The Aviation Value Crisis: Sustainability, Mobility and Economic Growth

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Aviation, considered a strategically important sector of the European economy, is facing a value crisis. The parallel pursuit of diverse policy objectives such as mobility, economic growth and addressing climate change has arguably resulted in a regulatory standstill. Will one impact of the Covid-19 crisis be the emergence of a new perspective which mandates better policy-making and regulation?

Context

The European Commission considers aviation both a key sector of the European economy and an important asset for the society, securing the benefits of mobility and global connectivity for EU citizens. Aviation, at the same time, is responsible for considerable negative externalities, that include noise, CO_2 emissions and non-CO_2 impacts, such as cloud effects. Aviation is one of the most polluting transport modes and its environmental impact had been steadily increasing before the Covid-19 outbreak. Changes to the resources that fuel planes and especially to the way the aviation industry functions could have a significant impact on climate change. Its CO_2 impact is usually estimated to be around 3%. While taking the non-CO_2 impact and growing traffic levels also into account may result in a much higher percentage of 5-10%, there are scientific uncertainties involved. According to the European Commission, flying is responsible for 3% of the EU's direct emissions and 2% of global output. The International Civil Aviation Organization (ICAO) forecasts that, in the absence of additional measures by 2050, these percentages could grow by over 300%

While there are regulatory efforts both at the EU and the global level to address the environmental impact of aviation, so far these schemes have not delivered tangible results. Only intra-EU flights are included in the EU's Emissions Trading Scheme (ETS) and airlines still receive considerable free allowances under the scheme. The International Civil Aviation Organization's (ICAO) global Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) is in in its infancy, and its potential benefits are widely disputed by promoters of a more environmentally responsible transport system. The non-CO_2 effects of aviation are usually overlooked by policy-makers; they are neither included in the ETS, nor in CORSIA. Furthermore, kerosene is exempt from taxation and there is only scant introduction of other taxes on air travel.

Besides the core values of economic growth, mobility, connectivity and the protection of the environment, aviation-related policies are also influenced by industrial lobbies and other interest groups such as environmentalists. The latter has been less successful in shaping policies and regulation, since aviation's contribution to the economy and the mobility of EU citizens have so far taken precedence over the protection of the environment.

Meanwhile, on the 28th November 2019, the European Parliament (EP) passed a resolution on the climate and environment emergency. The EP had taken into consideration 'the latest and most comprehensive scientific evidence on the damaging effects of climate change' provided in the Intergovernmental Panel on Climate Change's (IPCC) special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, as well as 'the massive threat of loss of biodiversity'. On the 11th December 2019 the European Commission published its ambitious program, The European Green Deal. The Commission, also referring to the IPCC special report, acknowledged its responsibility and confirmed its 'commitment to tackling climate and environmental-related challenges' using dramatic language rarely encountered in policy documents. The communication defines the objective of achieving climate neutrality by 2050. The proposed measures include the revision of the Single European Sky initiative and taxing aviation fuels.

This already difficult and complex situation has been further complicated by the outbreak of the Covid-19 epidemic. The epidemic has caused an unprecedented, complete disruption of the whole aviation industry. The consequences did not stop at airlines; airports, air navigation service providers and manufacturers were all affected by the sudden halt of air traffic. Furthermore, the policy-focus was shifted from capacity and Green Deal objectives to financing air carriers and cutting costs of infrastructure providers. In March 2020 air traffic has fallen by ap-

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proximately 90% compared to 2019 levels. Interestingly, what the virus has achieved in terms of reducing aviation's harmful impact on the environment in a matter of weeks, far exceeds the achievements of the past decades of the environmentalist movement and the European Commission combined.

The policy problem before the epidemic

Today, the aviation market is operating in a sub-optimal manner. Markets are legal constructs that operate within the context of the legal framework designed by the sovereign. In case markets function in a suboptimal manner, regulatory intervention may be needed. This is the case in particular, where preventive action needs to be taken in order to avoid potentially catastrophic outcomes, such as the consequences of climate change. If this is so obvious, why has it not happened?

Concurring policy objectives

While liberalisation of the aviation sector has opened competitive markets, facilitated the evolution of new business models such as low cost airlines and an unprecedented degree of mobility for EU citizens through affordable airfares, the environmental impact of aviation is still considerable and on the rise. Beside a growing demand for affordable air travel, at least part of the reason for this is the fact that the regulation of aviation is driven by concurring policy objectives.

According to the European Commission's 'An Aviation Strategy for Europe'[1], 'aviation is a strong driver of economic growth, jobs, trade and mobility for the EU. It plays a crucial role in the EU economy (…) The EU aviation sector directly employs between 1.41 million and 22 million people and overall, supports between 4.83 million and to 5.54 million jobs. The direct contribution of aviation to EU GDP is €110 billion, while the overall impact, including tourism, is as large as €510 billion through the multiplier effect.' The same aviation strategy underlines the need to 'strengthen' the sustainability of the EU air transport value network. One of the Commission's priorities is to reduce capacity constraints to accommodate more flights and enable the growth of the sector. At the same time, a wish is expressed to minimise aviation's environmental footprint and to achieve carbon neutral growth from 2020. There is also mention of powerful regulatory tools such as the EU ETS and green technologies that will make this possible. The Single European Sky policy initiative[2] and regulatory package defines similar competing objectives for air traffic management (ATM).

The main problem is that these policy objectives are sometimes directly contradicting each other and the achievement of one may only be possible to the detriment of the other. For example, 2018 and 2019 were the years of the 'capacity crisis' in the aviation sector. There was more traffic than what the infrastructure could handle. In order to accommodate more flights, ATM measures were introduced which resulted in a deteriorating environmental performance. In fact, emissions were increasing faster than traffic. Clearly, this trade-off has been the result of a value choice. The need to accommodate traffic growth (more mobility and economic growth) took precedence over the objective of protecting the environment.

As it was acknowledged even by industry stakeholders at the Single European Sky High Level Conference on the 11th September 2019, we do not currently possess the technological solutions that would make it possible to maintain or increase 2019 levels of aviation traffic and, at the same time, reduce the environmental impact of aviation.

Regulatory passivity in delivering public goods

While public goods such as clean air and a habitable Earth are highly desirable, they will usually not be delivered by markets alone. Business entities operating on markets are not responsible for the provision of public goods. On the other hand, the EU and its member states do have such responsibilities.

Today, the aviation sector is enjoying numerous privileges that help to keep airfares low and allow carriers to expand their business operations. Meanwhile, it is the broader society that bears the environmental cost of increased air mobility and aviation-related economic growth. Current policy and regulatory initiatives such as the ETS, CORSIA or the odd aviation tax cannot resolve this problem. Neither can promises of unmaterialised green technologies and planting future forests. Such plans and promises are often characterised as unrealistic and even misleading. Michael J. Sandel proposes that carbon offsets can easily be understood as conferring a moral licence to pollute[3]. Julian Allwood, professor of engineering and the environment at Cambridge University suggests that dreaming of electric planes and planting trees will not save our planet[4]. Neither will regulatory passivity in respect of the delivery of the public goods related to the protection of the climate and the environment.

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[1] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, An Aviation Strategy for Europe, Brussels, 7.12.2015 COM(2015) 598 final

[2] https://ec.europa.eu/transport/modes/air/ses_en

[3] Michael J. Sandel: What Money can't Buy: The Moral Limits of Markets, Farrar, Straus and Giroux; New York, April 24, 2012, p. 78.

[4] Julian Allwood, The only way to hit net zero by 2050 is to stop flying, The Economist, 7 February 2020

Simplified narratives

As Maurice E. Stucke and Ariel Ezrachi observe, 'we often are attracted to simplified narratives', which are sometimes capable of driving policy and regulation[5]. Despite the complexity of the situation surrounding the aviation sector, its regulation does seem to be based on such simplified narratives. 'Aviation is the driver of economic growth.' 'Biofuels, new technologies and offsetting will make aviation a clean transport mode.' As Ezrachi and Stucke point out, such narratives are easy to understand, govern and follow, so society is willing to ignore their limitations. They can also replace an unpleasant reality with an agreeable rhetoric. And when they are backed by powerful industrial lobbies, perhaps the regulator is also less inclined to closely investigate these easy remedies which help to preserve the status quo without imposing the need to introduce complex structural changes and develop innovative policies and regulation.

Complexity

Finally, complexity itself is increasingly becoming a problem. It is obviously not easy to take the European aviation sector and suddenly reshape it into an environmentally clean business, still paying dividends, contributing to both mobility and economic growth. There are a range of diverging interests that need to be considered, including those of the member states, employees and influential industry stakeholders, some of which may be considered too big to fail. Furthermore, aviation cannot be reshaped in isolation. Reforming the industry needs to happen in a manner that is making sense in the wider context of the economy that is supposed to become carbon neutral by 2050. This requires an approach that is much broader than sectoral boundaries.

Policy, regulation and the Covid-19 epidemic

Climate change and the COVID-19 epidemic are both considered global threats. One common feature of these potentially catastrophic phenomena is that the aviation industry is a contributing factor to both. Still, the regulatory response to these threats has so far been very different. While climate change has triggered mild regulatory changes with an extremely limited effect on the operation of the aviation sector, the COVID-19 crisis has resulted in prompt and radical interventions. While mobility has never been restricted for the sake of a more sustainable future, it was halted in an attempt to control the further spread of the pandemic.

The epidemic has created the sense of urgency that climate change never did. Perhaps it was the very immediate threat of the collapse of health systems and whole sectors of the economy that has prompted state intervention. Clearly, the COVID-19 epidemic has shown that in the face of certain threats, mobility and economic growth may become relatively less important. People are ready to travel less for leisure and it is now recognised that video conferencing can significantly reduce the need for business travel.

While many consider the Covid-19 epidemic an opportunity to introduce structural changes, these ideas do not seem to materialise in the transport sector. Despite several member states' initiatives to make state aid to airlines conditional on accepting environmentally-oriented restraints such as reducing short-haul flights, increased multimodality and tax contributions, the European Commission does not seem to follow this approach. In fact, both the Commission and several member states seem to be inclined to preserve the pre-epidemic status quo. Adina Valean, EU Commissioner for transport has declared that 'raising these [green] conditions now is not necessarily something I would support'[6]. Indeed, to many, recovery from the Covid-19 crisis means re-establishing the pre-Covid-19 status quo, even to the detriment of Green Deal objectives.

There are also instances of industry stakeholders cancelling green technology projects under the strain of the Covid-19 crisis[7].

A few legal considerations

All of this has a legal aspect. Beside acknowledging the general responsibility of the sovereign to deliver public goods, perhaps it also makes sense to evoke a few provisions of the Treaty on the Functioning of the European Union for the sake of orientation.

According to Article 119, Union policy on the environment shall contribute to the pursuit of preserving, protecting and improving the quality of the environment, protecting human health, prudent and rational utilisation of natural resources, and promoting measures at the international level to deal with regional or worldwide environmental problems, and in particular, combating climate change. Furthermore, Union policy on the environment shall aim at a high level of protection, it shall be based on the precautionary principle and on the principles that preventive action should be taken, and that the polluter should pay.

[5] Maurice E. Stucke and Ariel Ezrachi: Competition Overdose, Harper Collins Publishers, New York NY, 2 April 2020, p. 126
[6] https://www.euractiv.com/section/aviation/news/austrian-airlines-bailout-to-be-linked-to-climate-targets/
[7] https://www.flightglobal.com/air-transport/airbus-and-rolls-royce-cancel-e-fan-x-hybrid-electric-rj100-experiment/138067.article

In the case that these provisions of the Treaty are to be taken seriously, there is a firm legal basis to drive value choices in European transport policy. While today none of the principles enshrined in Article 119 (the precautionary principle, the polluter pays principle and the principle of preventive action) seem to be observed by the regulation of the aviation sector, it is perhaps not too late to consider this possibility.

The way forward

A sense of urgency

Rising traffic levels in 2018 caused increasing delays and capacity problems in the European airspace. This situation was narrated at the policy level as the 'capacity crisis'. A sense of urgency was swiftly achieved and measures have been introduced to increase available capacity. An even more serious sense of urgency has prevailed in the case of the Covid-19 crisis. Unlike in the cases of the so-called "capacity crisis" and the epidemic, there has been no real sense of urgency with respect to climate change, despite the European Green Deal and the EP declaration of the climate emergency. This situation needs to be rectified by the main policy stakeholders such as DG MOVE and EUROCONTROL[8], if the Green Deal is to be taken seriously. It needs to be acknowledged that the aviation system in its present form is unsustainable and that current traffic levels cannot be sustained.

Furthermore, the Covid-19 crisis should be considered an opportunity to introduce structural changes to the aviation sector. Efforts to restore the pre-epidemic status quo through state aid need to be abandoned. State aid should instead effectively support Green Deal objectives.

Information

It is a prerequisite to any meaningful change in policies and regulation to have a clear view of the situation at hand. Simple facts - such as more traffic means more emissions - need to be acknowledged. Furthermore, at present, the actual impact of aviation on climate change is still not quantified. The non-CO_2 impacts are routinely overlooked, for instance[9]. There is a need for a reliable, transparent fact-base and risk assessment. Obscure promises of green technologies and offsetting by planting forests in the uncertain future should be replaced by genuine measures based on empirical evidence and leading to tangible, measurable results.

The law

Article 119 of the Treaty on the Functioning of the European Union should be treated as a firm basis for policy-making and regulation aimed at the 'greening' of the aviation sector. The precautionary principle, the polluter pays principle and the principle of preventive action should be observed. It needs to be acknowledged that the sovereign has a duty to act on the basis of the Treaty and that regulatory inaction may result in serious consequences.

Value choices

Today, pro-climate efforts are often characterised by industry lobbies as threats to the economy and mobility. Where policy objectives or underlying values collide, value choices need to be made. Values such as short term economic growth, increased mobility and long term sustainability will need to be balanced and prioritised.

Policies and regulation

Policies and regulation need to be designed and enforced with a view to Green Deal objectives. Complexities and the difficulty of developing such schemes do not justify sidestepping these objectives.

A realistic carbon-neutral transformation is only possible through robust and prompt regulatory intervention. There is a need to include the costs of aviation's environmental impact in airfares. Bans of short-haul flights should be considered. Aviation fuels should be taxed and there is an urgent need to introduce environmental aviation taxes. The use of airspace should be limited. Emission thresholds may need to be introduced. The limited number of available flight routes may need to be auctioned. Intermodality and multimodal solutions need to be pursued.

Conclusion

For the past few years, aviation has been operating in crisis mode. During the 'capacity crisis' demand for airspace and ATM capacity has often exceeded supply. During the Covid-19 crisis, that excessive demand has fallen by 90%. All the while, no tangible results have been delivered in addressing the climate emergency. In that respect, the real sense of urgency still seems to be lacking, despite the

[8] The European Organisation for the Safety of Air Navigation, commonly known as EUROCONTROL, is an international organisation working to achieve safe and seamless air traffic management across Europe. It carries out the management of the European ATM network on behalf of the EU. Its mandate includes minimising, where this is feasible, inter alia, in operational, technical and economic terms, any adverse environmental impact.[6] https://www.euractiv.com/section/aviation/news/austrian-airlines-bailout-to-be-linked-to-climate-targets/

[9] Answering a question in the European Parliament, executive vice-president Timmermans has stated in February 2020 that the Commission services have mandated the European Aviation Safety Agency (EASA) to conduct a study addressing the latest scientific developments related to non-CO2 aviation emissions resulting in climate impacts. Due to the scientific complexity of the issues at stake, the fact that new findings are still expected, and the limited pool of experts specialised in this field, the Commission expects to present the analysis in the second quarter of 2020.

European Green Deal and the declaration of the climate emergency by the European Parliament. Should it remain like this? If the Covid-19 crisis is causing the Green Deal objectives to be put on hold, what is to be expected if and when the pre-epidemic status quo is restored?

This paper has attempted to provide a legal basis and a few ideas for moving forward along the propositions of Ms. Ursula von der Leyen's European Green Deal. If there is leadership at the EU level and if undisputed priorities and concepts are based on the right legal basis and clear information, innovative policies may be developed to meet the challenges we are facing. The situation need not remain as it is today.