International Transport Forum

Liberalisation of Air Transport

Summary: Policy Insights and Recommendations

Research Report

OECD

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INTERNATIONAL TRANSPORT FORUM

The International Transport Forum at the OECD is an intergovernmental organisation with 54 member countries. It acts as a strategic think tank with the objective of helping shape the transport policy agenda on a global level and ensuring that it contributes to economic growth, environmental protection, social inclusion and the preservation of human life and well-being. The International Transport Forum organises an Annual Summit of ministers along with leading representatives from industry, civil society and academia.

The International Transport Forum was created under a Declaration issued by the Council of Ministers of the ECMT (European Conference of Ministers of Transport) at its Ministerial Session in May 2006 under the legal authority of the Protocol of the ECMT, signed in Brussels on 17 October 1953, and legal instruments of the OECD.

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Introduction

This paper provides a summary of issues raised in the International Transport Forum's upcoming report on Liberalisation of Air Transport. It is intended to serve as a background document for ministers and their delegations at the International Transport Forum's Annual Summit in Leipzig in May 2015.

The economic regulation of air services predates the first commercial flight by a year and reflects a realisation by Governments that some economic regulation was necessary to provide a framework for this otherwise highly competitive industry. Over the decades, thinking on the economic regulation required has evolved. Initially highly regulated, the industry has seen evolutionary and sometimes transformative change as governments have progressively removed themselves from the role of supply manager.

Today, we see two main tracks for aviation liberalisation. First, with regard to international traffic rights, most major economies and leading emerging countries have liberalised their own domestic markets and markets shared with many of their key trading partners to a large degree. Bilateral air services agreements (ASA) ting full rights on 3rd, 4th and 5th freedoms[1], open code-sharing opportunities and liberal cargo and charter regimes (generally known as open skies agreements[2] or OSA) are often the desired goal, with individual States taking into account what each believe to be the right balance between the needs of travellers, shippers, airlines and airports. Liberalisation has led to important gains in consumer welfare. In major emerging economies and the international markets in which they participate, liberalisation has begun but is far from complete and there remains a large potential to unlock consumer benefits. On the other track, concerning airline ownership and control, national ownership requirements have been relaxed to facilitate access to foreign capital in some markets, with control exercised through standard local business regulations, whilst in other markets legislatures have ruled out reform. While this paper focuses on air carriers, it should be noted that air transport liberalisation also entails liberalisation of airports, air navigation services and all stakeholders involved in the aviation value chain.

The regulatory challenge for aviation is that it is a globally connected industry, subject to an integrated, international regulatory framework for safety and interoperability but also subject to a significantly more heterogeneous series of economic regulatory frameworks reflecting national priorities and bilateral agreements between individual States. For example, whilst the operational regulations for flying are highly uniform across the globe, sales and marketing for international flights is subject to a patchwork of different regulations that can supress market entry. Similarly, local economic regimes that provide opportunities for bankruptcy State ownership or subsidy can reduce exit of incumbent airlines and restrictions on foreign ownership of nationally registered airlines limits access to international capital markets. All this limits innovation, investment and expansion in aviation markets. The object of liberalisation is to remove these limits to benefit users and increase consumer welfare.

The challenge for further deregulation is to unlock consumer gains through fair competition. This requires legal frameworks that open markets for competition but provide safeguards against unfair competition. Competition authorities effectively monitor market concentration and predatory pricing, but

1. See Annex for definition of these terms.

2. The United States Department of Transportation (US DOT) has defined an open-skies agreement to include several additional elements. See, Order DOT-OST-1992-8-13.

the issue of subsidies, or State aid, remains problematic in aviation. There are no broadly accepted definitions as to what constitutes acceptable or non-acceptable State aid in the air services industry. So long as international aviation is not integrated into trade regulated by the World Trade Organisation this will require agreements either on a bilateral basis, or, ideally, a global framework, probably under the auspices of ICAO on what forms of subsidy are acceptable and which are not. This framework would require transparent and audited financial reporting that meets international standards for carriers. It would also require an enforcement mechanism to address violations, either on a route basis or network basis, depending on the nature of the subsidies, and that would not translate into limiting market access, the most damaging outcome for tourism and trade.

Regulation and deregulation of commercial aviation

Much of the economic regulatory framework in which aviation operates today has its origins in the US government intervention to promote the development of airmail service in a nascent industry in the 1920s and the need to ensure reliable access to sovereign airspace for air passenger services at the close of the Second World War. Whilst providing a basis for development of international air services, the regulation developed on this basis restricted competition, distorting markets, limiting efficiency, foregoing growth and curtailing consumer welfare, but it imposed a strict order under which some airlines were able to grow.

The United States began deregulating its inter-state market in 1978 after a significant gap had emerged between prices on similar US intra-state and inter-state routes. High prices meant little incentive for efficiency and saw planes flying half empty. The result of deregulation has been improved efficiency through reorganisation and innovation through new entry, with new business models. This saw a marked and sustained fall in prices, with great differentiation of prices and services offered and rapid growth in passengers and freight carried. This was accompanied by rapid growth in overall employment in the sector. In the last decade, following the post-9/11 bankruptcy of the six large US network carriers, the US industry experienced a degree of unprecedented consolidation which has led to the emergence of three major carriers, American Airlines, Delta Airlines and United Airlines, each anchoring one global alliance as well as establishing new, less labour-friendly, collective agreements. With fewer competitors, a healthy economy, strict and disciplined yield management, labour peace and now significantly lower oil prices, these carriers have been able to limit excess capacity on the domestic market and return to profitability.

Deregulation spread internationally with the US pursuing open skies agreements with its trading partners and has accelerated in the last two decades, notably with the establishment of the first fully free international market in the European Union in 1997, which was predicated upon full regulatory convergence. This replaced restrictions on the ownership of airlines (nationality clauses) with the right to register a European airline anywhere in the European Union and for a European registered airline to fly any route in the European Union. This led to rapid expansion of intra-EU point to point carriers, numerous route entries and exits and significant cost pressures on legacy network carriers that ultimately to significant consolidation articulated around the three large carrier groups, IAG, Lufthansa and Air France-KLM. A decade later, acting on behalf of its Member States, the European Commission concluded EU-US (2007 and expanded in 2010) and EU-Canada air services agreements (2009) that have liberalised the North Atlantic market. Both of these agreements are clearly open skies according to the previous definition but compared to the EU Single Market, they include some restrictions, including on cabotage, 7th freedom passenger flights and ownership and control requirements.

Deregulation is in preparation in a number of markets, notably operation of the ASEAN Single Aviation Market planned for 2015 and negotiations towards comprehensive air service agreements have been completed between the EU and countries including Brazil, currently awaiting ratification, Georgia (2010), Moldova (2012) and Israel (2013). In 2013, at the 38th session of ICAO's General Assembly, the ICAO Council was tasked to develop and adopt a long-term vision for international air transport liberalisation, including examination of an international agreement by which States could liberalise market access. Regarding cargo in particular, the Council has been mandated to develop a specific international agreement to facilitate further liberalisation of air cargo services.

The way in which China decides to develop international air service agreements will be particularly significant as North East Asia is the market with the largest potential for growth in the coming decades. The rate of this growth will be determined to a large extent by the pace of liberalisation and the success in finding enough skilled labour to sustain it whilst ensuring the highest levels of safety. China's gradual approach consists of granting traffic rights commensurate to estimated market size rather than full outright liberalisation. It has also adopted an airline designation policy that has enabled its three main carriers, Air China, China Eastern and China Southern, to establish three fortress hubs in Beijing, Shanghai and Guangzhou respectively and from where they operate most of their medium and long haul international flights.

The momentum that liberalisation has gained reflects the geopolitical changes and market developments that have occurred since the Chicago Convention was agreed to. Technological progress, with new planes able to fly longer distances more efficiently, has been important and innovation in airline business models has transformed some markets. Regional economic integration is becoming increasingly important. At the same time, the creation of single markets, most notably, the single European market has been predicated on the concept of ensuring a level playing field for competition – a concept still in the process of being defined in relation to aviation. Regulatory convergence in relation to competition is one of the pillars of the EU external aviation policy and the concept has successfully been transposed by the EU and its Member States in all comprehensive air transport agreements negotiated so far. However, regulatory convergence on a global level remains in its infancy. Convergence measures developed unilaterally within the EU to ensure a level playing field have led to some distortion when non-EU carriers, who are not subject to them, compete against EU carriers that are. Even within the EU, differences in social and labour laws have enabled carriers, especially those operating point to point, to leverage these differences to tilt the playing field in their favour.

Air traffic rights

The first agreement on air transport was signed in 1913 between France and Germany and codified a framework which constitutes the foundation of modern air transport agreements. The agreement was an exchange of traffic rights, mutual recognition of licencing documents for aircraft and flight crews and the affirmation that countries had sovereignty over their air space.

In 1944 the Chicago Convention laid out the cornerstone of aviation law and established the International Civil Aviation Organisation (ICAO), the main international body governing international civil aviation. The Convention did not stipulate any particular form of international service structure but rather reaffirmed national sovereignty over airspace and an institutional framework within which nations could essentially exchange traffic rights, commonly referred to as 'freedoms of the air' (See Appendix). Market access rights are usually granted in exchange of similar rights and may be limited by a State as a

way to restore a perceived balance in the exchange of rights. The initial underlying aim of these exchanges of traffic rights was to gain reciprocal access to each other's market and enable carriers from each country to obtain an equivalent share of traffic; however, the Convention's preamble clearly states equality of opportunity as one of its guiding principles, rather than equality of outcome. A particularity of international aviation not found in many other industries is the Chicago Convention's Article 6, which explicitly forbids all international scheduled services except with the special permission of the State where the flight overflies or flies to. These special permissions referred to in Article 6 became traffic rights traded by States, with the character of national property or national benefits that can be traded amongst nations as opposed to a private property, which is how demand for goods and services is perceived in most other industries. In that sense, aviation is treated as special even though there is no economic rationale as to why this should be. The high risk nature of aviation certainly requires a very robust safety oversight regime, but the existence of such a regime does not require altering the fundamental economics of this service industry. Other strategic industries, such as mining, oil extraction, telecommunications, banking and insurance have all experienced similar restrictions in the past; however those have gradually receded in the last decades. The combination of national property rights, the imperative of ensuring high standards of safety and security, the wider economic benefits that flow from aviation and the need for connectivity between nations has led national governments to treat aviation in a very different way than most other service industries, with some governments even considering it as part of their national infrastructure, accepting the industry to be operated unprofitably in exchange for the wider economic benefits it provides.

Following agreement of the Chicago Convention, international aviation was governed by relatively unrestricted air service agreements, adopting the model of the US-UK air services agreement known as Bermuda I (1946). Gradually, air service agreements started becoming more restrictive, culminating in the Bermuda II Agreement (1976). Under this agreement, the UK secured restrictions on trans-Atlantic traffic to protect its airlines from increasing competition from US airlines expected to emerge from reform of the US domestic market. These types of agreements would set out the capacity, frequency and routes that designated carriers from each country were allowed to serve, in effect giving governments the responsibility of setting the parameters of commercial aviation capacity.

Deregulation of the U.S. air freight market (1977) followed by the U.S. passenger market (1978) also sowed the seed for liberalisation internationally over the longer term. It transformed the U.S. airline network, moving from a railway-inspired point-to-point pattern of services to the hub and spoke model widely found in contemporary commercial aviation. Liberalisation of aviation markets began to spread internationally with an open skies agreement between the US and the Netherlands (1992), facilitating a strong alliance between Northwest Airlines and KLM which laid the eventual blueprint to global airline alliances. This was followed by the Canada-US open skies agreement (1995[3]/2006), the European Single Air Transport Market (1997), the Trans-Tasman Single Aviation Market (2002), the EU-US open skies agreement (2007 and amended in June 2010), and the ASEAN-China open skies agreement (2010). These agreements and others have resulted in large parts of the commercial aviation market able to operate with little or no traffic restrictions.

The exchange of traffic rights, based on an expected balance of benefits and costs, created a mosaic of air services agreements (ASA), over 3 000, by some counts[4], which has led to international aviation being subject to a very complex economic regulatory framework. Despite this heavy regulatory environment, commercial aviation has been very successful in bridging large geographic distances separating people

3. The 1995 agreement did not meet the US DoT definition of open skies but was generally deemed to be one by Canada to be one. The 2006 agreement is considered by both to be an open skies agreement.

4. The WTO Air Services Agreement Projector contains over 2 200 ASAs as of 2011, representing about 70% of all ASAs that existed at the time, suggesting the actual number of ASAs in existence today to be around 3 000.

from each other and goods from the marketplace. Today's global aviation network carries annually over 3.3 billion passengers and 50 million tons of freight worth over $18 billion.

ASAs can incorporate many features covering aviation safety, security, incident investigation, immigration, control of travel documents and exemptions from national fiscal, labour and airport handling laws in order to make international aviation viable. The WTO Secretariat (WTO, 2006) identified seven features of ASAs as relevant indicators of openness for scheduled air passenger services. These are the 'freedoms of the air' or granting of rights, capacity restrictions, fare restrictions, withholding clauses[5], designation, compulsory exchange of statistics and restrictions related to cooperative arrangements, such as code sharing agreements.

Economic consequences of liberalisation

The results of deregulation have been closely studied for over a quarter of a century, providing a rich body of economic literature on the topic. Overall, liberalisation, especially when combined with the entry of low cost carriers, has driven down air fares, which has increased demand, improved connectivity and supported the growth of trade, tourism and the broader economy. Highlights from selected key studies are outlined in this section.

Deregulation in the U.S. led to sharp fare decreases and significantly better indirect connectivity as passengers from one secondary market could for the first time travel to another market through a, well-timed, coordinated connection. Initially, this meant a rash of new entries would test the market, force incumbent carriers to react and then exit the market, leading to a series of airline start-ups and closing. As the deregulated market gained in maturity, the churn of new entrants and exits diminished significantly, at least until the financial crisis of 2008 that prompted more consolidations and failures. Morrison & Winston (1990) were among the first to study the effects of the deregulation of the United States' market on fares and concluded that fares were about 30% lower than they would have been if fare-regulation was still in place. Several studies confirmed their findings and emphasized the importance of the low cost carriers (LCCs) that were able to develop with the ending of controls on entry to the market in achieving this decrease in average fares (Borenstein, 2014). Meanwhile, for air freight, U.S. domestic deregulation enabled the air express market to thrive by allowing it to organise a hub and spoke network and enabling it to charge a premium for speed at a level dictated by market conditions rather than simply charge by distance as was the case prior to deregulation. In the air express segment, it also led to industry consolidation articulated around the two large integrators, FedEx and UPS.

A similar story holds for Europe in which the creation of the Single Air Transport Market enabled low cost carriers, such as EasyJet and Ryanair to develop very rapidly, dramatically increasing connectivity and lowering air fares. It also enabled EU carriers from one country to freely operate in another, a feature that proved far more desirable for low cost carriers than full service carriers. Using a 24-year period of analysis (1990-2013) Burghouwt et al. (2014) provide an overview of the long-term supply developments in the liberalised EU air transport market with respect to airline output, market structure, yields, business models and the position of the (former) flag carriers. They find that EU air transport liberalisation has facilitated significant growth in the number of routes and frequencies offered more competition at the route level,

5. Restrictions related to foreign ownership, community of interest and foreign control.

lower fares and substantial connectivity growth as a result of the adoption of point-to-point networks. Between 1992 and 2002, the number of intra-EU flights per week nearly doubled, from about 60,000 to over 100,000. In the subsequent decade, the number of flights remained stable; while the number of intra-EU routes grew steadily, going from about 4,000 in 1992 to about 9,000 today from 2001, the number of frequencies per route has gradually declined. While connectivity and capacity experienced large increases over the last quarter century, fares and yields experienced a dramatic decline, being more than halved in real terms since the 1992. Meanwhile, save for a few notable exceptions, direct State subsidies to carriers were abolished while secondary airports used public funding to finance significant expansion and entice low cost carriers into establishing a base.

Gönenç et al. (2001) were among the first to examine the effects of bilateral air service agreements on air fares. They analysed agreements for a sample of OECD countries, including the United States, Australia, European and developed Asian countries and collected fare data for predominantly intercontinental flights. It was concluded that both at the national and route level there 'is clear evidence that fares tend to decline as the regulatory and market environment becomes friendlier to competition'. In addition, they concluded that fares react to changes in the level of regulation independent from market structure, which they explain by suggesting that potential entry as much as actual competition disciplines prices. They also concluded that economy fares tend to be higher for non-stop routes that are dominated by an airline alliance and they find that airport congestion and dominance tend to raise fares for business passengers. Thus, competition through indirect connectivity has a greater influence on lowering airfares than competition on direct connectivity.

Doove et al. (2001) extended the work of Gönenç et al. (2000) to cover 35 countries. They found a positive and significant relationship between the restrictiveness of air service agreements and airfares, with larger effects for developing countries than for developed countries. A differentiated effect of air service liberalisation for developed and developing countries is also found by Micco et al. (2006). Focusing on OSAs with the U.S., they investigated the impact of these agreements on airfares and on the share of US imports arriving by air. They found that for developed and upper-middle income countries, signing OSAs on average reduces airfares by nine per cent and increases the share of imports arriving by air by seven per cent three years after the OSA is signed. In contrast, they do not find significant effects of OSAs for low income countries. Here we might be observing the fact air fares in low income countries remain high relative to individual income, even in the wake of a reduction brought on by OSAs. In those cases, it is likely that these countries would need a combination of OSAs and the entry of low cost carriers to see a marked traffic increase.

Piermartini et al. (2008) use a gravity model to explain bilateral passenger traffic and estimate the impact of liberalising air service agreements on air passenger flows for a sample of 184 countries. In order to assess the effective degree of liberalisation of the bilateral air service agreements, the Air Liberalisation Index, constructed by the WTO (2006), was used. The study found robust evidence of a direct and significant relationship between the volume of traffic and the degree of liberalisation of the market. An increase in the degree of liberalisation from the 25th percentile to the 75th percentile increases traffic volumes between countries linked by a direct air service by approximately 30 per cent. The study finds that the most traffic-enhancing provisions of air service agreements are the removal of restrictions on the determination of prices and capacity, granting of cabotage rights and the possibility for airlines other than the flag carrier of the foreign country to operate a service.

Liberalisation does not always have such dramatic impacts. In the case of the US-EU open skies, the fact that the markets were already relatively open between most large EU countries (Netherlands, Germany, Italy, France) and the US meant that there was little pent-up demand that a new agreement could release. Thus liberalisation has shown positive or neutral effects on passengers and carriers, depending on how actually restrict was the regime it replaced and how much pent-up demand was not being met.

Liberalisation has had the largest impacts on traffic and consumer welfare has been where it enabled the creation or significant growth of low cost carriers. However, the growth of those carriers has also led to

labour cost-cutting measures, such as atypical employment, lower salaries and lower pensions which offsets some of the consumer welfare gains. Removing restrictions on entry to the market can generate significant levels of new demand, changing travel patterns and transforming the market. A number of studies conclude that in most markets competition through entry of a full service carrier does not yield such transformative results as entry of the first low cost carrier.

Connectivity

Liberalisation of air transport has altered how aviation markets are connected. With an increased reliance on the hub and spoke network at an airline alliance level, secondary markets have become increasingly dependent on their linkages to the major hubs for indirect global connections. While some secondary locations have lost direct services connectivity has increased both in the overall market, with many more convenient indirect routes provided, and usually for these secondary locations too. Meanwhile, a number of airports around the world have established or tried to establish themselves as global hubs with the aim of vying to attract transferring passengers and freight from one part of the world to the other, while generating little traffic themselves. This is the case of Abu Dhabi, Amsterdam, Doha, Istanbul, Panama and Singapore to name only a few examples. This has significantly changed the way people and goods travel across the world, shifting travel patterns away from some of the more traditional EU and North American hubs and providing consumers and shippers with new routing options.

These changing travel patterns have been particularly felt in Europe where flights through Turkey and the Gulf hubs have become viable alternatives to direct flights from the major European hubs in connecting Europe with Asia or Eastern Africa. ACI-Europe (2014) shows that direct connectivity between EU and Asia-Pacific is at an all-time high, but its growth rate has been lagging, thus reducing the market share of major EU hubs despite growing traffic. Thus, for example when looking at onward connectivity from Europe, in the last decade connectivity grew by 28% for EU hubs, compared to 307% for non-EU European hubs and 53% for non-European hubs. This has in turn pushed down the combined market share of Heathrow, Charles de Gaulle and Frankfurt from 33% to 29% since 2004 as those airports have faced both increased competition from emerging mega-hubs and the global financial crisis that affected EU hubs more significantly than non-EU hubs. Overall, direct connectivity from EU airports declined by 7% between 2007 and 2014, while non-EU European airports saw their direct connectivity grow 34%. On the lucrative Europe to Asia routes, where EU hubs have some geographic and economic disadvantage, the top 4 EU hubs combine for nearly 40% of connections, compared to 7% for Istanbul and 5% for Dubai.

The increase in the importance of hub connections has raised issues over a fall in direct connectivity, met with greater concern in some countries than in others. From a societal welfare perspective, passengers and freight may often be better off with indirect connectivity if it is accompanied by lower fares; conversely, they have shown a willingness to pay more for direct routings, showing that direct connectivity commands a premium value. When given a choice, we also see a significant portion choosing to travel via a 3rd airport, taking advantage of better fares, better schedules or better services. All other things being equal, passengers obviously prefer direct connections and some are even willing to pay a premium for it. However, a significant issue that is challenging policy makers is that a number of secondary airports and small countries have seen an erosion of their point to point long haul direct connectivity, forcing passengers to choose between indirect connectivity via a neighbouring hub or via a more distant one but removing the option for direct connectivity, thus reducing the welfare of passengers who valued them. This situation is often not the result of a restricted market but rather of how airlines construct their long-haul

networks around hubs which consolidate traffic from secondary points. Connectivity for the passenger depends on generalized costs – the combination of ticket price and time costs. Time costs include: time spent in travel; time spent in transfer – including a penalty for the foregone comfort and convenience of direct flights[6]; and scheduling costs, which fall as frequencies increase. The higher frequencies and lower ticket price options provided for by connecting services generally more than off-set the inconvenience of transfers, especially for leisure travellers and travellers visiting friends and families. However, business travellers with a significantly higher value of time, likely have a different perspective, placing more value of total travel time and preferring, when possible, direct connectivity. The challenge for network carriers is that their business model is predicated upon a healthy mix of both. The revealed preferences of travellers and shippers can yield outcomes different from national policy goals when these focus on direct connections or the provision of international services by a national carrier. Direct connectivity is not in competition with indirect connectivity, but rather each compliment the other and both are necessary to achieve an optimal social welfare outcome and a competitive marketplace offering a wide variety of choices to meet the needs of travellers and shippers.

Accessibility of regions served by secondary, non-hub airports, to international markets is an issue of concern in a globalising economy, especially to local industry. The quality of connectivity will depend on the frequency of services to hubs that offer direct onward connections to a large range of relevant destinations. Competition from new entrants or consolidation by incumbent carriers that reduces the frequency of services to secondary airports by incumbent hub network carriers can weaken connectivity to the region, particularly for business travellers, at the same time as increasing the range of connections offered and introducing lower fares on some routes. On the other hand, secondary airports and smaller countries will seek to maintain and grow the all-important long haul point to point services they may have, even if operated by a foreign carrier. This forces them to carefully balance the connectivity with global hubs and all the indirect connectivity it can produce with the point to point direct service so that passengers and shippers can have more choices on the market. In so doing, countries may find themselves conducting a strategic arbitrage between the interests of one foreign carrier with point to point service and a foreign carrier seeking to link the secondary market to its main hub and global network. The overall effect on the regional economy may not be easily modelled.

Decisions on liberalisation can be influenced both by perceptions that direct connectivity is better than indirect connectivity and by the potential consequences for regional economic development of changes in network configurations that result from new entrance. Perceptions concerning connectivity can argue for as well as against liberalisation. Competition from airlines whose business model is based on connecting services through a hub located in a small origin/destination market has tended to result in the introduction of new long distance services for secondary airports to their hubs and onward connections to some cities not formerly served by one stop transfers. The new direct connections that often follow open skies agreements are of particular political interest in the constituencies served. The long-term challenge from a connectivity perspective is that the far away hub is only appropriate for travel towards certain parts of the world, whereas hubs located in closer proximity to secondary airports tend to offer appropriate connectivity to all parts of the world. Thus a strategic concern for secondary airports is that an over-reliance on far away hubs may lead to reduced service to its local hub and thus negatively affect overall connectivity and ultimately social welfare, despite improvements in connectivity to selected parts of the world and the prestige of gaining long-haul, wide-body service to far away hubs.

6. Time spent waiting is often assigned a higher cost than time spent moving in economic appraisal. This includes time spent waiting and queueing in origin and destination airports.

The environment

Aviation liberalisation between States with a strong safety oversight regime is mainly an economic and aero-political issue but it does have ramifications for the environment. On the short -haul markets, liberalisation combined with the advent of low cost carriers led to significant traffic increase and, in some cases, a switch away from an environmentally friendlier mode as lower prices stimulated demand and enabled air transport to gain greater market shares. On the medium and long haul markets, liberalisation has offered travellers and shippers more routing options to get from origin to destination, but of course none is shorter, and thus more fuel efficient, than the direct routing which would have already been in place pre-liberalisation. Aviation has managed to partially mitigate the environmental effects of its growth, through improved, more energy efficient technology, flying larger and fuller aircraft and through operational efficiencies, but growth in traffic and emissions have not been fully decoupled. Thus, if a more liberalised aviation market translates into traffic growth it also translates into emissions growth. And if a more liberalised aviation market translates into more options for users, it also means longer routings than point-to-point flights, thus higher emissions for the same origin and destination.

Some States believe that expanding the liberalisation framework to include environmental issues creates an opportunity for arriving at a consensus on the best way to address aviation's environmental footprint but may in the process delay the advancement of liberalisation. On the other hand, some States are concerned that unilateral or bilateral limitations on liberalization could impact negatively the competitive environment or create an unlevel playing field. In addition, ICAO has been charged by its member States with drawing up a global aviation emissions agreement in time for the Organisation's 39th Assembly in autumn 2016. This should catalyse the development of a global emission trading scheme or other market-based measure for international aviation. Some States believe that considering the potential economic consequences a patchwork of regional environmental measures could have on the industry and making internalisation of aviation's climate impacts part of the consensus on air transport liberalisation is an important opportunity for the sector. Finally, there may be some value in combining, under an environmental lens, the wider economic benefits of aviation with the concept of connectivity explained previously, to see how the economic benefits per emission unit compares across modes of transportation.

The emergence of aviation blocks

Liberalisation of domestic air transport markets has led to the emergence of regional aviation blocks, which we can define here as a group of States seeking to act as a single unit in either a particular instance or in all aviation-related matters. In some regions, most notably in the European Union, domestic air transport liberalisation has been part of a broader objective for the creation of an EU Single Market and was spurred by rulings from by the European Court of Justice and the adoption of three packages of measures by the European Union (1987, 1990, and 1992), culminating in the freedom to provide cabotage

services (1997). The creation of a single air transport market entailed the transition from a system of national ownership and control to a system of Union ownership and control. The establishment of an internal air transport market governed by uniform rules led to the concept of a Community carrier, ", as defined originally by Regulation (EEC) 2407/92 and then Regulation (EC) 1008/2008, that is to say an airline which is majority owned and effectively controlled by any EU Member State and/or its nationals and which enjoys the EU right of establishment. The creation of the establishment of Community carrier was predicated upon regulatory convergence towards higher regional standards in terms of safety. It brought about extensive market access opportunities for European airlines, which can now serve any route within the EU. Low cost carriers, particularly Ryanair, EasyJet, Norwegian Air Shuttle, Vueling and Wizz Air make extensive use of 7th and 9th freedoms within the EU, establishing bases in other EU countries. Meanwhile, European network carriers chose to continue to focus on their home countries, for economic rather than regulatory reasons, but conducted a series of mergers and acquisitions leading to the formation of IAG, the Lufthansa Group and Air France-KLM.

The establishment of an internal air transport market resulted in the European Commission playing a more active role in the area of negotiation of air transport agreements. The 2007 US-EU Air Transport Agreement is the first agreement negotiated between the European Commission on behalf of the EU Member States and a non-EU member, in this case, the United States. Regional integration, on a scale far more modest than in the EU but gradually leading to single markets can be seen emerging in other parts of the world. In South East Asia, the ten Member States of the Association of Southeast Asian Nations (ASEAN) have set the target of gradually establishing an ASEAN single aviation market by 2015, which would be more liberalised than what exists today but still not comparable to what exists in the EU, especially with respect to regulatory convergence, ownership and control and cabotage. Meanwhile, ASEAN has successfully negotiated its first air services agreement, with China, and has set-up an aviation working group with the EU as a first step to strengthen co-operation between both regions and which may provide an opportunity to establish a single EU-ASEAN ASA.

Latin American States have established regional initiatives designed to open up air transportation in secondary markets. The 1996 Mercosur Sub regional Agreement on Air Transport Services (which involves Argentina, Bolivia, Brazil, Chile, Paraguay and Uruguay) provides a liberalised regime for new routes alongside services on existing routes that continue to be regulated by earlier bilateral agreements. The members of the Andean Community (ANCOM), including Bolivia, Colombia, Ecuador and Peru, have established the Andean Sub regional Air Transport Integration System (the Andean Pact). This is relatively liberal as it allows airlines to enter the Andean market if they have their principal place of business in one of the member States and there are no ownership and control requirements. However, all existing air service agreements between these countries remain in place and have not been replaced by a regional framework. The systems co-exist in parallel with the multinational agreement complementing the bilateral air service agreements. The member States and associate members of the Association of Caribbean States (ACS) have also concluded an Air Transport Agreement (whose provisions are similar to those drawn up under bilateral air services agreements) with the objective of promoting a “Community of Interest” and introducing a moderately liberal market regime among the member states.

In Africa, the 1999 Yamoussoukro Decision provided for gradual liberalisation of intra-Africa air transport services without, however, establishing a single aviation market or regulatory convergence. The Decision derives from the 1991 Abuja Treaty, which established the African Economic Community. Although the Yamoussoukro Decision prevails over any multilateral or bilateral agreements, to the extent those are incompatible with it; it has not been operationalized thus far. As a Monitoring Body has been established to supervise, follow-up and implement the Decision, charged with its periodic review, the mechanism for its re-invigoration is in place.

These initiatives suggest a trend towards regional integration that might culminate in regulatory convergence and the establishment of single aviation markets. These regional blocks might then behave as unitary States, applying rules, such as those on ownership and control, labour laws and safety regulations at

a regional rather than national level, negotiating air services agreements as a single entity and achieving a level of regulatory convergence on-par with that seen in the EU.

Market access

Concerns to ensure that national businesses benefit from liberalisation, or that specific companies are sheltered from competition, sometimes complicate or delay negotiation of open skies agreements and restrictions on access to passenger and freight markets remain even in highly liberalised markets. Fifth freedom code-share and fifth freedom beyond rights are often limited and seventh freedom rights and cabotage rights, either as part of an international service or as a stand-alone operation, are rarely provided. In non-open skies ASAs, third and fourth freedoms are generally capped despite the benefits that lifting restrictions on these basic traffic rights have been shown to bring in terms of social welfare. Traffic rights are exchanged on the basis of reciprocity, particularly for fifth freedoms and beyond with reciprocity here implying the trading of rights of equivalent value rather than simply exchanging the same rights. During negotiations, reciprocity is often key to granting traffic rights as States strive to attain what they consider to be a level playing field. In those cases, regulators support air services development by ensuring that traffic rights ceiling remain above the level of demand markets can bare, gradually increasing rights in existing agreements while containing what they would likely perceive as a drawback to an open skies agreement. The air freight market is generally more liberal than the passenger market, with 7th freedom rights for air freight becoming increasingly common. This has only helped global express carriers, such as FedEx, DHL and UPS, to establish hubs outside of their home markets and operate truly global networks.

ICAO has set-up two working groups to look at issues related liberalisation: the first is focused on market access while the second is focused on fair competition. It is also looking at three possible templates regarding the economic regulation of international air transport: an international agreement to liberalise air carrier ownership and control; an international agreement by which States could liberalise market access; and, an international agreement to liberalise air cargo services. These templates are still being developed and they have yet to reach the required consensus to move forward.

Some countries continue to feel the need to protect their own airlines by limiting the opportunities to compete, often based on the perception that their home carriers are ill-suited to compete with large foreign carriers. In some cases transitional restrictions on entry at specific airports have been imposed for a few years to allow incumbent airlines to prepare for competition when open skies agreements have been implemented. In other markets, governments have aimed to liberalise market access only to the degree that available capacity remains ahead of demand. While this may not distort the market as much as a restrictive agreement would, it does have the effect that the government must constantly monitor demand and adjust capacity in consequence, thus absorbing the risk of misreading the actual demand in the market. It also assumes governments can properly estimate the present and future degree of unmet or unobserved demand and maintain capacity ahead of it; in all likelihood, they may be successful at doing this on some occasions but not in all occasions. One should also bear in mind that demand can be influenced by capacity on a market, thus by limiting capacity, governments may also be limiting demand and only realise the extent of thus hidden demand when markets are liberalised. All these situations may affect innovation in new business models or the entry of low cost carriers and can create winners and losers if not managed properly. New business models are currently being analysed by the EU, especially with regards to social standards, subsidies, labour practices and rule shopping in aviation. Finally, we may witness a restrictive ASA if one country is not confident its air carriers will obtain desirable slots in the other country if the

latter's main airport is facing a slot shortage and there is no offer to include guaranteed slots at the congested airport into the ASA.

The policy and business environment can also act as a barrier to liberalisation or to market entry. This can take many forms. For example, public policies can limit the use of certain airports, either by imposing curfews, limiting runway capacity or having infrastructure operating at or near capacity levels. These measures may be in place for very legitimate reasons, but one of their drawbacks is that they constrain airport access and thus could prevent all the benefits of liberalisation and possibly some externalities as well, from taking place. As for the business environment, this is a reflection of the global nature of the air transport industry which faces different business cultures and processes in every country it operates in. This can understandably create challenges for air carriers exposed to a business environment in one country very different than what they are used to in their home countries. Here, governments can play a positive role in facilitating the establishment of their carriers in a foreign country and leveraging the existing bilateral relationship between national governments to ensure the carrier is fairly treated, enjoys equality of opportunity and that it is able to access the market in the way intended by the ASA.

Different approaches to market access are the result of diverging national policy priorities. Some States, such as New Zealand, Finland or Chile have articulated policy goals that prioritise improving the connectivity of their countries with the rest of the world, particularly in light of the challenges posed by their geographical position, and see more liberal air services agreements as important to stimulating that improvement. The US pursues open skies-type agreements as part of a broader, liberalised foreign policy articulated around market-based resource allocation and improved service delivery, establishing open skies agreements with 116 partners. This policy has recently been called into question by US carriers and airline unions in regard to Norwegian Airlines International and with respect to the open skies agreements with Gulf countries over concerns about fair conditions for competition (see below). The EU is also a liberalised block, as it is fully open within its 28 countries and an increasing number of neighbouring countries, and has recently signed more than 10 open sky agreements with more remote countries. Many other countries have taken a more defensive stance, limiting market access, for example, when they are concerned that liberalisation might lead to more indirect connectivity or threaten existing direct connectivity and incumbent carriers (see final paragraph on connectivity above).

Ownership and control

Restrictions on the nationality of the individuals that own and control airlines are one of the main barriers to liberalisation. Foreign investment in national airlines is limited in most countries and even forbidden in some. When allowed, it is usually capped as low as 20% (Brazil) or between 25% (US, Canada) and 49% (EU, Australian international carriers, New Zealand international carriers). These restrictions are reflected in bilateral air services agreements in the form of ownership and control clauses (O&C clauses). These clauses provide that majority ownership and effective control of an airline be vested in the country of airline designation, usually the country of airline establishment. A typical O&C clause reads: "each contracting State reserves the right to withhold or revoke a certificate or permit to an air transport enterprise of another State in any case where it is not satisfied that substantial ownership and effective control are vested in nationals of a contracting State…" Ownership and control restrictions can prevent airlines merging because of the risk that traffic rights will be taken away on the grounds that the ownership has passed to nationals not covered by the relevant ASAs. It should be noted that no traffic rights have been lost as the result of the recent large mergers in Europe, the US, the Caribbean or Latin

America as existing traffic rights from the incumbent entity were inherited by the new one; however this outcome is not automatic and required carriers and regulatory authorities to work together to achieve this desirable outcome. A key consideration in these situations is determining whether or not the new ownership structure will enable foreign owners to circumvent limitations in ASAs between the country to which the new owner belongs to and third countries, the so-called free rider phenomenon. Generally speaking, regulators will look favourably on situations where changes in ownership nationality do not lead to changes in market structure. Regulators have given themselves tools, such as USDOT waivers in the US or the granting of rights extra-bilaterally[7] to have the flexibility to allow changes in ownership and control nationality of foreign carriers when it is not inimical to their own national interests.

Nationality restrictions have been put in place for a number of reasons, including:

- National security: ensuring that national air carriers are not owned by national from a foreign, potentially enemy power.

- National defence: traditionally, the civil aviation fleet provided a pool from which national governments could augment their military forces in times of war. This was greatly facilitated if the airline was owned and controlled by nationals of that State. While far less of an issue today because military support is increasingly provided under contract, there still exists in some countries, particularly in Latin America, the United States and Africa, some linkages between civil aviation and military aviation.

- Reservation of air traffic rights for national stakeholders: Traffic rights in air services agreements are traded by countries on behalf of their designated carriers. Nationality restrictions provide a definition as to what constitutes a carrier from one country.

- Fostering a domestic industry: By imposing nationality restrictions, each country was able to develop their own national carriers. This in turn created a very fragmented industry which drove carriers to work together, through pooling, code-sharing, alliances and joint ventures.

- Safety considerations: There is a concern that the safety performance of an air carrier could be negatively affected if it were owned and controlled by nationals of a country with a weak aviation safety culture. This argument is negated by the fact that regulatory control of an airline in practice is not a function of ownership but rather location of establishment. However, in the EU, a Community carrier can be based in one Member State, and thus subject to its civil aviation authority regulatory oversight regime, while operating most if not all of its flights from other Member States , hence a need for close safety convergence within the EU currently pursued by the European Aviation Safety Agency and its members.

The consequence of ownership and control restrictions has been to curtail the ability of airlines to access capital and complete mergers and acquisitions that could provide for a more efficient air transport industry, particularly in smaller, non-EU countries with limited capital markets. This translates into higher capital costs for air carriers and an inability to fully utilize the economies of scale and of density that could come from a merger. These restrictions on shareholder nationality would be considered harmful to most other industries who currently enjoy broad access to global capital markets.

Ownership and control thresholds treat all foreign capital equally even if the purpose could be radically different. In addition, within the EU, a strategic investment by an EU carrier in another EU carrier

7. Rights granted unilaterally and temporarily beyond what was negotiated in an air services agreement when deemed in the national interest to do so.

is examined under a competition lens, whereas it not when a non-EU carrier invests in an EU carrier. It is worth questioning whether purely financial investments by foreign, non-airline investors should be treated on the same footing as strategic investments by a foreign airline as they can yield significantly different outcomes. In the case of the former, the foreign investor is likely only seeking to maximize their returns as would any domestic investor, whereas in the case of the latter, the foreign airline is likely seeking to integrate the carrier being purchased into its existing network and reinforce it.

In the face of these restrictions, airlines have responded by finding new and innovative ways to collaborate and extract as much of the benefits of a merger as possible. In some cases, this entails an air carrier taking an equity stake in another within the limits permitted by law (i.e. Lufthansa group, IAG, Air France-KLM, Etihad's equity partners, Air Asia group). In other cases, airlines seek the benefits of a merger without changes in equity. This started with airline alliances, such as the Northwest-KLM alliance in the 1990s which saw the carriers co-brand their aircraft and offer coordinated services. Meanwhile, in both Europe and Southeast Asia, route-specific airline pooling agreements were established. They enabled carriers to share revenues and even profits on certain routes. These arrangements laid the groundwork to the formation of three large multi-airline alliances by the turn of the century and now, metal-neutral joint ventures forming smaller, more closely integrated, market-specific alliances within each broader alliance. Metal-neutrality is the term for comprehensive economic benefit sharing agreements where each airline partner becomes indifferent to which carrier actually carries the passenger.

Metal neutral joint ventures offer most of the benefits of a merger, including the elimination of double marginalization, coordination of schedules, capacity, shared frequent flyer programs and air fares, sharing of revenues and costs and joint marketing. However, these joint ventures are market specific, such as over the North Atlantic, the North Pacific or between Europe and Asia and thus each one covers only a small part of an airline's activities, but taken together, they extensively cover the core long-haul network of these carriers. They require anti-trust immunity and close scrutiny by competition authorities in order to be put in place and are usually only approved in the context of liberalising bilateral ASAs (ITF 2014). They have proved to be successful but have raised questions as to the relevance of ownership and control restrictions in a world where increasingly the most strategic trunk routes are effectively operated by multinational joint ventures.

For EU carriers, horizontality is another way to mitigate the impact of barriers related to ownership and control. Present in recent air service agreements involving a European Union country, it allows rights secured by one EU member to be used by an air carrier from another EU member. For example, the traffic rights of French carriers in the France-Singapore air services agreement can be used by any EU carrier, subject to a free rider clause. Thus in theory, we could see British Airways fly between Paris and Singapore. Similarly we might see Air France fly between Frankfurt and New York. In practice these routes, which may be profitable, do not fit in the network carriers' strategies of building hubs and ae therefore not offered for economic reasons rather than regulatory ones.

In ASEAN countries, a more liberal interpretation of airline control has allowed for the Air Asia group to develop nine subsidiaries across the region, majority-owned by nationals from the country in which they are based but heavily influenced by the mother company. However, since interpretations can change over time, having clear common rules which require a lengthier process to be changed, would be a more desirable outcome.

For international services, the USDOT, for example, must find that an air carrier is fit, willing, and able to provide the foreign air transportation, has been designated by the Government of its country to provide the foreign air transportation under an agreement with the US, or that the foreign air transportation to be provided under the permit will be in the public interest, as per 49 U.S.C. 41302. There are a number of factors the USDOT considers when reaching this public interest determination, including the ownership and control of the carrier. The Department has a policy of requiring a foreign air carrier to be substantially owned and effectively controlled by citizens of its claimed homeland. The reason for this standard is to prevent the economic benefits of a service from flowing to citizens of a third country with which the

United States may have less than satisfactory aviation relations. In recognition of the growing importance of trans-border investment, however, the USDOT will waive the ownership and control standard if, upon examination of an air carrier's non-homeland ownership, the USDOT concludes that there is nothing in the ownership structure that would be inimical to US aviation policy or interests. While this right of waiver is a common provision in ASAs, being able to do so administratively permits the DoT to make determinations quickly and allow a carrier from one country to use that country's traffic rights to the US even if the US believes that carrier is owned and controlled by nationals from another country. Such flexibility is present in other jurisdictions as well and is consistent with Article 1 of IATA's non-legally binding Agenda for Freedom, endorsed by 13 governments including the US, the EU and New Zealand where States agree to waive their right to refuse to grant operating authorisations to an airline from another country on the basis that it is not owned and controlled by nationals of that country.

Latin American countries generally follow liberal policies towards ownership and control. Chile, for instance, has abolished caps on foreign investment in its air carriers. It has also joined Latin American countries, including Argentina and Brazil, in allowing cross-border mergers of international carriers, subject to the constraints of competition law. This resulted in the establishment of the LATAM group, the largest airline holding in Latin America, bringing together Chile's LAN with Brazil's TAM, while respecting Brazil's restriction of 20% foreign ownership in its carriers. It is interesting to note in this respect that the 2006 EU-Chile ASA allows nationals of several Latin American countries (in particular, the countries which are members of the Latin American Civil Aviation Commission) to own or control Chilean airlines without jeopardising their market access to EU Member States.

The business environment

A rather opaque but very real barrier to benefiting from air liberalisation is differences in business environment. Cultural differences that affect the way that business is conducted are easily overcome but in some cases complex and inefficient bureaucracy or systemic corruption become an obstacle to conducting business in a safe and legally predictable way. Air carriers sometimes seek the assistance of their national governments in using conditions to ASAs to drive improvement of business practices to comply with national and foreign laws.

The juxtaposition of diametrically opposed business models, such as fully privatised air carriers and vertically integrated, state-owned carriers, operating at either fully privatised user-pay airports or publicly operated and subsidised airports has created a need to develop a competition framework that could support he co-existence of all existing business models within a fair and competitive environment. In that regard, the EU-Gulf Cooperation Council Aviation Dialogue, initiated by the European Commission could, if successful, serve as a basis of discussion for a more global approach.

There are a number of other endogenous and exogenous barriers to market entry. Arguably, the most important exogenous barrier is airport congestion, while endogenous barriers include strategies by dominant carriers to deter competitors from entering the market. Strategies related to network competition and those related to loyalty programs can be distinguished, although both types of barriers are interrelated and generally reinforce each other.

Loyalty programs include frequent flyer programs (FFPs), corporate discount schemes (CDSs), and travel agent commission overrides (TACOs) can also be used to direct customers to particular airlines, thus making it more challenging for new entrants to establish a strong foothold in an existing market. FFPs

exploit the so-called principal-agent problem. A frequent business traveller (the agent) that has tickets paid for by his or her employer (the principal) benefits from the FFP by accumulating credit points by flying with a specific carrier and has an incentive to choose this airline even if it costs the employer more than fares offered by competing airlines. CDSs and TACOs can function in a similar way to incentivize travel agents and companies. They all intend to lock-in beneficiaries because the discounts offered reduce their willingness to switch to other airlines. The larger airlines or alliances between them are, the greater the benefits for the customers of these programmes. Borenstein (2014) claims that this provides important incentives for airlines to engage in airline alliances. He concludes that increasing the number of alliances among otherwise competing, or potentially competing, airlines, is likely to result in anticompetitive effects.

Several studies (ITF (2009) and Zhang (1996)) suggest that airlines may form hub-and-spoke networks and alliances as a strategic response to competitors not simply to save costs. In these cases, air carriers build up their hubs as a global connection platform through which most of their flights are routed. The hub then becomes a fortress dominated by the hub carrier with other airports in the country reduced to the role of feeder stations. The line between strategic motivation and network optimization is, however, not easily identifiable. Meanwhile, reducing secondary airports to a feeder role introduces opportunities for other carriers to penetrate the market and try to divert connecting traffic from the national hub to their own hub in a different country, when geographical conditions are favourable to it, which can have negative effects on the national hub and the national carrier's network.

Passenger rights is an area where there exists very little regulatory convergence, save for the Warsaw (1929) and Montreal (1999) Conventions which deal mainly with loss of life or luggage. Passenger rights today cover a far broader scope, including tarmac delays, denied boarding, flight cancellations etc. The proliferation of code shares, alliances and joint ventures operating in a patchwork of jurisdictions with strong, weak or non-existent passenger rights legislation has made it very difficult for passengers to understand exactly what their rights are. Until regulatory convergence can be achieved in this field and global standard adopted, increased liberalisation underscores the need for transparent application of passenger rights.

Fair competition

Inequalities between airlines can arise as the result of many factors, including inequality of environment. Favourable geography for example, a lower cost business environment, more aviation-friendly public policies, more cost-efficient airports or State aid and subsidies can all lead to inequality between carriers. Views as to which of these factors should be considered relevant to establishing a level playing for competition in economic terms differ between jurisdictions. This contrasts greatly with other global service industries where mechanisms under the framework of the General Agreement on Trade of Services provide for adjudication and counter-measures over issues of perceived or real unfair trade practices and has no rules on which subsidies are acceptable or not in services trade. In aviation, most ASAs have a formal dispute resolution mechanism with non-binding judgement but very few specifically refer to which subsidies are acceptable or not, only that they should not negatively affect the fair and equal opportunity of carriers to compete.

Favourable geography is the most clear-cut of the factors that should not be viewed as distorting competition. Geography can result in markets being unevenly distributed, i.e. carriers from small countries at the crossroads of aviation are able to access a far larger market base than foreign carriers operating services into this crossroad. This is a factor in the success of airlines operating out of bases in the

Netherlands, Panama, Qatar, the United Arab Emirates or Singapore, and in the past favoured locations including Canada, Iceland and Ireland when aircraft range was more limited.

The degree of competitiveness and liberalisation of other stakeholders within the aviation value chain can have a significant impact on carriers' ability to compete. For example, the performance of the hub airport of a hub and spoke carrier will directly impact the competitiveness of the carrier, as will the performance of the air navigation system. As both airports and air navigation services providers are not liberalized and their performance and cost vary significantly between countries, air carriers face a situation where they compete in a liberalized environment but depend on the support of other aviation value chain stakeholders who generally enjoy a significant degree of shielding from direct competition.

Capacity constraints at hub airports can be a significant constraint on the impact of liberalising an air service agreement. If congestion at peak hours prevents new entry there will be little or no competition to exert pressure on prices. Congested airports have three options for dealing with excess demand, namely: allow congestion to accumulate, as in many US airports; auction slots, the ideal way to assign slot to the highest value users but not used anywhere yet for the primary allocation of slots, only secondary trading of small numbers of slots in a few airports; or allocate slots, preferably following fair, clear and transparent guidelines. As with any rationing system, it is not possible to satisfy all of the customers all of the time. Slot allocation methods attempt to prioritise who should have access to the limited number of slots available.

Many airports follow the IATA World Scheduling Guidelines (WSGs). These follow a number of key principles, including grandfathering rights, so that carriers that historically were assigned slots are free to keep those slots. The airlines argue that this guideline is important for facilitating long-term market development and better plan for aircraft investment and crew training. It would be difficult and perhaps uneconomic to develop airline services if airline slots were to change every six months with the new IATA scheduling season[8]. The principle is especially important for investing in connecting flight banks at hubs and for developing market awareness of nonstop service availability. Related to grandfather rights is the principle that an airline wishing to reschedule an existing slot will have a higher priority in allocating a slot at the new time than an entrant airline.

Grandfather rights make entry difficult for new carriers into airports with slot allocation. A number of governments and the European Commission have imposed regulations to provide for access to slots by new entrants. The principle of grandfather rights is accepted but half of any other slots are reserved given for new entrants. IATA has adopted this externally imposed policy. The allocation of half of any available airport slots to new entrants and half to existing operators balances two key objectives. Enabling new entrance seeks to ensure that markets are subjected to competitive forces. Allocating some slots to incumbents recognizes that due to higher interconnection possibilities and airline economies of traffic density, higher allocative economic efficiency might be achieved by incumbent airlines.

In the last two decades, the combinations of a more liberalised environment, the emergence of low cost carriers and new technologies have enabled carriers to derive significant efficiency gains which has translated into lower prices and more travel options for consumers. Air carriers have increasingly turned to outsourcing in-house activities and embraced self-service solutions for passenger services (on-line purchasing, on-line check-in). Outsourcing has resulted in legal but less advantageous working conditions marked by lower union penetration, lower wages and reduced benefits while self-service options offered to passengers has reduced the need for frontline personnel.

More problematic though is that some carriers have adopted employment practices with questionable social acceptance in what appears to be a race to the bottom for labour standards, which can be detrimental to worker's rights, aviation safety, liability and competition. It can also force their competition to emulate

8. Slot coordination is based on the IATA summer and winter seasons.

to the extent possible these practices, further pursuing this race to the bottom in terms of labour standards. This can take a number of forms, including self-employment, fixed-term work, zero-hour contracts, pay-to-fly schemes and regulatory shopping leading to social dumping (Jorens et al., 2015). This last issue is a relatively new but growing concern in aviation and arises when carriers hire crew from lower wage countries to operate their flights in higher wage countries. Trade union opposition would prevent most airlines operating this way but the issue has arisen under the US-EU air services agreement with a non-unionized carrier, Norwegian Air International, which plans to use lower paid flight attendants from their Bangkok base on some flights between Europe and the US. The US DoT is reviewing Norwegian's application to provide service in response to concerns raised by several US Airlines.

State support for aviation has been prevalent from the industry's early days to today in both developing and developed countries reflecting the recognition of the wider economic benefits aviation brings to national economies. Direct and indirect subsidies to a home carrier can be problematic as can cross subsidies when the entire aviation value chain is publicly owned and integrated. ICAO's Air Transport Regulatory Panel had indicated in its 10th meeting held in 2002 that State support can distort international markets but can also play a role in transitioning to full liberalisation and in response to market forces failure. The panel pointed out that States should refrain from taking actions which could result in hampering liberalisation of air transport. However, some States have argued that a level playing field is necessary in order to pursue greater liberalization and that the perceived absence of fair competition can justify a protectionist policy to mitigate the impact of a distorted marketplace.

Transparency in airline funding and finance is essential to ensuring a levelled playing field for all carriers. Publishing audited annual accounts to International Financial Reporting Standards (or equivalent standards) is the industry standard for transparency. Reporting on the use of State aid as start-up capital versus covering long-term operating costs is also important. Under free trade agreements, subsidies for operation are usually limited and accompanied by stringent conditions. In aviation, this can take the form of being forced to exit some markets and refraining from opening new ones, to minimize the distortion to competition.

Whilst a commonly held definition of what constitutes a level playing field in international aviation has yet to be agreed internationally, the aim should be equality of opportunity, as set out in the Preamble to the Chicago Convention, rather than equality of outcome, an approach which tends to impose static results, preventing market entry and preserving inefficiencies. Some inequalities are clearly the result of natural advantage and, as with other goods and services, are important sources of benefits provided by trade. These clearly include geographic advantage. Many differences in general business regulation can probably also be put in this category as are differences in the ownership model of the various stakeholders involved in the aviation value chain and differences in the desired societal systems of different States . One can easily see how a fully integrated, publicly financed model could behave differently from a mixed public-private ownership with a focus on the user-pay model and little or no public funding. However, liberalisation needs to be accompanied by an ICAO-endorsed framework that defines what forms of subsidies and the degree of harm they create are acceptable, that establishes how to report the presence of subsidies throughout the aviation value chain and that provides safeguards against anti-competitive practices through conflict-resolving instruments.

The issue of how to ensure fair competition in an environment of liberalisation was discussed in 2003 at the ICAO Fifth Worldwide Air Transport Conference, which culminated in a model clause on "Safeguards against anti-competitive practices". The model clause was later incorporated in ICAO's Policy and Guidance Material on the Economic Regulation of International Air Transport[9] and has been analysed by ICAO in its Manual on the Regulation of International Air Transport. ICAO has recommended that States recognise that subsidies that discriminate between carriers can distort trade and competition and

9. Doc 9587 and 9626 2nd edition respectively.

recommended measures be taken to avoid distorting competition. States should also consider the ICAO Template Air Services Agreements, which includes an article on fair competition and one competition laws. The ICAO Secretariat has produced an overview of competition policies and practices applicable to air transport across a number of States and regions, concluding that "common elements could form the basis for the development of a set of core principles on fair competition in international air transport" (ICAO, 2012). Finally, it would be noteworthy to closely examine fair competition rules that are in place at the WTO and govern most other industries and see which may be transferable to aviation. Such commonly held principles would provide a practical basis for safeguarding fair competition and guarding against unfair competition. If adopted, it would help the industry make significant progress towards regulatory convergence and would remove an important argument against liberalisation.

Outlook for liberalisation

Looking forward, the state of the industry in the next decade should be one of increased integration and liberalisation, despite the challenges to liberalisation discussed previously. The airline industry is dynamic and innovative so making predictions for its future evolution is perilous. Therefore, what follows are some plausible future evolutionary milestones for this industry.

Airport and airspace congestion may limit fully taking advantage of a liberalised ASA if capacity is insufficient to meet demand. This issue affects markets globally, but possibly more so in North America and Europe, where, generally speaking, building new runways or new airports can be a longer process than in other parts of the world. Therefore it will be important to accelerate consolidation of air traffic management and devise more efficient ways to make use of the existing infrastructure and invest in new infrastructure so that the full social welfare gains permitted by a liberal regime can continue to materialise.

Africa should experience a decade of strong growth with some carriers, such as Ethiopian Airlines and Kenya Airways joining South African Airways in providing Africa with global connectivity. We will likely see the emergence of a strong group of airlines operating under a common brand, similar to the LATAM or Air Asia groups, and centred on a financially robust carrier. The first signs of this have appeared with the acquisition of 49% of Air Malawi by Ethiopian Airlines. Growth in low cost carriers could help make flying more affordable and stimulate growth.

Gulf and Turkish carriers are poised to continue to grow their market share of Europe to either Asia or Africa and Asia to Africa traffic, taking advantage of their geographic location in proximity to the world's economic centre of gravity, aviation-friendly public policies, massive infrastructure airport investments and a growing fleet of modern aircraft. They are likely to benefit from a slowly increasing number of more liberal ASAs. The trend could be reversed in the short term as accusations of subsidised competition and potential impacts on network efficiencies are investigated. This illustrates the need for cooperation in developing agreed frameworks for fair competition including high standards of transparency in annual accounts and enforcement mechanisms that do not prevent the progress of market liberalisation. Gulf carriers are likely to be increasingly active in seeking partnerships or even buying stakes in other carriers in order to both feed Gulf country hubs and also to access those carrier's secondary markets to expand the reach of the Gulf carrier's network.

ASEAN countries need to continue their integration towards a single market if agreements with external partners are not to cause difficulties with competition between ASEAN airlines within the region. We can expect more ASAs where ASEAN will negotiate in accordance with the principle of "Community

of interest". However, it is not clear that ASEAN will achieve the same degree of integration and openness as the EU in the next decade.

In Northeast Asia, China will eventually open up its domestic market and allow low cost carriers to operate at its major airports, thus removing the protections it put in place for its three large carriers. When this will happen is difficult to predict. ASAs will probably only be liberalised further only when the major national carriers are judged to be ready to compete. Japan, will continue to liberalise both air services and the management of its international airports. Liberalisation in Northeast Asia will be accompanied by strong growth in low cost carriers and significantly higher passenger traffic volumes, placing additional pressures on existing infrastructure.

Integration between air carriers will continue as airlines seek the benefits of mergers despite ownership and control restrictions. These commercial developments may affect the impetus for further liberalisation. Large, multinational carrier blocks, either in the form of subsidiaries, joint ventures or alliances may persuade policy makers to not only consider the national interest but also the interests of the aviation block to which its national carrier belongs.

Air freight will continue to be on the leading edge of liberalisation, particularly with respect to 7th freedom rights[10]. This increased level of liberalisation is due to the needs of the globally integrated air express business and because the one-way nature of air freight forces airline planners to find creative routings to make a flight profitable. Meanwhile, as more than half of air cargo is carried in the belly of passenger aircraft, and this proportion is growing, it will be dependent on traffic rights obtained for passenger flights on an increasing share of its non-express business. Thus, we can observe divergent interests between freighter operators and passenger aircraft operators, with the latter likely favouring equal treatment for passengers and freight.

Conclusions and recommendations

Liberalisation of air service agreements has an established track record of producing societal benefits, particularly to users of the transportation system and stakeholders that benefit from the wider economic benefits it provides. The effects of liberalising markets where governments tightly control the supply of air services can be transformational, stimulating for example the emergence of low cost carriers. Incremental liberalisation is likely to have less visible effects where markets already enjoy a large degree of freedom, as economically efficient patterns of supply and airline organization will already have been established, but enhanced opportunities for competition will always exert pressure on prices. Liberalisation has opened up air travel to the whole of society and greatly facilitated tourism and trade.

The momentum that liberalisation has gained reflects the geopolitical changes and market developments that have occurred since the signing of the Chicago Convention. Today's international aviation marketplace is more connected than ever, with major global airlines aligned in one of three network alliances and metal neutral joint ventures appearing on most trunk routes. Liberalisation has shown itself to be highly beneficial to consumers and shippers; in the US it enabled a transition from a point to point domestic network to a far more efficient hub and spoke model, fully integrated into the

10. Operating flights between two countries, neither one of which is the country where the carrier is based (i.e. US-based FedEx flying from France to China).

international network while allowing low cost carriers, such as Southwest to operate flights between US states. In the EU, the creation of a single air transport market supported by common rules for the operation of air services has seen the emergence of low cost carriers, sharply falling air fares and significantly improved connectivity for secondary airports. In ASEAN countries, a liberal interpretation of airline control has enabled the growth of low cost airline groups, bringing lower air fares to the region.

Liberalisation has the potential to deliver large consumer welfare gains in the aviation markets of Northeast Asia, Africa and Russia, three of the areas of the world with the largest potential for growth in air travel if their markets are liberalised. However, particularly in the case of Africa, consideration should be given to advance liberalisation in a gradual way when there is a real risk that global carriers from developed countries may overtake the much smaller African carrier. This can take the form of a transitory period during which some African carriers enjoy more liberalised rights than their non-African counterparts in order to give them a head start in building a sustainable market.

Liberalisation should not only be seen under the prism of air traffic rights. Ownership and control of air carriers remains quite restricted compared to other global industries, including in transportation, although some areas, such as the domestic Australian or New Zealand markets or the EU are far less restrictive than others. This has made it more challenging for some airlines to access capital, particularly in small capital markets outside the EU, and has forced them to find creative ways to derive the benefits that mergers between air carriers could produce. One of the most effective means used by air carriers is metal-neutral joint ventures, which, in effect have removed the concept of majority national ownership. This should encourage national legislators to further explore bilaterally or multilaterally removing restrictions on ownership and control and allowing foreign ownership and control of national airlines, first for domestic services and eventually for international services where allowed by air services agreements, as the EU has successfully done. Such a policy would be consistent with IATA's Agenda for Freedom. It would also provide a framework around ownership and control in the airline industry that is in-line with that which exists in other modes and the economy at large. Finally, because the airline would remain under the same State regulatory control, no matter the nationality of its ownership, the amount of foreign capital invested in a carrier should have no incidence on safety, security or environmental performance but could add a manageable level of complexity for regulators.

Lifting ownership and control restrictions would likely result in an increase in foreign direct investment in airlines with a strong business case, as they establish operations in new markets and consolidate through merger and acquisition. This increase in investment would lead to a more efficient use of capital, debt reduction and a more rational use of resources providing financial benefits to airlines and their balance sheets. In addition, a capital-intensive industry such as the airline industry would greatly benefit from being able to access the lowest cost capital, independent of its nationality, as most other sectors of the economy already do.

The success of air carriers from countries with a small home market but a significant geographical advantage regularly prompts review of fair conditions for competition and the net benefits of liberalisation from a national perspective. A common definition of what constitutes a level playing field in international aviation has yet to be agreed internationally. The objective should be equality of opportunity, as set out in the Preamble to the Chicago Convention. Aiming instead for equality of outcome tends to impose static results, preventing market entry and preserving inefficiencies.

Some inequalities, including geography, are clearly the result of natural advantage and, as with other traded services, are important sources of the benefits provided by trade. Many differences in general business regulation can probably also be put in this category. However, other inequalities can be the result of a level of support with public finance that extends beyond domestic regional development policy measures or short term protection of airlines from economic collapse. There is no simple principle for demarcation but there is a clear need to establish an ICAO-endorsed framework that: defines what forms of subsidies are acceptable; establishes how to report the presence of subsidies throughout the aviation value chain; and provides safeguards against anti-competitive practices.

Even with such safeguards the impact of new entry on national carriers and the local labour force means that liberalization will sometimes by constrained and phased-in only gradually. On the other hand the benefits of competition from new entry may represent a clear overall benefit to the economy, at least in the short-term, in spite of impacts on incumbent airlines. There are two underlying issues: whether competition will continue to be enhanced over the long term, i.e. are the operations of the new entrants financially sustainability; and finding the right balance in labour standards that allow for some differences in regulatory regime while preventing an unreasonable erosion of labour standards through a race to the bottom. Regulatory convergence is the strongest guarantee of a level playing field but the consumer benefits of competition will drive liberalization ahead of convergence.

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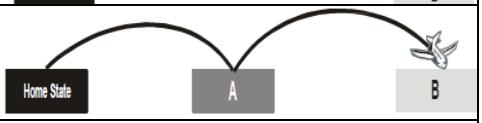
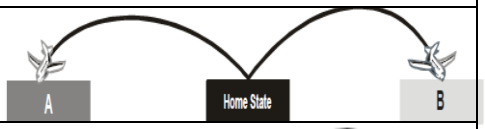
Annex: Traffic rights / Freedoms of the air

The International Civil Aviation Organisation (ICAO) provides the following illustration of the traffic rights covered by air service agreements, otherwise known as freedoms of the air. They represent rights granted by one country to airlines based in another country. Of those, only the first five are recognised by international treaties. The term "home state" in the illustrations refers to the nationality of the carrier. Rights are progressively liberal and usually carriers who have one right are presumed to also have all less liberal rights (i.e. a carrier granted a 5th freedom right in a given country usually also enjoys the first four freedoms as well).

Freedom	Name	Description	Illustration
1st	Overfly	The right of a carrier from one State to fly across another State without landing	
2nd	Technical stop	The right of a carrier from one State to land in another State without picking-up or dropping off traffic	
3rd	Drop-off traffic	The right of a carrier to carry traffic from its home State to another State.	
4th	Pick-up Traffic	The right of a carrier to carry traffic to its home State from another State.	
5th	Traffic to/from 3rd State	The right of a carrier from one State to operate a flight to or from two other States and pick-up or drop –off traffic between those last two states.	
6th	Traffic via Home State	The right of a carrier to carry traffic between two foreign Sates via its home State.	
7th	Flight between foreign points	The right of a carrier from one State to carry traffic between two other States on a flight that has no point in the carrier's home State.	
8th	Consecutive cabotage	The right of a carrier from one State to carry traffic between two points in another State on a flight between both States	
9th	Cabotage	The right of a carrier from one State to carry traffic between two points in another State on a flight taking place entirely in that State	

International Transport Forum

Liberalisation of Air Transport

Summary: Policy Insights and Recommendations

Air transportation plays a pivotal role in tourism and enables trade over long distances of both time sensitive and high-value goods. It has enabled travellers and shippers to bridge large distances and has brought far away destinations much closer to home. However, air transportation is one of the most regulated industries in the world. Much of this regulation is safety-related, to mitigate the inherent risks tied with aviation. Air transportation is also subject to a body of economic regulation that can prescribe which airline flies which route, frequency, capacity, prices and even the nationality of its owners and decision makers.

In the last three decades, air transportation has made significant progress in liberating itself from some of this economic regulation. While liberalisation has brought many benefits to society, it has also raised some issues tied to fair competition, maintaining high labour standards and how to mitigate the environmental impact of this ever-growing industry.

This overview provides first insights and recommendations resulting from work carried out by the International Transport Forum's Working Group on the Liberalisation of Air Transport. The full report will follow.

International Transport Forum
2 rue André Pascal
75775 Paris Cedex 16
France
T +33 (0)1 45 24 97 10
F +33 (0)1 45 24 13 22
Email : itf.contact@oecd.org
Web: www.internationaltransportforum.org