

An early assessment of the impact of COVID-19 on air transport: Just another crisis or the end of aviation as we know it?

Pere Suau-Sanchez^{a,b,*}, Augusto Voltes-Dorta^c, Natàlia Cugueró-Escofet^{a,d}

^a Faculty of Economics and Business, Universitat Oberta de Catalunya, Av. Tibidabo, 39-43, 08035 Barcelona, Spain

^b Centre for Air Transport Management, Cranfield University, MK43 0TR Bedfordshire, United Kingdom

^c Management Science and Business Economics Group, University of Edinburgh Business School, EH8 9JS Edinburgh, United Kingdom

^d IESE Business School, Universidad de Navarra, Av. Pearson, 21, 08034 Barcelona, Spain

1. Introduction

Along with other sectors of the economy, air traffic is vulnerable to external factors, such as oil crises, natural disasters, armed conflicts, terrorist attacks, economic recessions and disease outbreaks. These outside influences seem to have a more severe and more rapid impact on air traffic numbers as sudden increases in flight cancellations, aircraft groundings, travel bans and border closures are quickly felt in lower load factors and yields for airlines, while airports lose non-aeronautical revenues (Voltes-Dorta and Pagliari, 2012). Before Covid-19, the most important disease outbreak in terms of impact on air traffic was SARS in 2003. According to IATA (IATA, 2020a), in May 2003, at the height of the SARS outbreak, monthly revenue passenger kilometres (RPKs) of Asia-Pacific airlines were 35% lower than their pre-crisis levels. Covid-19 has gone well beyond these levels and is currently taking the aviation industry into uncharted territory. As of 24 March 2020, 98% of global passenger revenues were accounted for by air transport markets with severe restrictions (i.e., quarantine for arriving passengers, partial travel bans, and border closures), many airlines have been brought to a complete stop and, to make matters worse, the provisionally-observed recovery pattern for Covid-19 is turning out to be slower than the short-sharp V-shaped pattern observed in 2003. (Fig. 1).

The different response is mainly due to the fact that the Covid-19 crisis has quickly spread globally. Different international industry organisations have tried to come up with forecasts of its impact. Airports Council International (ACI) predicted that Covid-19 can wipe out two-fifths of passenger traffic and half of airport revenues in 2020 (ACI, 2020). The International Civil Aviation Organization (ICAO) estimates that during the first half of 2020, compared to their original forecast, there will be an overall reduction of 47% to 58% of seats offered by airlines, 503 to 607 million passengers, and a potential loss of gross of operating revenues of airlines of 112 to 135 billion USD (ICAO, 2020). The International Air Transport Association (IATA) predicts a very slow growth for the second half of 2020, expressed in an overall reduction of 48% in terms of Revenue-Passenger-Kilometres (RPKs) and 55% in passenger revenues for 2020. Consultancy

firms have come up with other recovery forecasts. For example, the Boston Consulting Group defined five demand recovery scenarios, with times to recovery between 3 months and 18 months (BCG, 2020). Though aviation industry forecasts have in normal circumstances been viewed with some scepticism (De Neufville and Odoni, 2003), the speed and breadth of the impact of Covid-19 has created a new level of uncertainty concerning the future. The current paper provides a base upon which to build some more certainty into our expectations of the future of the industry.

Early aviation-themed academic contributions related to the effect of Covid-19 have focused on the links between aviation networks and global virus propagation (e.g., Wu et al., 2020; Boldog et al., 2020; Adiga et al., 2020). These approaches mirror the research done by Bowen and Laroe (2006) on the link between air transport and the spread of the SARS virus in 2003. For example, Chinazzi (2020) conclude that travel restrictions are more effective if combined with social distancing policies to curb local transmission. Nikolaou and Dimitriou (2020) identify the critical airports for controlling global infectious disease outbreaks in Europe by integrating an epidemiological model with the structure of airline networks. Others incorporated air travel data in efforts to estimate the outbreak size in a given country, for example, Tuite et al. (2020) for Italy and Zhuang et al. (2020) for Iran.

Our paper does not deal with the epidemiological/transport aspects of the current pandemic but, instead we focus on estimates of the medium- and long-term impacts of Covid-19 as seen within the aviation industry itself. We do that by discussing the results of a series of in-depth interviews with senior industry executives. These interviews were conducted during the first weeks of the crisis, as the governments all over the world started to implement widespread lockdown measures. It was a period of extreme uncertainty, hence our analysis does not deal with specific recovery scenarios. Instead, the focus is placed on identifying structural aspects of the aviation industry that will shape its medium- and long-term response to sudden changes in passenger and cargo traffic. These structural elements incorporate supply, demand, regulation and business ethics. Understanding these structural dimensions, via comments of survey respondents and though links to recent

* Corresponding author at: Faculty of Economics and Business, Universitat Oberta de Catalunya, Av. Tibidabo, 39-43, 08035 Barcelona, Spain.
E-mail address: psuau@uoc.edu (P. Suau-Sanchez).

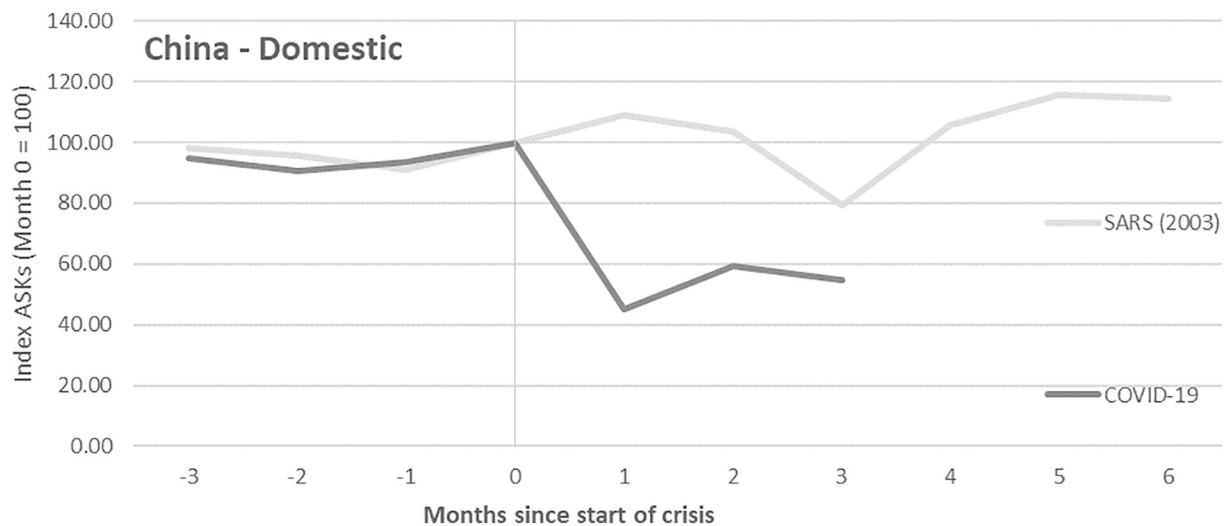


Fig. 1. SARS vs Covid-19 outbreak available seat kilometres (ASKs) evolution in the Chinese domestic market. Source: analysis based on OAG Schedules.

research, can provide more confidence in efforts to predict the future context. Since the views of senior stakeholders might change as the crisis evolves, a record of their early assessments represents a valuable reference for future analysis.

The remainder of this paper is structured as follows: in Section 2 we describe our methodology to carry out the interviews. Section 3 provides an overall picture of the major traffic impacts of Covid-19 during the first four months of 2020. Section 4 discusses the interview results in relation to the supply-side on the industry. Section 5 examines the long-term changes of in demand and passenger behaviour. Section 6 deals with regulatory aspects. Section 7 reviews the major uncertainties identified by the experts. Section 8 discusses some of the opportunities identified by our interviewees to transform the aviation industry and discusses some ethical aspects. Finally, Section 9 presents the conclusions.

2. Methodology

The empirical work is based on three main sources of information. Firstly, flight supply data was obtained from the Schedules dataset by OAG (Official Airline Guide), which provides information on a diverse number of variables for each scheduled flight, including origin and destination airport, time of departure and arrival, number of seats supplied, aircraft type, and day of operation. We include all global capacity data for the first four months of 2020 (January to April) in order to calculate year-on-year changes with respect to the equivalent dates in 2019. We acknowledge the limitations of using capacity data in this analysis, given the fact that, for different reasons, many airlines were flying empty aircraft or with very low load factors before grounding most of their fleet. Another limitation could have been the accuracy of OAG data sets given the sudden unprecedented market changes. However, this potential weakness has been recognized by the data provider, which has taken several steps to ensure that the schedules dataset is up to date.¹

Air freight data is from CLIVE Data Services and covers the first three months of 2020. CLIVE consolidates data shared by international airlines and it is widely regarded as the provider with the earliest up-to-date figures for global air freight markets. The dataset contains information on chargeable weight, air freight capacity and dynamic load factors.

Thirdly, 16 senior aviation executives were interviewed between 19 March 2020 and 17 April 2020. Although the interviews were selective,

¹ See message from the CEO of OAG on how the schedules dataset was kept updated on a daily base: <https://www.oag.com/blog/oag-covid-19-a-message-from-our-ceo-phil-callow>

we aimed for a diverse cohort (Table 1). Regarding the airline sector, we interviewed managers of a major network carrier, a large low-cost carrier, a regional airline, an airline association, a pilot union, an aviation insurance broker and an aircraft lessor. For the airport sector, we interviewed managers of a large hub airport, a medium size airport and a regional airport, as well as of an airport investing firm. Finally, we also interviewed senior leaders from other organisations, namely consultancies and a data company. We acknowledge a geographical bias, as most of the interviewees belong to European organisations. This is partially mitigated by the global perspective of the interviewees, the global reach of some of their companies, and the global scope of the subject at hand. The names are not revealed in order to encourage free expression of opinions and to ensure their anonymity (Taylor and Bogdan, 1986). Semi-structured interviews were deemed the most appropriate method as they allow the respondents to introduce new, unpredictable issues and the interviewer to follow up topics more flexibly. Semi-structured interviewing was conversation-like and, focussed on three main aspects, the long-term consequences on the supply-side, the potential long-term changes in passenger behaviour, and the possible long-term regulatory impacts.

3. Impact of Covid-19 on global traffic

One of the characteristics of the Covid-19 outbreak has been the quick geographical spread of the virus (Lai et al., 2020), with an initial manifestation in Asia and a lagged response in the rest of the world's regions (Figs. 2, 3 and 4). Most airlines tried to operate a normal schedule until they were prevented by drastic mobility restrictions. These translated into sudden drops in flight numbers from mid-March 2020, when lockdowns and border closures started to be the dominant policy response across Europe and America.² In consequence, the impact has been stronger in international markets (Fig. 2) than in domestic markets (Fig. 3). Domestic markets experienced a slower and more heterogenous reaction, since they have been the refuge of airlines to keep some level of activity, just before the widespread grounding of the fleet in late March. Interestingly, Fig. 3 shows that the partial recovery of the Asia Pacific domestic markets during March (fuelled by China's recovery), turned into a double-dip in April as other Asian countries experienced drops in domestic traffic in consonance with the global trend during the same period.

² See World Health Organization regular Coronavirus disease situation reports at: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports/>

Table 1
List of interviewees.

Airline industry	Position
Airline insurance broker	Country Director
Aircraft lessor	Vice President
Country airline association	President
European regional airline	CEO
Major European low-cost carrier	C-level
Airline pilot union	Head of union
Major European network carrier	Former VP for Cargo
Airport industry	Position
Major European hub airport	Head of strategy
Medium size European airport with 10–20 million passengers	Director, CEO
Regional European airport with 200-500 K passengers	Deputy Managing Director
Airport investor	Senior Manager
Others	Position
Large aviation services consultancy	Head of Sustainability
Business travel agency association	Country Director
Large Asian aviation consultancy	CEO
Boutique Consultancy Firm from Latin America	CEO
Data Company	Managing Director

January, a partial V-shaped recovery pattern was observed soon after. Later, freight tonnes progressively decreased from the beginning of March in Europe, North America and the Middle East.

This overview of the scale and diversity in very recent changes following the policy responses to the Covid-19 provides background for the interpretation of the perspectives of industry participants.

4. Insight from industry interviews: the supply-side

There was agreement among the interviewees that in a recovery phase there will be a trend towards consolidation in supply, especially in the European market. One of the major concerns expressed by the interviewees was related to ensuring a level playing-field after a foreseeable round of state aid to major carriers. Consolidation, generally, does not generate much concern when it is a process guided by scale and efficiency (Brueckner and Pels, 2005; Dennis, 2005). But, for many of our interviewees, possible state aid to airlines creates some serious concerns. First, state aid could extend the life of airlines that even in a market context free of Covid-19 pressures could have disappeared. Second, state support is likely to take different forms in different countries, in the absence of a common European policy on the matter. Third, a few interviewees dreaded the implications of states becoming shareholders in

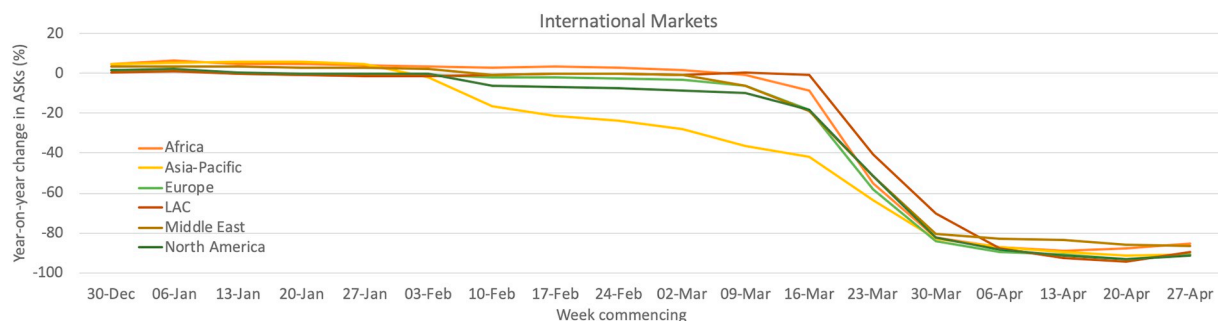


Fig. 2. Year-on-year change (%) in ASKs by region, international markets, Jan-Apr 2020 vs 2019. Source: analysis based on OAG.

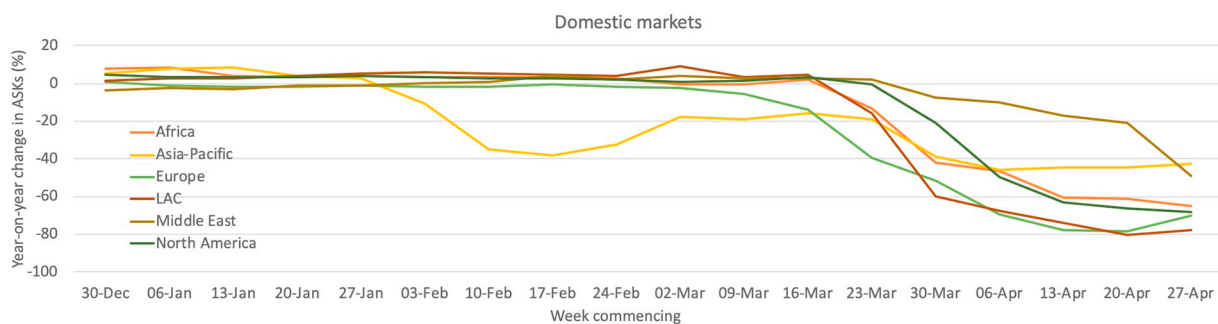


Fig. 3. Year-on-year change (%) in ASKs by region, domestic markets, Jan-Apr 2020 vs 2019. Source: analysis based on OAG.

The experience of airlines varied by type of carrier (Table 2). Full-service network carriers (FSNC) are more exposed to international traffic and most started reducing capacity at the beginning of February. On the other hand, due to their lower exposure to international traffic, low-cost carriers (LCC) reduced their supply later.³

The significance of air cargo has been vindicated by the Covid-19 crisis (Fig. 4). Shipments of food and medical supplies have been protected by governments to ensure the supply of basic necessities. Thus, even though air freight tons quickly dropped in Asia Pacific in late

airlines and so exerting influence on airline management that could take the industry back to the situation 20 or 30 years ago.

Full-service network carriers (FSNC) were seen as the major losers in the medium and long term. That opinion was supported by a number of perspectives. First, the slow recovery and the lower traffic levels expected across the industry could ease congestion levels in major European hubs and so would allow easier operation for existing (and perhaps even entry of new) low-cost carriers, so threatening some of the European fortress hubs.⁴ Increased competition in short-haul routes

³ European LCCs reduced their ASK production from mid-January to mid-February 2020, but this was related to planned capacity adjustments.

⁴ A fortress hub is the dominance of a single FSNC carrier at an airport. Whilst carriers may compete head-to-head for traffic between non-hub cities via their

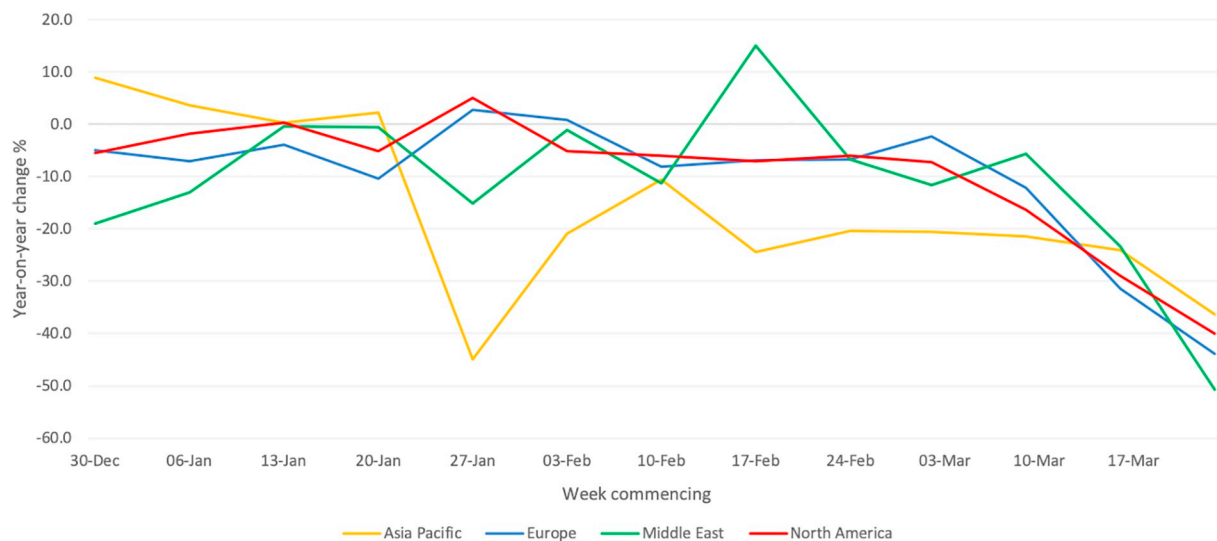


Fig. 4. Year-on-year change in air freight chargeable weight (tonnes), Q1 2020 vs Q1 2012. Source: CLIVE data services.

would potentially erode the capacity of FSNCs hub-and-spoke operations and therefore the feed into their lucrative long-haul flights. Second, given that travel bans and restrictions are set at the national level, respondents expected that international and intercontinental flights will be the last to be re-established and that process will be highly uneven across countries. Sixth-freedom hubs will be highly affected in this situation and some interviewees highlighted challenges facing British Airways, KLM and Emirates in their respective hubs at London Heathrow, Amsterdam and Dubai. The interviewees expect that FSNCs will make adjustments to capacity in the face of problems in their hub feed by downgauging their fleets, which can be done by getting rid of larger and older wide-body aircraft like the B747 (and even the A380) and utilizing narrow-body aircraft for long-haul markets or working together with regional airlines to have a feeding fleet more appropriate for thinner routes.

Regarding the latter, two interviewees predicted that regional airlines will clearly benefit from increasing their activity as hub feeders during the recovery period. This would, indeed, take the regional airline business model in Europe closer to the US model (Brueckner and Pai, 2009; Dresner et al., 2002). Regional airlines could also benefit from a potential increase of Public Service Obligations (PSOs) by governments, since this is an existing mechanism that could be applied across a larger number of routes if the recovery of demand is weak.

Concerning low-cost carriers (LCC), the general perspective of interviewees was that these airlines will focus on the larger markets and abandon the smaller ones, with a high probability that more LCCs would move operations into large hub airports. However, some respondents indicated that lower congestion and demand would prompt LCCs to reduce daily frequencies on large European city-pairs, as the high daily frequency strategy, partly used to internalise delays and cancellations,⁵ would not be relevant in the new conditions.

The changes mentioned above are expected to have a direct impact on the airport business and the hierarchy of airports. First, interviewees considered that regional airports would be the big losers of this crisis as the focus of demand early in the recovery would be on larger markets.

(footnote continued)

respective hubs, they have a local monopoly in the spoke segments from their respective hubs to other cities in the networks (Zhang, 1996; Huston and Butler, 1988).

⁵ The mechanisms to internalise congestion have been largely studied. See, for example, Bendinelli et al. (2016) and Brueckner (2002, 2005).

Second, some medium-size airports with a leisure profile would face competition from other leisure markets with competitive prices and perhaps fewer travel restrictions. In that regard, one interviewee highlighted that airline incentives would be key to recover traffic (see next section) and airports would come out of this crisis with a worst negotiating position relative to airlines. Thirdly, airports hosting an airline hub have the potential to be the strongest survivors in terms of passenger numbers, with the caveat that survival will be also accompanied by uncertainty of some changes (i.e., the potential entry of LCCs and reduced hub operations). Fourth, our interviewees questioned the future of hub-bypassing strategies designed to take advantage of the economic growth of non-hub regions using efficient long-haul airliners to directly feed the airline's hub, so avoiding congestion at European hubs (as illustrated at Barcelona, Birmingham or Hamburg, and analysed in Suau-Sanchez et al., 2016a, 2016b; Tembleque-Vilalta and Suau-Sanchez, 2016). On the one hand, there is a general agreement that the most efficient narrow-body aircraft, which are used for hub-bypassing, will indeed be useful to airlines for the recovery of long-haul traffic. On the other hand, the lower traffic levels, the potential entry of new competitors at hub airports, the late recovery of long-haul demand and the reduction of feeding traffic, all point towards an increasing focus on primary hub airports.

5. Insight from industry interviews: the demand-side and consumer behaviour

Overall, our interviewees seem to agree that demand will be highly affected, not only in the medium term, but also in the long term, initially because of weakened demand associated with lower levels of disposable income, but then compounded by changes in behaviour.

5.1. The business traveller

The interviewees expect that business travel will recover in the short term in order to sustain relationships with clients and providers. However, MICE (Meetings, Incentives, Conferencing, Exhibitions) related travel will take significantly longer to recover because many events have already been cancelled or postponed and the marketing and travel budgets of companies will be significantly reduced as economic activity slowly recovers in the coming few years. Therefore, although MICE travel may return, the size of the teams sent to events might be smaller.

Many expressed their concern for business-related long-haul travel,

Table 2
Year on year change (%) in ASKs according to airline type, Jan-Apr 2020 vs 2019.
Source: Analysis based on OAG.

Airline Type	30-Dec	06-Jan	13-Jan	20-Jan	27-Jan	03-Feb	10-Feb	17-Feb	24-Feb	02-Mar	09-Mar	16-Mar	23-Mar	30-Mar	06-Apr	13-Apr	20-Apr	27-Apr
LCC	6.8	6.3	5.1	5.2	5.5	3.1	1.9	0.7	0.0	-0.6	-3.7	-8.5	-30.3	-50.6	-61.4	-68.7	-72.3	-71.6
FSNC	2.4	3.1	3.0	1.9	1.3	-2.7	-12.7	-14.2	-13.7	-12.3	-15.3	-20.3	-44.1	-69.5	-78.9	-81.4	-82.8	-81.4

which is known to sustain FNSCs through the generation of density economies (Brueckner and Spiller, 1991; Caves et al., 1984). Some interviewees think that long-haul flights will be the last to recover due to the uneven lifting of travel bans and so uneven reconnection of countries to international travel markets.

There is also a serious concern about the long-term impact of the acquired teleworking skills during lockdown and the investments made by companies in new workplace platforms. To date our understanding of the impact of videoconferencing on business air travel is very limited. Very early work suggested it did not represent a threat to the airline industry (Denstadli, 2004), and in fact it could even have a positive relationship for business people who travel a lot (Denstadli et al., 2013). However, the extensive implementation of modern high capacity cloud applications, as part of a broadly-based digital transformation, which is associated in part with changes the work-life and health balance (Schwarzmueller et al., 2018), is likely to have a much greater impact than traditional videoconferencing. These technologies may enable companies to minimise face-to-face contact among their staff and maximise the value of virtual mobility (Faulconbridge et al., 2009). The interviewees think that, whilst not likely having a radical effect, the new digital context may indeed reduce the propensity of some of executives to fly, especially for meetings with staff members of the same company where relationships and trust already exist. Some argued that, even if the impact in the reduction of business travel were as small as 5% or 10%, that would be enough to have a serious impact on airlines, as this type of traveller generates high yields.

5.2. The leisure traveller

The general view was that the impact of Covid-19 would be less intense for the leisure passenger and that we would see a quicker recovery of demand compared to the business travellers.

Nevertheless, one of the airport representatives highlighted that the support from cities, regions and tourism authorities in form of marketing aid would be essential to help airlines restart tourism-related air services in a context of weakened demand. One of the airline executives considered that low fares by themselves would not necessarily ensure a recovery in ticket sales. Though most of the interviewees think that although leisure demand might recover earlier than business demand, the reduced disposable income associated with slow economic recovery will mean consumers will travel less. The higher price elasticity of leisure passengers (Morlotti et al., 2017) opens up the possibility that the focus of European leisure demand might shift from traditional “sun-and-beach” destinations in Southern Europe to more affordable destinations in the north of Africa or the east of the Mediterranean. Similar outcomes could be felt across the globe.

Health concerns were also considered to play a more important influence on leisure demand than business demand. Business travel is usually a necessity whereas leisure travel may involve considerations of the health risks if Covid-19 remains a risk in some destinations. A few interviewees noted the possible rise in staycations⁶ beyond 2020 and 2021.

For both business and leisure travel, the interviewees are concerned about the lack of consumer confidence when flights resume. Besides fear and health concerns, lower levels of disposable income in households and saving measures in surviving businesses will both depress air travel demand. In that regard, two of the interviewees suggested that support to airlines might not be enough to stimulate demand. This remark was made in relation to the IMF World Economic Forum preliminary report published in early April (IMF, 2020). According to

⁶ A staycation is a period in which an individual or family stays home and participates in leisure activities within driving distance of their home and does not require overnight accommodations. Alternatively, it is a holiday spent in one's home country rather than abroad.

Baldwin and Weder di Mauro (2020), to avoid a persistent weak demand, a “whatever it takes” approach might be required, including subsidies for households and workers until reaching a partial recovery. Others, like Krugman (2020), advocate for a policy of permanent stimulus. Seen in this way the fortunes of the airline industry will be shaped by political judgements made about national and international economic policy making.

6. Insights of industry interviews: regulation: relaxation or tightening?

The most immediate regulatory concern of the industry as the threat of Covid-19 unfolded was slot regulation, and during the first days airlines flew empty aircraft to make sure they kept the slots for the following season.⁷ This short-term concern was quickly resolved with a suspension of the slot rules by the EU from March 1st to October 24th, 2020. However, following the expansion and spread of the virus other regulatory aspects have become apparent.

One involves health screening at airports, which could take different forms, such as temperature checks or even quick antibody tests for Covid-19, when these can be produced at an affordable price and are reliable enough. In any case, these controls will require capital expenditure, human resources and terminal space, all financial issues for airports, so could translate into new airport fees. Others also mentioned possible restrictions for passengers of particular regions, based on health risk assessments, which would affect traffic rights.

Concerning social distancing, the concerns of the airport multiply as it involves a significant reduction of terminal capacity.⁸ Its implementation in the airliner cabin would not be feasible from a commercial point view, as load factors would be lower than 50%. The policy of some airlines of offering an empty middle seat was seen by our interviewees more as a way of selling “peace of mind” to passengers and a potential source of ancillary revenues, rather than an effective measure of social distancing.

The experts mostly agreed that the EC would not back down in relation to the EU ETS and the EU Green Deal, in view of the strong statement by the EC President in that regard (Euroactive, 2020). A few interviewees had more concrete concerns regarding sustainability, that is how CORSIA (Carbon Offsetting and Reduction Scheme for International Aviation) baseline emissions, which were calculated based on the years 2019 and 2020, would be calculated now given the massive drop in airline activity. Also, whether the start of CORSIA would be compromised in 2021 and what would happen with the progress of aviation from Phase 3 to Phase 4 of the EU ETS in 2021.⁹ One respondent highlighted that state aid, and the potential entry of states as shareholders of airlines, could be an opportunity to impose green conditions to state aid. Indeed, several weeks after the interview, the French finance minister stated that a bailout of Air France would entail the reduction of domestic flights of less than 2.5 h that have a rail alternative and do not contribute to connecting traffic (Flightglobal, 2020).

A few interviewees also saw the pressure on airlines could justify a relaxation in airline foreign ownership regulations, which would allow surviving airlines to operate in different jurisdictions. That of course runs counter to what might flow from state intervention. In spite of that, the interviewees felt the long-term trend towards deregulation should continue as it has proven

⁷ The use it or lose it rule or grandfather rights establishes that if a series of slots (≥ 5) are used in the previous equivalent season for at least 80% of the time, the incumbent carrier has the right to use those slots in the next season.

⁸ Simulations based on IATA ADRM by Flare Consulting estimate that social distancing measures in airports would be translated in an overall terminal capacity reduction of 70%.

⁹ Phase 3 (2013–2020) of the EU ETS is linked to the Kyoto agreement and the reduction of annual allowances did not apply to aviation. Phase 4 (2021–2030) is linked to the Paris agreement and the cap of aviation emissions becomes subject to the annual reductions.

beneficial to increasing international flights and to national economies.

7. The major unknowns

The first major uncertainty was the future development of air freight. On the one hand, some considered that Covid-19 would accelerate the process of greater orientation towards cargo that many airports were already going through as part of the growing importance of e-commerce. Indeed, integrated express carriers (e.g., UPS, FedEx, DHL) would be the great winners in this new set of circumstances. Elsewhere, geographic re-orientation of supply chains, perhaps involving increased regionalisation, might see a shift away from air to road deliveries in some markets, except in a few key sectors like pharma, technology and perishables.

The other big question mark for experts was future ticket prices. Some argued that prices would have to increase to cover the new costs of an industry, that might be too large, particularly in the segment of business travel. On the contrary, excess supply could lead to lower ticket prices and that in any case the industry would need to do significant capacity adjustments to match demand levels, which would keep prices at a level similar to the recent past. One interviewee mentioned that the current lower costs of aircraft leasing and of fuel (oil price plummeted during the first quarter of 2020) would certainly allow airlines to offer lower ticket prices. If those cost factors remain low, LCCs would become very aggressive in their pricing to stimulate demand. The big unknown here is whether the expected boost due to lower costs will outweigh the dampening of demand due to lower levels of disposable income and fear of flying (IATA, 2020b).

8. Opportunities to transform elements of the aviation industry

Some interviewees highlighted the opportunities of this crisis to re-think some ethical aspects of the aviation industry.

Two experts asserted that the industry had probably facilitated some excesses and that the COVID-19 experience could lead to a realignment in activity that is more consistent with broader social objectives. One example is the role that air cargo has played in facilitating the consumption of exotic fruit and vegetables in high income countries all year round. This concern has attracted research attention in the past (Vega, 2008; Kallis, 2011). The forced re-structure of long-haul air services may change costs and so bring the planning of air freight services more into line with current thinking on sustainable economic development.

The second ethical aspect that was highlighted was the application of the EU regulation 261/2004 on air passenger rights. As a result of the mass cancellations, airlines offered vouchers for subsequent use as a way to protect their financial situation and avoid imminent bankruptcy. In light of the situation, on March 18th, 2020, the EC published a communication (EC, 2020) providing guidelines on the interpretation of the EU passenger rights regulations in the context of Covid-19. In case of cancellations, the transport provider must reimburse or re-route the passengers. If passengers themselves decided to cancel their journeys, reimbursement of the ticket depends on its type, and companies had to offer vouchers for subsequent use. However, the guidelines and regulations were not followed and in April, twelve governments¹⁰ urged the EC to suspend rules forcing airlines to offer full refunds instead of vouchers for future travel (Euronews, 2020). The interviewees expressed very different views on this issue, but those believing that regulations had to be upheld considered that the short-term survival needs of the industry had been placed above ethical business principles, although short-term support may be wasteful or even detrimental in terms of reputation for the really important task of long-term reconstruction of the industry. Airline reputations are difficult to gain and easy to lose, and need a long-term sustainability strategy based on

¹⁰ The twelve governments were: Belgium, Bulgaria, Cyprus, Czech Republic, Estonia, France, Germany Greece, Ireland, Latvia, Malta, Netherlands, Poland and Portugal, Romania and Spain.

stakeholder engagement (Amaeshi and Crane, 2006).

9. Conclusions

This paper presents a first approach to understanding the industry perspective on the impact of Covid-19 on commercial aviation. We have provided a portrait of the shock by looking into airline seat capacity and air freight demand for the first four months of 2020. The data provided context for an assessment of the long-term impact of Covid-19, according to the views of a sample of senior aviation executives.

The interviews have revealed some serious long-term consequences for the air transport supply. First, the interviewees considered the crisis would lead to consolidation and a significantly smaller industry. Second, they were concerned about the possible differences in terms of state aid and how that could affect the level playing field in a post-Covid-19 aviation market. Third, FSNCs were seen as the major losers since the recovery in international markets will be slower and they may face new competition with the potential entry of new airlines in their home hub markets. Airlines that have built their hubs mainly on sixth-freedom traffic, like British Airways, KLM, Emirates and Singapore Airlines, were identified as the weakest in terms of recovery potential. Fourth, regional airlines were identified as possible short-term winners during the recovery period, as they could potentially help FSNCs adjusting their feeding capacity, and also benefit from a possible increase in the use of PSOs. Fifth, LCCs are expected to concentrate in primary markets with the possible entry in hub airports, and a general reduction in frequencies at the route level. Seventh, in terms of winning and losing airports, regional and secondary airports would be the big losers as capacity would be freed up in larger markets, which would attract airlines. On the contrary, large airports hosting a hub could reinforce their leadership by attracting new airlines, which would secure traffic volumes but also bring about a more competitive and aggressive marketplace.

The differentiation between domestic and international market, which has been highlighted in many online seminars organised during the Covid-19 crisis, did not come up that clearly in the interviews, probably due to their European perspective. What came across, however, is that most European countries are too small to sustain airlines. The focus was more on the difference between LCC and FSNC, the latter being more exposed to more distant countries with very different situations and therefore facing a more patchy and slower recovery.

Experts were concerned about the recovery of business travel, mainly due to the cancellation of MICE events, and the uneven lift of travel bans and reconnection of countries to global trade networks. Teleworking was seen as serious threat to demand, as the current context of digital transformation and cloud applications offer better solutions for teleworking than the traditional videoconference. On the other hand, the recuperation of the leisure passenger segment was expected to be quicker, but reduced disposable incomes would curtail propensity to fly and require significant support, probably in terms of route subsidies and marketing aid, but also with direct demand stimulus. Finally, fear and health concerns were identified as major issues for the leisure traveller, more so than for the business traveller.

Regarding regulatory aspects, all interviews considered that new health screening controls would be imposed at airports, translating in higher costs for airports and passengers. But they did not consider social distancing as a viable commercial option for airlines. Environmental regulation was not expected to be relaxed and some saw state aid as an opportunity to impose more environmental restrictions on airline operations.

On a positive note, the interviewees identified a couple of areas in which the industry could be transformed towards a more ethical business. Firstly, in relation to supply chains and more responsible consumption and secondly by improving the long-term reputation of the industry through respect for customer rights as stated in the regulations.

The results of this paper represent an early assessment that can help the aviation industry and other related industries like tourism in the preparation for the recovery period. Future research could focus on

many areas. First, reassessing industry expert views during the recovery period. Second, analysing in detail the changes in supply: details on airlines, aircraft and routes. This could include identifying the structural changes in airline networks or the effects of consolidation processes. Third, studying in detail the behaviour of potential passengers with regards to teleworking and digital transition in their workplace. Fourth, examining the unsolved ethical and reputational issues of the industry, which are needed to evolve within the business models that acknowledge sustainable approaches in the long-term.

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