



COVID-19 TRANSPORT BRIEF

Restoring air connectivity under policies to mitigate climate change

20 May 2020

Aviation is one of the sectors hardest hit by the Covid-19 crisis, with many countries closing their borders and [suspending international air travel](#). Domestic air travel is also curtailed by social distancing, confinement measures, and shrinking economic activity. The [80% global drop](#) in flights has caused severe financial disruption to the aviation sector.

The issue

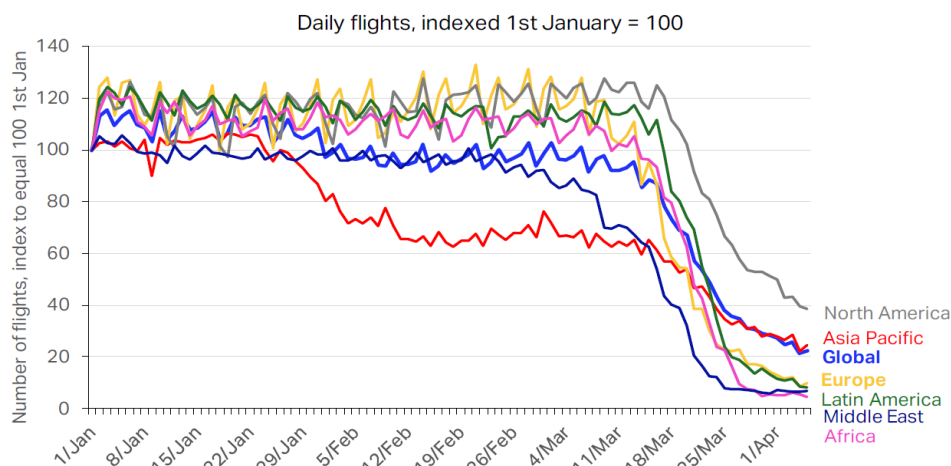
Restoring air connectivity will be important for economic recovery. Governments, airports, and airlines will need to co-operate closely to agree sanitary measures that allow flights to be reinstated as rapidly as possible, learning from measures adopted across the globe and in response to previous epidemics pandemics. Intervention to support aviation during the crisis will need to be compatible with the long-term policy objectives of fostering efficient aviation markets and meeting agreed climate change mitigation targets.

The impact of Covid-19 crisis measures on aviation

The Coronavirus crisis will cause double the loss of economic output of the 2008 global financial crisis and will create the biggest shock in a century for many economies, according to [April 2020 estimates](#). A 13% reduction in the UK's Gross Domestic Product (GDP) for the 2020 financial year [is expected](#). The unprecedented nature of the lockdown measures taken by governments make scenarios for recovery particularly uncertain. The longer restrictions remain in place, the more likely it is that future economic output will be depressed because of business failures, cancelled investments, and long-term unemployment.

Aviation activity has fallen to very low levels. The introduction of international travel bans in March are highly visible in the accompanying [data from IATA](#). Europe saw an [89% year-on-year drop](#) in scheduled flights in April. Most of the remaining activity is in Chinese, Japanese, and US domestic markets. Scheduled flights in April were [down by around 43%](#) compared to the previous year in China and Japan, and by around 56% in the US.

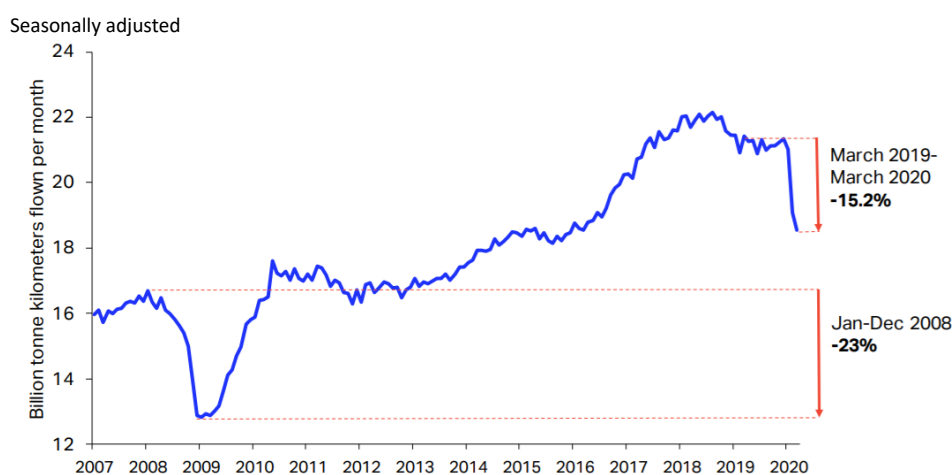
Worldwide flights down 80%



Source: IATA Economics analysis based on data provided under license by FlightRadar 24. All rights reserved.

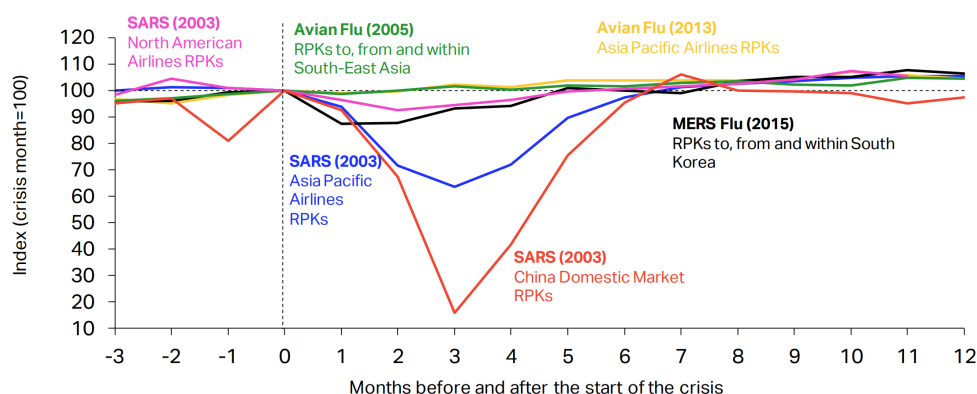
[Air cargo volumes have declined with economic activity](#), but freight-only flights have grown, with some passenger aircraft converted to carry freight to cover for cargo that is usually carried in the bellies of passenger aircraft. Supply of medical materials and equipment is critically dependent on air freight during the crisis. The volume of pharmaceutical products carried has doubled.

Air cargo traffic has fallen abruptly, albeit less than passenger traffic



Source: IATA Economics using data from IATA Statistics

Covid-19 will have a much greater impact on air passenger travel than previous corona virus and influenza outbreaks



Source: IATA Economics using data from IATA Statistics

Aviation's [recovery](#) from the Covid-19 crisis will be slower than from other recent corona virus and influenza outbreaks. While the initial impact of Covid-19 on global revenue-passenger-kilometres (RPKs) was similar to that of SARS on the Chinese market in 2003, the relatively speedy V-shaped recovery from SARS was possible due to a rapid return of passenger confidence in flying. The speed of recovery from the Covid-19 crisis will largely depend on government decisions on international travel restrictions and the relaxation of domestic confinement measures.

Key insights

In common with much of the rest of the economy, government assistance is needed in the aviation sector to preserve incomes and jobs through the crisis. Sector-specific measures taken include suspending requirements for 'use it or lose it' landing rights at slot-coordinated airports. Some state-owned airports have suspended landing charges for remaining traffic, as in Iceland and Norway. Others, like Australia, have focused on protecting services to remote communities.

Government support to airlines

[IATA](#) estimates that airlines had pre-crisis cash reserves allowing them to survive an average two months of crisis conditions. Unaided, many airlines could go out of business before travel restrictions are lifted. Some governments have already provided loans or taken temporary equity stakes in airlines and airports to moderate disruption, for example in France, the Netherlands, Scandinavia, and the US.

There is no single approach to supporting airlines during the crisis. Some governments have provided immediate support to airlines. For example, the US government earmarked USD 25

billion for a mix of grants, loans, and equity options for its airlines at the end of March. Australia and the UK have taken a different approach. Australia has turned down applications for support, partly because of the potential negative impact on competition. The UK Treasury will only consider support once all commercial finance options are exhausted.

French government support to Air France-KLM required an undertaking to bring forward the company's commitment to halve CO₂ emissions per passenger from 2030 to 2024 for domestic flights.

Support to airlines in selected countries in addition to payroll support (as of 18 May)

	USA	France	The Netherlands	Norway
Airlines eligible	All US passenger air carriers	Air France	KLM	Norwegian Air Shuttle, SAS, Widerøe
Grants	USD 17.5 billion	0	0	0
Equity stakes	Optional	0	0	0
Loan guarantees	0	4	In negotiation	NOK 6 billion
Government loans	USD 32.5 billion	3	In negotiation	0
Total	USD 50 billion	EUR 7 billion	EUR 2-4 billion	NOK 6 billion

Notes: The US Treasury will receive warrants to buy shares (single-digit stakes) from airlines accepting loans. Norway's guarantees are allocated to Norwegian Air Shuttle (NOK 3 billion), SAS (NOK 1.5 billion), and to Widerøe and other airlines (NOK 1.5 billion) totalling EUR 537 million. The Danish and Swedish government have also pledged up to [EUR 137 million](#) each in loans for SAS.

Governments must take a long-term view of their air connectivity needs and the commercial standing of airlines when determining what financial support to make available. Where governments had decided to discontinue support to an airline prior to the crisis, direct income support for the labour force is preferable and less costly than postponing inevitable exit from the market. Where carriers exit markets, governments should take measures to [facilitate competition](#) in the recovery, such as reserving relinquished slots for new entrants at slot-constrained airports.

Ownership and control restrictions limiting foreign investment in airlines could also be relaxed to make equity more available from the market. The crisis could be an opportunity to lift restrictions applied unevenly as a result of international alliances and joint ventures, and stimulate investment.

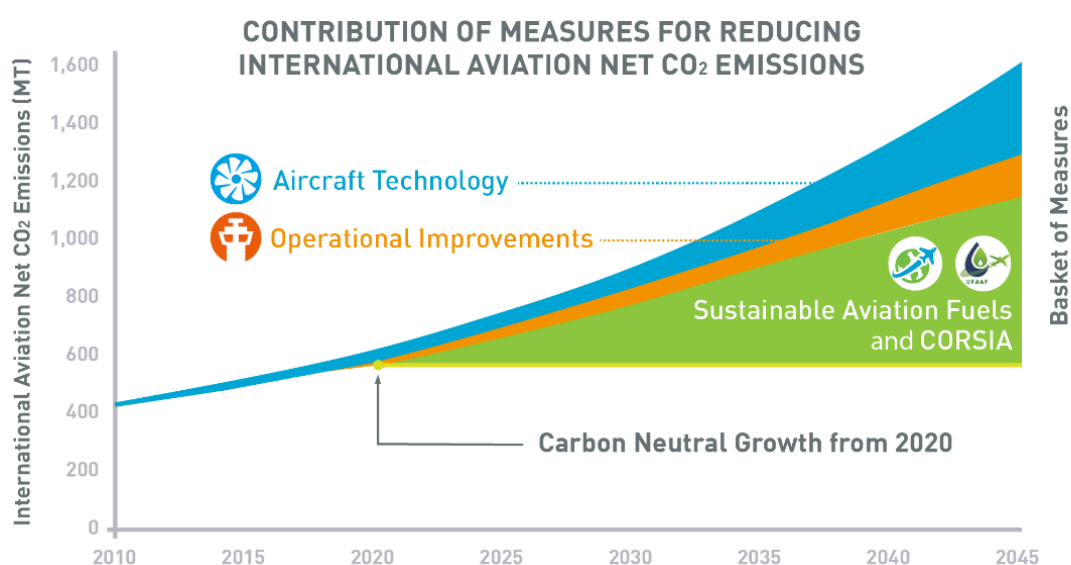
Protecting essential air connectivity can also support the aviation sector. Air connections are particularly important where there are no substitutes, which is the case for remote locations and island states. During the Covid-19 crisis, flight cancellations have had a particularly severe impact on [islands and peripheral regions](#), many losing all international connections.

Many governments supported routes providing essential air connectivity before the crisis and some have introduced new support since the crisis, for example in Australia, where support is provided for services on specific routes rather than to particular carriers. The benefit of such an approach is its focus on connectivity outcomes. [Subsidies should be non-discriminatory towards carriers and include sunset clauses](#) to ensure that subsidies are periodically revised and revoked once the crisis is over.

Environmental protection

Environmental policy for the sector is subject to long-standing concerns over noise, air pollution, and a growing imperative to mitigate CO₂ emissions. These policy priorities are unaltered by the Covid-19 crisis. Continued international co-operation to reduce the climate impact of aviation under the auspices of ICAO continues to be a priority, with much remaining to be done to complete implementation mechanisms for the measures adopted. The crisis will temporarily reduce CO₂ emissions from aviation. It may also accelerate retirement of less fuel-efficient aircraft in a depressed market, but delaying or relaxing environmental protection measures would not be an appropriate part of Covid-19 crisis recovery policies.

ICAO's Framework for CO₂ Emissions Mitigation from International Aviation



Source: [ICAO](#)

ICAO has established a [Carbon Offsetting and Reduction Scheme for International Aviation](#) (CORSIA) that aims to achieve carbon-neutral growth in international aviation from 2020. Beyond anticipated fuel and operational efficiency improvements, CORSIA relies on

sustainable aviation fuels (SAF) and a market-based mechanism (MBM) for offsetting carbon, mainly through forestry projects. Although emissions reporting under CORSIA has begun, much still remains to be done, notably the definition of non-emissions-related fuel sustainability criteria (e.g. water and biodiversity) and guaranteeing the environmental integrity of offsets. The MBM architecture can accommodate short-term disruptions, but action to reduce CO₂ emissions will be no less urgent in the Covid-19 crisis recovery.

ICAO's MBM aims to mitigate CO₂ emissions cost effectively through airline-funded investments to reduce carbon emissions in other sectors. ICAO is currently working on ensuring that offsets are effective in reducing carbon emissions. Forestry projects raise the most complicated issues. Illegal logging and fires make it almost impossible to guarantee carbon sequestration over time and inadvertent incentives to fell and replant may be created with disastrous impacts on biodiversity. Strong local governance frameworks are needed for credible offsets.

ICAO's focus has also been on biofuels delivering certified net CO₂ mitigation without undue impacts on biodiversity, water quality or food production. Experience with biofuel mandates in the European Union underlines the challenge involved:

- ☀ Conventional biofuels that meet these criteria are mainly derived from food and agricultural waste, and are available in only limited quantities, insufficient to meet demand from aviation.
- ☀ The indirect land-use change impacts of producing biofuels from crops have proved impossible to quantify or contain.
- ☀ The direct land-use change resulting from the production of biofuel crops can release large amounts of carbon from soils.

These difficulties have led the European Union to [end its biofuel mandate](#) and [cap national mandates](#) for producing transport fuels from crops (EU 2018, T&E 2018b).

Production volumes of sustainable biofuels are limited by the quantities of agricultural, forest, and municipal waste that can be collected, and the availability of suitable, uncultivated land. Fuels can also be produced from algae, but cost-effective techniques for producing this feedstock at scale are currently not available.

Electrofuels could complement sustainable biofuels in the long run. These are synthetic hydrocarbons produced by electrolysis of water and renewable carbon, from either biomass or air capture of CO₂. Sustainable production in sufficient quantities requires very large

amounts of low-carbon electricity. Battery-electric propulsion may also be effective for short flights with small passenger aircraft and a range of emerging electric assistance technologies could help reduce global aviation's overall carbon intensity.

Government support for aircraft manufacturing for post-Covid-19 recovery should prioritise technological innovation to mitigate CO₂ emissions.

Carbon pricing would facilitate carbon-neutral growth, as it would strengthen the business case for investments in energy efficiency, operational improvements, and spending on sustainable aviation fuels. Fuel for international flights is [exempt from excise tax](#), but the benefits of carbon pricing might make the zero rate worth revisiting. Carbon taxes are already levied on fuel used for domestic flights in some countries. Experience in California shows that, if paired with policies supporting technological development such as low-carbon fuel standards, even moderate carbon pricing levels can effectively accelerate technological gains and improve the competitiveness of low-carbon fuels.

An alternative carbon pricing instrument is emissions trading. Flights within Europe are subject to the EU Emissions Trading Scheme (ETS), but plans to include international aviation were withdrawn to facilitate progress on the development of the CORSIA agreement. [Views on the overall effectiveness of the system in reducing CO₂ emissions are divided](#).

Establishment of the ETS sent a signal of political intent but emissions trading schemes are harder to administer than a carbon tax. They require periodic negotiation between governments to set emission caps, opening the door to exemptions and other distortions. In the ETS, these issues resulted in unstable and weak prices far below the estimated social cost of carbon. Applying emissions trading to international aviation also raises the same fiscal issues as carbon pricing.

Conclusion

Covid-19 contingency measures and post-crisis consumer spending patterns are likely to severely dampen demand for air travel for an extended period. The disruption will accelerate the retirement of older, less fuel-efficient aircraft, based on experience with previous economic shocks. But neither effect will alter climate change impacts significantly and durably. Achieving international aviation's carbon neutral growth target is a formidable task regardless of the impact of Covid-19. Aid to the sector must align with existing sectoral policies to increase social welfare outcomes, both in terms of environmental impacts and consumer benefits.

