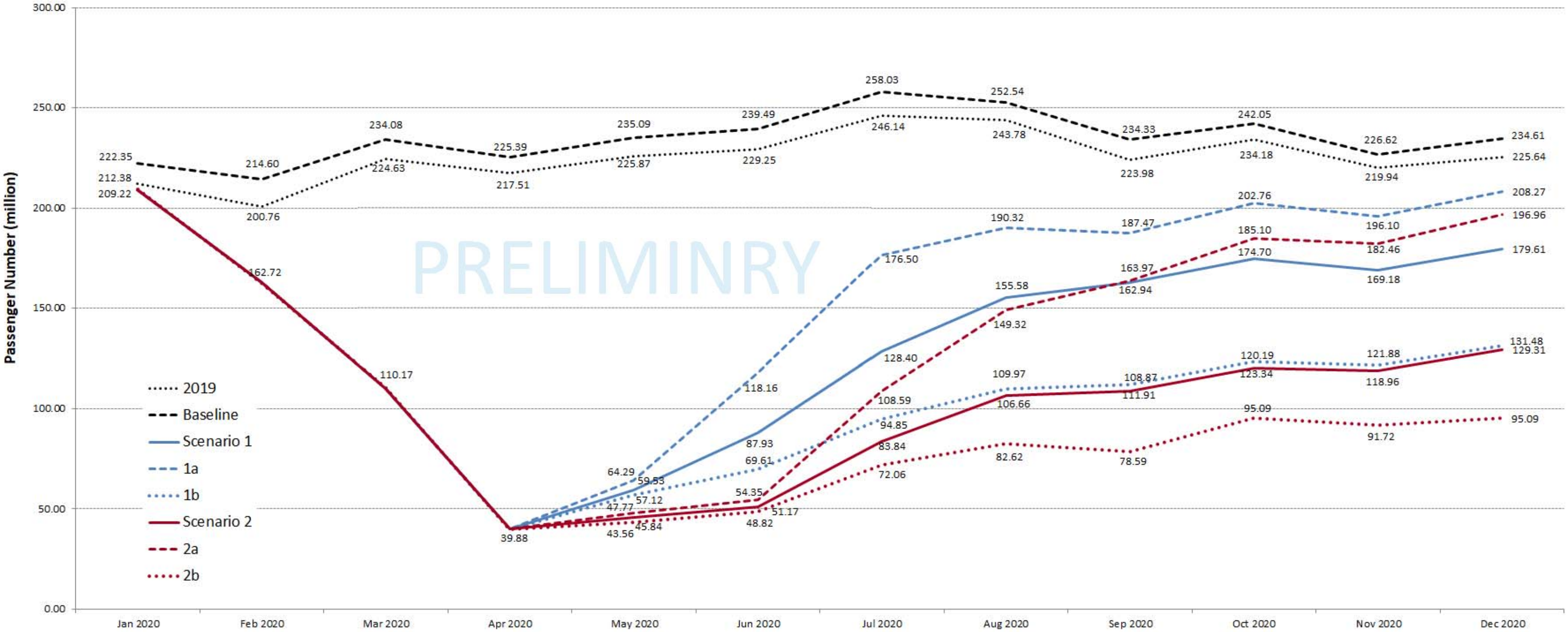
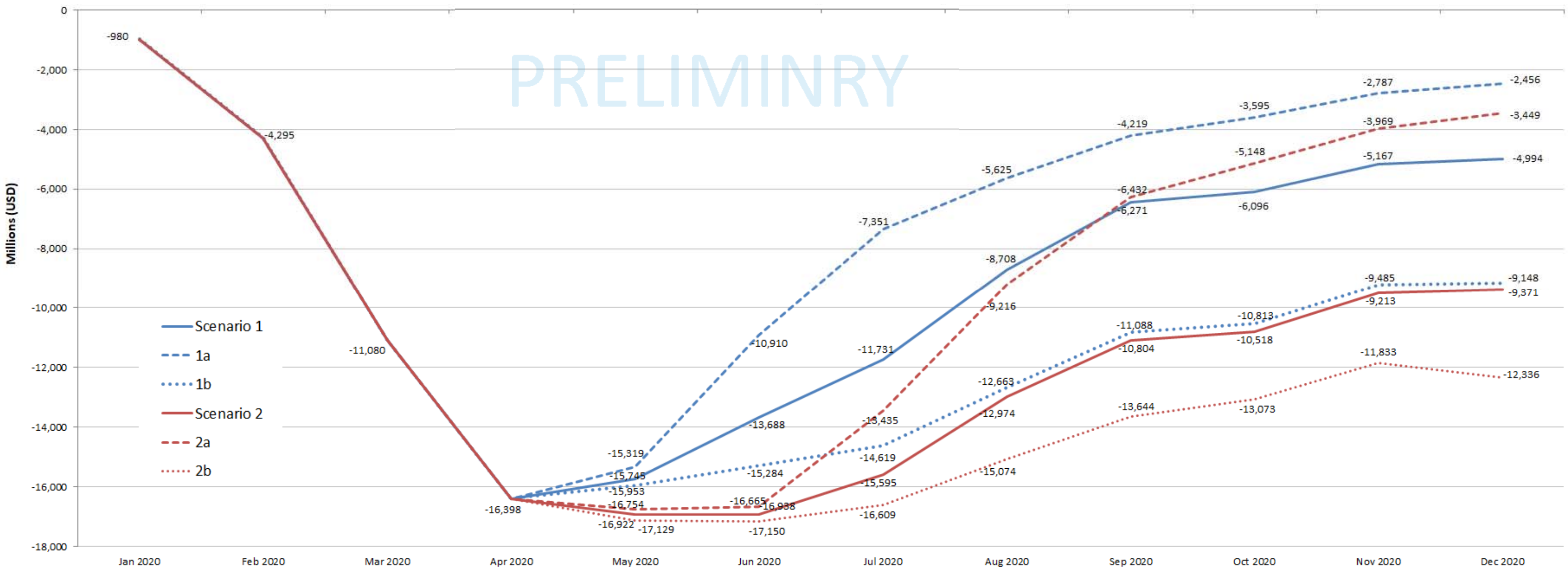
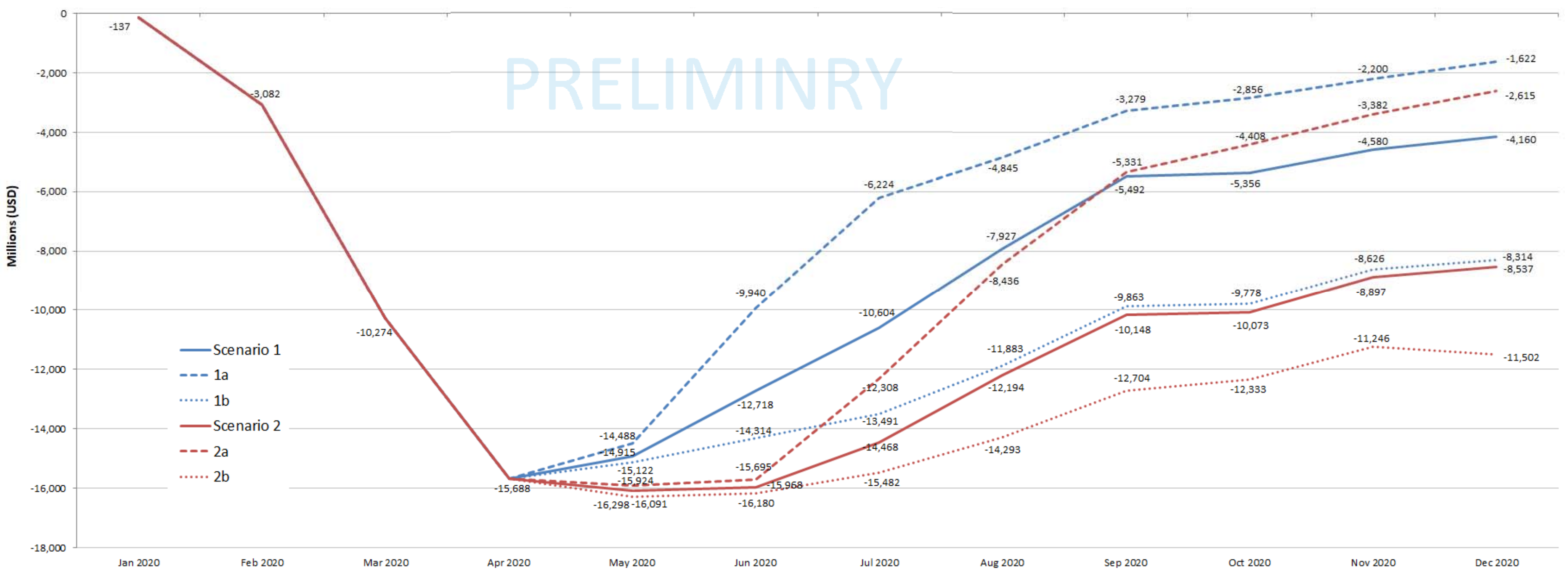
Scenarios 1 & 2: 953 - 1,690 million less passengers than Baseline and 838 - 1,575 million below 2019



Scenarios 1 & 2: USD 85 to 150 billion less revenues than Baseline



Scenarios 1 & 2: USD 75 to 139 billion less revenues than 2019



Estimated results in brief

The latest estimates indicate that the possible COVID-19 impact on scheduled domestic passenger traffic for the full year 2020, compared to Baseline (business as usual, originally-planned), would be:

V-shaped path (Scenario 1: bottom out and pick up from late May)

- Overall reduction ranging from **28% to 43% of seats offered by airlines**
- Overall reduction of **953 to 1,477 million passengers**
- Approx. **USD 85 to 131 billion potential loss** of gross operating revenues of airlines

U-shaped path (Scenario 2: bottom out and pick up from July)

- Overall reduction ranging from **35% to 51% of seats offered by airlines**
- Overall reduction of **1,209 to 1,690 million passengers**
- Approx. **USD 108 to 150 billion potential loss** of gross operating revenues of airlines

The impacts depend on duration and magnitude of the outbreak and containment measures, the degree of consumer confidence for air travel, and economic conditions, etc.

Appendix D: Airlines' Financial Analysis

Figures and estimates herein are subject to substantial changes, and will be updated with the situation evolving and more information available.

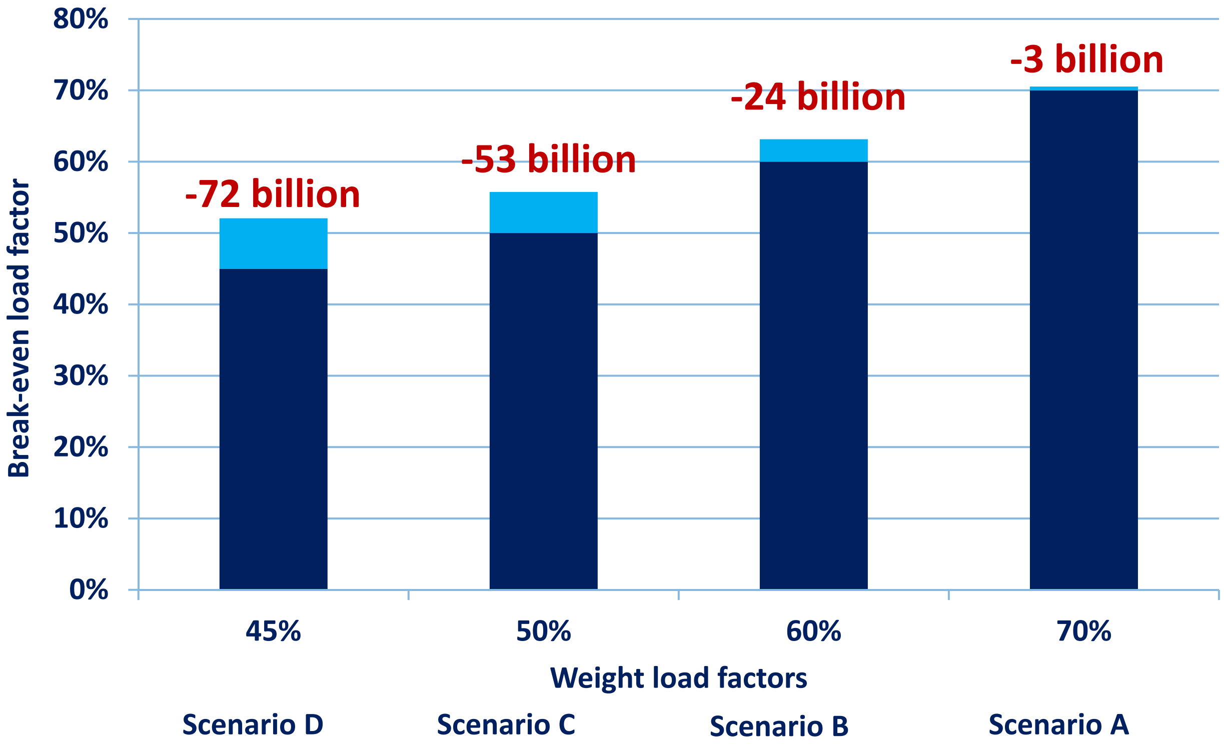
Break-even weight load factor

Scenarios are based on the assumption that air traffic, measured in Revenue Tonnes-Kilometres (RTKs, both international and domestic), will **decrease by 50% in 2020** compared to 2019

	Scenario A **Weight load factor = 70%**	**Scenario B** **Weight load factor = 60%**	**Scenario C** **Weight load factor = 50%**	**Scenario D** **Weight load factor = 45%**
	Load factor remains high, rebound of demand in Q3 and Q4 with severe capacity cuts	Load factor moderate-high and rebound during Q4, with capacity cuts in all regions	Low load factor and moderate return of normal capacity in Q3 and Q4	Low load factors (social distancing) and airlines increase capacity in Q2 2020
Total capacity reduction	-51%	-42%	-31%	-23%
Fuel costs (USD, billion) *Oil price: 49% decrease compared to 2019 levels*	46	54	65	72
Break-even weight load factor *(excluding depreciation and amortization costs)*	70.5%	63.1%	55.8%	52.1%

Source: ICAO estimates based on ICAO Statistical Reporting

Airlines close to break even as load factor increases



Operating loss
Excluding depreciation and amortizations costs

Difference between load factor and break-even load factors in each scenario

Source: ICAO estimates based on ICAO Statistical Reporting

Appendix E: Estimated Results at Route Group Level

The estimates will be updated with the situation evolving and more information available.

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Estimated results by route group for Jan-Apr 2020 (compared to Baseline)

Route Group	DOM/INT	Seat capacity				Scheduled passenger (thousand)				Gross revenue (USD, million)			
		Jan 2020	Feb 2020	Mar 2020	Apr 2020	Jan 2020	Feb 2020	Mar 2020	Apr 2020	Jan 2020	Feb 2020	Mar 2020	Apr 2020
Africa	Domestic	-10.0%	-7.4%	-35.5%	-96.8%	-453	-310	-1,746	-3,483	-40	-28	-156	-311
Africa - Asia/Pacific	International	4.4%	-19.3%	-46.2%	-94.7%	16	-118	-247	-380	9	-65	-136	-210
Africa - Middle East	International	-5.9%	-6.5%	-56.1%	-96.0%	-87	-182	-1,622	-2,535	-19	-40	-355	-555
Africa - North America	International	-8.6%	-2.8%	-25.9%	-87.2%	-17	-9	-89	-181	-12	-6	-65	-133
Africa & Middle East - Central America/Caribbean	International					0	0	0	0	0	0	0	0
Africa & Middle East - South America	International	1.8%	4.7%	-22.9%	-83.8%	4	-8	-55	-114	1	-3	-23	-48
Central America/Caribbean	Domestic	-2.8%	-3.0%	-20.9%	-84.0%	-108	-158	-1,606	-4,609	-8	-12	-120	-346
Central America/Caribbean - Europe	International	-0.9%	0.5%	-19.3%	-94.6%	21	11	-540	-1,406	7	4	-184	-481
Central America/Caribbean - North America	International	4.7%	4.4%	-20.5%	-91.3%	446	318	-3,552	-7,679	70	50	-557	-1,205
Central America/Caribbean - South America	International	5.1%	9.8%	-26.2%	-96.6%	71	104	-485	-1,233	13	19	-89	-225
China	Domestic	-10.5%	-75.5%	-60.3%	-55.7%	-8,755	-47,168	-37,369	-32,255	-770	-4,151	-3,288	-2,838
China - Europe	International	1.8%	-52.1%	-74.1%	-93.1%	59	-929	-1,553	-2,010	18	-282	-471	-610
China - Middle East	International	5.2%	-56.5%	-76.6%	-91.8%	36	-335	-495	-573	9	-82	-121	-140
China - North America	International	2.9%	-45.0%	-66.4%	-92.4%	47	-680	-1,106	-1,512	19	-273	-444	-607
China & South West Asia - North Asia	International	-0.9%	-43.7%	-84.3%	-89.6%	-113	-3,485	-6,026	-5,774	-20	-620	-1,072	-1,027
China & South West Asia - Pacific South East Asia	International	-2.2%	-47.5%	-72.1%	-91.0%	-354	-5,734	-8,323	-9,169	-77	-1,241	-1,801	-1,984
Europe	Domestic	-7.4%	-7.4%	-37.5%	-89.2%	-2,124	-2,212	-13,081	-24,025	-172	-179	-1,060	-1,946
Europe - Middle East	International	0.8%	-0.5%	-43.9%	-89.8%	298	-9	-4,279	-7,357	55	-2	-787	-1,354

Source: ICAO estimates based on ICAO ADS-B, OAG, ICAO-ICM MIDT, ICAO LTF, ICAO Statistical Reporting, IATA Economics, and IMF Economic Outlook

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Estimated results by route group for Jan-Apr 2020 (compared to Baseline)

Route Group	DOM/INT	Seat capacity				Scheduled passenger (thousand)				Gross revenue (USD, million)			
		Jan 2020	Feb 2020	Mar 2020	Apr 2020	Jan 2020	Feb 2020	Mar 2020	Apr 2020	Jan 2020	Feb 2020	Mar 2020	Apr 2020
Europe - North Africa	International	-0.1%	0.9%	-41.0%	-97.8%	50	-5	-1,846	-4,102	7	-1	-272	-605
Europe - North America	International	5.0%	4.6%	-34.5%	-91.3%	431	249	-3,111	-7,193	135	78	-976	-2,258
Europe - North Asia	International	4.9%	4.5%	-42.1%	-89.7%	57	-11	-546	-1,067	27	-5	-256	-500
Europe - Pacific South East Asia	International	-3.3%	-0.6%	-14.4%	-91.6%	-37	-102	-576	-1,400	-18	-51	-288	-699
Europe - South America	International	-5.6%	-5.5%	-37.2%	-95.6%	-49	-69	-697	-1,355	-18	-25	-249	-484
Europe - South West Asia	International	1.1%	2.2%	-36.8%	-90.0%	44	-61	-988	-1,776	12	-16	-266	-479
Europe - Sub Saharan Africa	International	2.4%	2.6%	-26.9%	-90.4%	92	42	-765	-1,575	39	18	-324	-667
Intra Africa	International	-10.4%	-10.7%	-44.4%	-95.5%	-288	-381	-1,391	-2,430	-38	-50	-182	-317
Intra Central America/Caribbean	International	4.5%	3.6%	-27.5%	-89.8%	67	40	-595	-1,326	6	3	-50	-110
Intra China & South West Asia	International	-10.3%	-60.8%	-79.0%	-88.8%	-538	-3,067	-4,091	-4,490	-69	-390	-521	-571
Intra Europe	International	-2.3%	-3.7%	-46.5%	-96.4%	-180	-2,303	-29,696	-59,199	-18	-234	-3,023	-6,027
Intra Middle East	International	-6.1%	-6.0%	-68.2%	-94.8%	-73	-219	-2,734	-3,711	-8	-25	-313	-425
Intra North America	International	3.3%	2.7%	-23.6%	-93.4%	111	14	-1,295	-2,738	15	2	-173	-365
Intra North Asia	International	-2.2%	-2.7%	-78.8%	-96.4%	-34	-224	-1,094	-1,669	-2	-12	-59	-90
Intra Pacific South East Asia	International	-1.3%	-5.5%	-45.6%	-94.9%	-151	-1,639	-5,038	-7,794	-23	-244	-750	-1,160
Intra South America	International	-9.5%	-7.3%	-39.9%	-96.9%	-195	-144	-934	-1,699	-34	-25	-162	-295
Latin America/Caribbean - China	International	5.0%				0	0	0	0	0	0	0	0
Latin America/Caribbean - North Asia & Pacific South East Asia	International	2.9%	0.2%	-17.9%	-78.9%	2	-8	-30	-64	1	-5	-20	-44

Estimated results by route group for Jan-Apr 2020 (compared to Baseline)

Route Group	DOM/INT	Seat capacity				Scheduled passenger (thousand)				Gross revenue (USD, million)			
		Jan 2020	Feb 2020	Mar 2020	Apr 2020	Jan 2020	Feb 2020	Mar 2020	Apr 2020	Jan 2020	Feb 2020	Mar 2020	Apr 2020
Middle East	Domestic	-10.0%	-5.8%	-44.5%	-96.0%	-101	-198	-1,792	-3,445	-9	-18	-167	-321
Middle East - North America	International	2.0%	2.6%	-27.4%	-90.2%	42	20	-339	-726	20	10	-161	-345
Middle East - North Asia & Pacific South East Asia	International	-1.5%	-2.3%	-36.1%	-82.1%	-22	-331	-1,360	-2,193	-6	-89	-364	-587
Middle East - South West Asia	International	-3.1%	-1.6%	-44.1%	-96.6%	-132	-627	-2,951	-4,838	-21	-99	-466	-764
North America	Domestic	1.8%	5.0%	-14.5%	-67.1%	2,721	4,165	-36,740	-58,164	316	484	-4,266	-6,753
North America - North Asia	International	5.0%	5.1%	-25.1%	-85.1%	68	-89	-618	-1,277	21	-28	-195	-403
North America - Pacific South East Asia	International	4.1%	5.9%	-17.8%	-88.7%	31	-45	-295	-630	25	-36	-235	-503
North America - South America	International	4.9%	5.0%	-27.6%	-94.0%	79	59	-618	-1,260	31	23	-243	-496
North America - South West Asia	International	3.6%	4.8%	-28.3%	-92.0%	7	-13	-94	-180	5	-10	-69	-133
North Asia	Domestic	0.3%	-2.5%	-19.2%	-54.9%	174	-961	-6,791	-7,770	9	-48	-340	-389
North Asia - Pacific South East Asia	International	-0.2%	-7.6%	-63.6%	-89.1%	-47	-1,069	-3,478	-3,846	-12	-276	-899	-994
Pacific South East Asia	Domestic	-7.4%	-8.2%	-30.6%	-88.2%	-1,554	-2,646	-11,924	-24,195	-95	-162	-731	-1,483
South America	Domestic	-8.9%	-9.2%	-39.9%	-94.8%	-1,275	-1,462	-7,129	-13,960	-108	-123	-602	-1,178
South West Asia	Domestic	-10.0%	-4.3%	-30.9%	-98.8%	-1,650	-935	-5,728	-13,608	-101	-57	-351	-834
Domestic		-5.2%	-19.6%	-32.9%	-74.0%	-13,125	-51,883	-123,905	-185,516	-980	-4,295	-11,080	-16,398
International		-1.2%	-10.3%	-48.0%	-93.6%	-241	-21,041	-93,550	-158,462	151	-4,030	-16,623	-27,901
Total		-3.6%	-15.9%	-39.0%	-82.3%	-13,366	-72,924	-217,455	-343,978	-829	-8,325	-27,703	-44,300

*: April results are preliminary.

Source: ICAO estimates based on ICAO ADS-B, OAG, ICAO-ICM MIDT, ICAO LTF, ICAO Statistical Reporting, IATA Economics, and IMF Economic Outlook

Estimated results by route group for Jan-Apr 2020 (compared to Jan-Apr 2019 year-on-year)

Route Group	DOM/INT	Seat capacity				Scheduled passenger (thousand)				Gross revenue (USD, million)			
		Jan 2020	Feb 2020	Mar 2020	Apr 2020	Jan 2020	Feb 2020	Mar 2020	Apr 2020	Jan 2020	Feb 2020	Mar 2020	Apr 2020
Africa	Domestic	-4.9%	0.0%	-32.4%	-96.7%	-249	-48	-1,567	-3,390	-22	-4	-140	-303
Africa - Asia/Pacific	International	18.1%	-1.2%	-37.9%	-94.0%	67	-47	-192	-334	37	-26	-106	-185
Africa - Middle East	International	7.2%	9.6%	-50.1%	-95.6%	248	169	-1,306	-2,283	54	37	-286	-500
Africa - North America	International	7.6%	22.2%	-13.0%	-86.0%	16	28	-57	-163	12	21	-42	-120
Africa & Middle East - Central America/Caribbean	International		-100.0%			0	0	0	0	0	0	0	0
Africa & Middle East - South America	International	-5.7%	1.9%	-26.8%	-81.8%	-7	-12	-62	-100	-3	-5	-26	-42
Central America/Caribbean	Domestic	9.2%	11.7%	-12.0%	-82.8%	452	461	-1,094	-4,257	34	35	-82	-319
Central America/Caribbean - Europe	International	-1.7%	2.6%	-21.0%	-94.4%	12	42	-568	-1,343	4	14	-194	-459
Central America/Caribbean - North America	International	0.0%	3.9%	-24.4%	-91.5%	95	318	-3,971	-7,759	15	50	-623	-1,217
Central America/Caribbean - South America	International	3.6%	8.4%	-28.4%	-96.4%	52	90	-522	-1,174	10	16	-95	-214
China	Domestic	-3.7%	-73.4%	-58.0%	-55.7%	-4,801	-42,509	-34,245	-32,074	-422	-3,741	-3,014	-2,823
China - Europe	International	4.0%	-49.0%	-73.1%	-93.1%	101	-821	-1,481	-2,008	31	-249	-449	-609
China - Middle East	International	6.4%	-56.4%	-77.1%	-91.8%	45	-332	-505	-573	11	-81	-124	-140
China - North America	International	-5.7%	-48.2%	-70.1%	-92.8%	-92	-761	-1,282	-1,591	-37	-306	-515	-639
China & South West Asia - North Asia	International	21.7%	-31.8%	-81.5%	-89.1%	1,237	-2,322	-4,988	-5,461	220	-413	-887	-971
China & South West Asia - Pacific South East Asia	International	6.7%	-45.6%	-71.3%	-91.0%	657	-5,325	-7,990	-9,083	142	-1,153	-1,729	-1,966
Europe	Domestic	-8.4%	-7.3%	-38.3%	-89.1%	-2,220	-2,063	-13,238	-23,808	-180	-167	-1,072	-1,928
Europe - Middle East	International	4.9%	6.1%	-42.6%	-89.6%	598	426	-4,090	-7,220	110	78	-753	-1,329

Source: ICAO estimates based on ICAO ADS-B, OAG, ICAO-ICM MIDT, ICAO LTF, ICAO Statistical Reporting, IATA Economics, and IMF Economic Outlook

Estimated results by route group for Jan-Apr 2020 (compared to Jan-Apr 2019 year-on-year)

Route Group	DOM/INT	Seat capacity				Scheduled passenger (thousand)				Gross revenue (USD, million)			
		Jan 2020	Feb 2020	Mar 2020	Apr 2020	Jan 2020	Feb 2020	Mar 2020	Apr 2020	Jan 2020	Feb 2020	Mar 2020	Apr 2020
Europe - North Africa	International	-0.9%	5.6%	-42.3%	-97.7%	55	161	-1,892	-3,810	8	24	-279	-562
Europe - North America	International	-0.6%	4.1%	-36.2%	-91.3%	119	226	-3,280	-7,233	37	71	-1,029	-2,270
Europe - North Asia	International	4.3%	6.4%	-41.9%	-89.4%	53	7	-539	-1,025	25	3	-253	-481
Europe - Pacific South East Asia	International	5.5%	6.7%	-19.2%	-91.3%	120	17	-671	-1,346	60	8	-335	-673
Europe - South America	International	-2.7%	0.0%	-36.9%	-95.4%	-3	6	-686	-1,304	-1	2	-245	-466
Europe - South West Asia	International	-8.3%	-3.9%	-43.0%	-89.9%	-143	-168	-1,188	-1,750	-39	-45	-320	-472
Europe - Sub Saharan Africa	International	0.6%	5.2%	-27.5%	-90.4%	62	84	-779	-1,578	26	36	-330	-668
Intra Africa	International	1.5%	5.3%	-36.4%	-95.0%	29	-17	-1,054	-2,170	4	-2	-138	-283
Intra Central America/Caribbean	International	1.1%	3.9%	-30.3%	-90.0%	22	48	-647	-1,355	2	4	-54	-113
Intra China & South West Asia	International	-2.0%	-57.0%	-76.9%	-87.4%	-105	-2,643	-3,640	-3,942	-13	-336	-463	-502
Intra Europe	International	-0.6%	3.4%	-43.0%	-96.3%	946	1,062	-26,168	-56,680	96	108	-2,664	-5,771
Intra Middle East	International	-2.4%	-0.4%	-66.7%	-94.5%	91	-13	-2,559	-3,488	10	-2	-293	-399
Intra North America	International	-4.0%	-1.1%	-29.5%	-93.6%	-76	-67	-1,527	-2,811	-10	-9	-204	-375
Intra North Asia	International	-32.5%	-31.0%	-85.0%	-96.6%	-617	-709	-1,627	-1,752	-33	-38	-87	-94
Intra Pacific South East Asia	International	7.1%	2.0%	-42.7%	-94.7%	540	-1,063	-4,605	-7,465	80	-158	-686	-1,111
Intra South America	International	-9.5%	-3.7%	-37.3%	-96.5%	-183	-69	-851	-1,517	-32	-12	-148	-264
Latin America/Caribbean - China	International	-66.0%	-100.0%	-100.0%	-100.0%	-6	-8	-8	-10	-4	-6	-6	-8
Latin America/Caribbean - North Asia & Pacific South East Asia	International	2.9%	0.7%	-19.3%	-77.2%	2	-8	-31	-59	2	-5	-21	-40

Source: ICAO estimates based on ICAO ADS-B, OAG, ICAO-ICM MIDT, ICAO LTF, ICAO Statistical Reporting, IATA Economics, and IMF Economic Outlook

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Estimated results by route group for Jan-Apr 2020 (compared to Jan-Apr 2019 year-on-year)

Route Group	DOM/INT	Seat capacity				Scheduled passenger (thousand)				Gross revenue (USD, million)			
		Jan 2020	Feb 2020	Mar 2020	Apr 2020	Jan 2020	Feb 2020	Mar 2020	Apr 2020	Jan 2020	Feb 2020	Mar 2020	Apr 2020
Middle East	Domestic	-15.5%	-8.5%	-48.1%	-96.0%	-312	-278	-2,009	-3,437	-29	-26	-187	-320
Middle East - North America	International	4.8%	6.6%	-27.6%	-90.0%	63	46	-340	-708	30	22	-162	-337
Middle East - North Asia & Pacific South East Asia	International	-0.5%	2.8%	-36.0%	-81.4%	13	-208	-1,346	-2,089	3	-56	-361	-560
Middle East - South West Asia	International	2.9%	9.5%	-39.7%	-96.3%	184	-140	-2,570	-4,382	29	-22	-406	-692
North America	Domestic	4.8%	11.5%	-12.4%	-65.6%	4,820	8,058	-34,585	-54,703	560	936	-4,015	-6,351
North America - North Asia	International	3.5%	5.0%	-26.7%	-84.8%	51	-87	-642	-1,249	16	-27	-203	-394
North America - Pacific South East Asia	International	6.5%	13.0%	-18.2%	-88.8%	52	-1	-296	-636	41	-1	-236	-508
North America - South America	International	-8.0%	-2.8%	-34.1%	-94.1%	-115	-35	-744	-1,274	-45	-14	-293	-502
North America - South West Asia	International	20.4%	24.4%	-14.9%	-88.7%	35	15	-63	-124	26	11	-47	-92
North Asia	Domestic	3.1%	2.3%	-18.5%	-54.5%	542	-397	-6,581	-7,596	27	-20	-329	-380
North Asia - Pacific South East Asia	International	15.9%	8.6%	-59.9%	-88.9%	674	-365	-3,036	-3,765	174	-94	-784	-973
Pacific South East Asia	Domestic	-1.2%	0.5%	-26.2%	-87.5%	151	-470	-10,272	-22,602	9	-29	-629	-1,385
South America	Domestic	-7.2%	-5.1%	-35.7%	-94.5%	-823	-718	-6,020	-13,004	-69	-61	-508	-1,097
South West Asia	Domestic	-5.5%	0.5%	-27.4%	-98.7%	-720	-76	-4,844	-12,758	-44	-5	-297	-782
Domestic		-1.3%	-14.5%	-30.4%	-73.2%	-3,160	-38,039	-114,455	-177,629	-137	-3,082	-10,274	-15,688
International		1.8%	-5.0%	-46.2%	-93.4%	4,893	-12,477	-87,807	-152,613	1,098	-2,555	-15,876	-26,997
Total		-0.1%	-10.6%	-36.9%	-81.7%	1,732	-50,516	-202,262	-330,242	961	-5,637	-26,150	-42,685

*: April results are preliminary.

Source: ICAO estimates based on ICAO ADS-B, OAG, ICAO-ICM MIDT, ICAO LTF, ICAO Statistical Reporting, IATA Economics, and IMF Economic Outlook

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