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Competition and Regulation in the Airport Sector: the Emergence of a Pro-Competitive Regulatory Approach in Brazil

Concorrência e Regulação no Setor Aeroportuário: a Emergência de uma Abordagem Regulatória Pró-Competitiva no Brasil

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Competition and Regulation in the Airport Sector: the Emergence of a Pro-Competitive Regulatory Approach in Brazil

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To Renato and Teresa,
for all the love they gave me.

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Oh! I have slipped the surly bonds of Earth
And danced the skies on laughter-silvered wings;
Sunward I've climbed, and joined the tumbling mirth
of sun-split clouds, – and done a hundred things
You have not dreamed of – wheeled and soared and swung
High in the sunlit silence. Hov'ring there,
I've chased the shouting wind along, and flung
My eager craft through footless halls of air ....

Up, up the long, delirious, burning blue
I've topped the wind-swept heights with easy grace
Where never lark nor ever eagle flew –
And, while with silent lifting mind I've trod
The high untrespassed sanctity of space,
Put out my hand, and touched the face of God.

(MAGEE JR., John Gillespie. “High Flight”, 3 September 1941)

ABSTRACT

Over the past decades, the civil aviation industry has undergone significant changes, driven by pro-competitive reforms that aimed at addressing regulations that unduly restricted competition. These developments have fostered increased competition and provided consumers with lower prices and better products and services. While such regulatory reforms have been particularly profound in air transport, the airport sector has also experienced transformations. Indeed, airports face today growing competitive forces, being less often perceived as natural monopolies as in the past. Markets within airports have also evolved, becoming more competitive too (e.g. ground handling services). In this context, a pro-competitive regulatory approach has emerged in the airport sector worldwide in the past decades. This thesis argues that this process is in its early days in Brazil, where it still needs to be properly institutionalised, encompassing all dimensions of airport regulation. Joint and co-ordinated efforts by competition authorities and civil aviation policy makers, including the establishment of a common pro-competitive airport regulation agenda and pro-active competition enforcement and advocacy initiatives, could further embed competition policy into airport regulation. This could ensure that these two public policy areas are indeed complementary tools of state intervention that can guarantee the efficient functioning of the airport sector, enabling consumers to reap its benefits.

Keywords: competition law; sector regulation; airports; pro-competitive regulation; regulatory reform; competition enforcement; competition advocacy.

RESUMO

Nas últimas décadas, a indústria de aviação civil passou por mudanças significativas, impulsionadas por reformas pró-competitivas que visavam endereçar regulações que restringiam indevidamente a concorrência. Esses desenvolvimentos fomentaram um aumento na concorrência e proporcionaram aos consumidores preços mais baixos e melhores produtos e serviços. Ao passo que tais reformas regulatórias foram particularmente profundas no transporte aéreo, o setor aeroportuário também passou por transformações. De fato, os aeroportos enfrentam hoje crescentes forças competitivas, sendo menos frequentemente vistos como monopólios naturais. Os mercados dentro dos aeroportos também evoluíram, tornando-se mais competitivos (e.g. serviços auxiliares ao transporte aéreo). Nesse contexto, uma abordagem regulatória pró-competitiva emergiu no setor aeroportuário em todo o mundo nas últimas décadas. Esta tese sustenta que esse processo é incipiente no Brasil, onde ele ainda precisa ser devidamente institucionalizado, abrangendo todas as dimensões da regulação aeroportuária. Esforços conjuntos e coordenados por autoridades de concorrência e formuladores de políticas de aviação civil, incluindo o estabelecimento de uma agenda regulatória aeroportuária pró-competitiva comum e iniciativas proativas de aplicação e advocacia da concorrência, poderiam consolidar ainda mais a política de concorrência na regulação aeroportuária. Isso poderia garantir que essas duas áreas de políticas públicas sejam, de fato, instrumentos complementares de intervenção estatal que podem garantir o funcionamento eficiente do setor aeroportuário, permitindo que os consumidores desfrutem de seus benefícios.

Palavras-chave: direito da concorrência; regulação setorial; aeroportos; regulação pró-competitiva; reforma regulatória; aplicação do direito da concorrência; advocacia da concorrência.

RÉSUMÉ

Au cours des dernières décennies, l'industrie de l'aviation civile a connu des changements significatifs, stimulés par des réformes pro-compétitives visant à remédier aux régulations qui restreignaient indûment la concurrence. Ces évolutions ont favorisé une concurrence accrue et offert aux consommateurs des prix plus bas ainsi que des produits et services de meilleure qualité. Alors que de telles réformes de la régulation ont été particulièrement profondes dans le transport aérien, le secteur aéroportuaire a également connu des transformations. En effet, les aéroports font aujourd'hui face à des forces concurrentielles croissantes, étant moins souvent perçus comme des monopoles naturels qu'auparavant. Les marchés au sein des aéroports ont également évolué, devenant plus compétitifs (par exemple, les services d'assistance en escale). Dans ce contexte, une approche réglementaire pro-compétitive a émergé dans le secteur aéroportuaire à l'échelle mondiale au cours des dernières décennies. Cette thèse soutient que ce processus en est à ses débuts au Brésil, où il doit encore être correctement institutionnalisé, englobant toutes les dimensions de la régulation aéroportuaire. Des efforts conjoints et coordonnés entre les autorités de la concurrence et les décideurs de l'aviation civile, comprenant l'établissement d'un programme commun de régulation aéroportuaire pro-compétitive et des initiatives proactives d'application du droit de la concurrence et de promotion de la concurrence, pourraient davantage intégrer la politique de concurrence dans la régulation aéroportuaire. Cela pourrait garantir que ces deux domaines de politiques publiques sont effectivement des outils complémentaires d'intervention de l'État qui peuvent assurer le fonctionnement efficient du secteur aéroportuaire, permettant aux consommateurs de bénéficier de ses avantages.

Mots-clés : droit de la concurrence ; régulation sectorielle ; aéroports ; régulation pro-compétitive ; réforme de la régulation ; application du droit de la concurrence ; promotion de la concurrence.

RESUMO EXPANDIDO

Nas últimas décadas, a indústria de aviação civil passou por mudanças significativas, impulsionadas por reformas pró-competitivas que visavam endereçar regulações que restringiam indevidamente a concorrência. Esses desenvolvimentos fomentaram um aumento na concorrência e proporcionaram aos consumidores preços mais baixos e melhores produtos e serviços. Ao passo que tais reformas regulatórias foram particularmente profundas no transporte aéreo, o setor aeroportuário também passou por transformações. De fato, os aeroportos enfrentam hoje crescentes forças competitivas, sendo menos frequentemente vistos como monopólios naturais. Os mercados dentro dos aeroportos também evoluíram, tornando-se mais competitivos (e.g. serviços auxiliares ao transporte aéreo).

Nesse contexto, esta tese busca analisar as interações entre a regulação setorial e o direito da concorrência no setor aeroportuário, com o intuito de melhor compreender como essa relação ocorre na prática e como poderia ser aprimorada. Nesse sentido, esta pesquisa pretende desenvolver uma abordagem consistente para a regulação e a concorrência no setor aeroportuário, apoiando especialmente a institucionalização de uma abordagem regulatória pró-competitiva nos aeroportos.

Para tanto, esta tese emprega principalmente análise qualitativa, baseada no arcabouço regulatório e jurisprudencial, bem como na literatura jurídica e econômica. Embora se concentre principalmente no contexto brasileiro, o trabalho também se baseia em experiências estrangeiras de jurisdições pertinentes para as discussões em questão. Porém, esta não é uma pesquisa de direito comparado, e as perspectivas internacionais buscam contextualizar as principais questões em análise e informar potenciais direções para futuras perspectivas.

O Capítulo 1 estabelece o arcabouço teórico relacionado ao direito da concorrência e à regulação setorial. Discutem-se os objetivos do direito da concorrência e da regulação setorial, bem como as suas semelhanças e diferenças. Ademais, analisa-se a aplicação do direito da concorrência em setores regulados, descrevendo a questão da aplicação simultânea do direito da concorrência e da regulação setorial, incluindo a defesa de condutas reguladas. Também são avaliadas as estruturas institucionais para a aplicação do direito da concorrência e da regulação setorial, assim como os instrumentos de cooperação entre as autoridades de concorrência e os reguladores setoriais.

Os Capítulos 2 e 3 exploram a competição nos aeroportos, abordando respectivamente a competição entre aeroportos e a competição dentro dos aeroportos. Embora a análise dessas

duas áreas em capítulos separados seja justificada para fins acadêmicos, deve-se observar que elas se influenciam mutuamente.

O Capítulo 2 começa apresentando a economia dos aeroportos, destacando as mudanças que o setor aeroportuário sofreu nas últimas décadas, passando de um monopólio natural para um mercado competitivo, além de apresentar os principais modelos de gestão de aeroportos. Em seguida, o Capítulo discute as principais questões relacionadas à competição entre aeroportos, incluindo o escopo da concorrência entre aeroportos, a regulação econômica das tarifas aeroportuárias, a propriedade comum de aeroportos e a concorrência entre aeroportos na mesma região metropolitana. O Capítulo 3 se concentra na competição dentro dos aeroportos, abrangendo slots aeroportuários, serviços auxiliares ao transporte aéreo, fornecimento de combustível de aviação em aeroportos e serviços comerciais aeroportuários.

Ao analisar a competição nos aeroportos, os Capítulos 2 e 3 objetivam apresentar o estado atual da competição no setor aeroportuário, ilustrando como ela interage com a regulação aeroportuária.

Finalmente, o Capítulo 4 examina como a política de concorrência pode auxiliar a moldar a regulação aeroportuária. Ele demonstra que a regulação aeroportuária pode ser ainda mais incorporada à política de concorrência, tanto por meio da aplicação do direito da concorrência como através da advocacia da concorrência.

Em suma, esta tese demonstra o surgimento de uma abordagem regulatória pró-competitiva no setor aeroportuário em todo o mundo nas últimas décadas. De fato, a regulação aeroportuária tem incorporado cada vez mais a política de concorrência no seu processo de tomada de decisão, fomentando a concorrência, tanto entre como dentro dos aeroportos, levando a preços mais baixos, produtos e serviços de melhor qualidade, crescimento econômico e criação de empregos.

No entanto, essa tendência de regulações mais pró-competitivas ainda é incipiente e deve ser aprimorada e expandida para abranger todos os aspectos da regulamentação aeroportuária. Com efeito, retrocessos regulatórios recentes, como o debate sobre a limitação do tráfego num determinado aeroporto brasileiro para evitar a concorrência com outro aeroporto na mesma cidade, indicam que a abordagem regulatória pró-competitiva mencionada acima ainda não foi totalmente institucionalizada no Brasil.

Esta tese sugere que a incorporação da política de concorrência na política regulatória aeroportuária pode ser intensificada através da aplicação do direito da concorrência e da advocacia da concorrência. No âmbito do controle de concentrações e investigações de práticas

anticompetitivas, o CADE deve permanecer vigilante em relação a potenciais falhas de mercado que não são adequadamente endereçadas pela regulação setorial, seja devido à falta de regulação ou à regulação inadequada. Nesses casos, medidas regulatórias podem ser impostas para endereçar esses problemas de mercado, embora tais intervenções muitas vezes sirvam apenas como uma solução temporária até que a regulação setorial seja ajustada. Nesse contexto, o CADE deve cooperar com a ANAC e outros formuladores de políticas públicas no setor aeroportuário para evitar a invasão das competências desses últimos e garantir uma abordagem consistente.

Outrossim, se bem estruturada, a advocacia da concorrência, principalmente por meio de avaliações pró-competitivas, pode ser uma ferramenta eficaz para promover a regulação que promove a concorrência. Esses exercícios podem ser realizados pelo responsável pela elaboração ou revisão da regulação, tipicamente através de Avaliações de Impacto Regulatório e avaliações ex-post, ou por terceiros, como autoridades de concorrência ou reguladores setoriais (quando estes não são as autoridades competentes em questão), na forma de opiniões/recomendações aos formuladores de políticas públicas.

Todavia, as autoridades competentes no setor aeroportuário não realizam consistentemente avaliações pró-competitivas e, mesmo quando o fazem, as avaliações nem sempre são de boa qualidade. É necessário que os legisladores, o Ministério de Portos e Aeroportos e a ANAC implementem uma estratégia de revisão mais sistemática para garantir que a regulação aeroportuária permaneça eficaz e eficiente, sem restringir indevidamente a concorrência. Por exemplo, isso poderia ser alcançado incorporando obrigações que impõem avaliações regulares das regulações, incluindo sob o prisma da concorrência. Ademais, uma maior cooperação com o CADE e a SEAE poderia ajudar a melhorar tais exercícios, por exemplo, no que diz respeito à identificação de potenciais prejuízos à concorrência e ao desenvolvimento de alternativas regulatórias menos restritivas.

Por outro lado, na maioria das vezes, o CADE e a SEAE têm sido reativos na realização de iniciativas de advocacia da concorrência, tipicamente respondendo a reformas regulatórias em andamento. Tais agências conduziram poucos estudos de mercado e revisões setoriais por iniciativa própria, o que poderia resultar em propostas mais proativas de reformas pró-competitivas aos responsáveis setoriais. Além disso, o CADE e a SEAE possuem competências de advocacia da concorrência concorrentes, aumentando o risco de abordagens não coordenadas, por exemplo, com visões diferentes ou até mesmo conflitantes. Portanto, deveria haver mais cooperação entre o CADE e a SEAE, com uma definição mais clara e estratégica de

tarefas - e eventualmente considerando a fusão de ambos os órgãos em uma única entidade. Outrossim, tanto as autoridades setoriais quanto as autoridades de concorrência poderiam buscar com mais frequência, especialmente nos casos mais significativos ou controversos, quantificar os benefícios que podem decorrer ou já decorreram da implementação de reformas regulatórias. Complementando as avaliações qualitativas, a análise quantitativa torna as revisões de concorrência mais sofisticadas e robustas, servindo como um mecanismo persuasivo poderoso para justificar iniciativas pró-competitivas.

A introdução de investigações de mercado, permitindo que as autoridades de concorrência imponham remédios regulatórios fora do contexto do controle de concentrações e investigações de práticas anticompetitivas, como já implementado em algumas jurisdições, também poderia ser uma ferramenta eficaz para lidar com distorções da concorrência independentemente da existência de irregularidades.

Esta tese conclui que políticas regulatórias e de concorrência devem ser consideradas como dois lados da mesma moeda. Afinal, ambas são instrumentos complementares de intervenção estatal para garantir que os mercados funcionem bem e os consumidores possam se beneficiar de produtos e serviços mais baratos e melhores. Autoridades de concorrência, reguladores setoriais e outros formuladores de políticas públicas devem trabalhar conjuntamente para alcançar esse objetivo.

Assim, é necessário estabelecer uma agenda comum focada na política regulatória pró-competitiva aeroportuária no Brasil, integrando todos os stakeholders relevantes mencionados acima. Ao alavancar a experiência e os instrumentos disponíveis de cada autoridade de maneira construtiva e sinérgica, seria possível garantir que a política de concorrência seja de fato integrada à regulação dos aeroportos.

MAIN ABBREVIATIONS AND ACRONYMS

ACCC	Australian Competition and Consumer Commission
ACI	Airports Council International
AICM	*Aeropuerto Internacional de la Ciudad de México* (Mexico City International Airport)
AIFA	*Aeropuerto Internacional Felipe Ángeles* (Felipe Ángeles International Airport)
ANAC	*Agência Nacional de Aviação Civil* (Bazilian National Civil Aviation Agency)
ANP	*Agência Nacional do Petróleo, Gás Natural e Biocombustíveis* (Brazilian National Agency of Petroleum, Natural Gas and Biofuels
ASA	*Aeropuertos y Servicios Auxiliares* (Mexican Airports and Auxiliary Services)
ASAs	Air Service Agreements
BAA	British Airport Authority
BOT	Build-operate-transfer concession
BRL	Brazilian real
BWB	*Bundeswettbewerbsbehörde* (Austrian Federal Competition Authority)
CAA	United Kingdom Civil Aviation Authority
CC	United Kingdom Competition Commission
CDG	Paris/Charles de Gaulle airport
CFC	*Comisión Federal de Competencia* (Mexican Federal Competition Comission)
CMA	United Kingdom Competition and Markets Authority
COFECE	*Comisión Federal de Competencia Económica* (Mexican Federal Economic Competition Commission)
DECEA	*Departamento de Controle do Espaço Aéreo* (Brazilian Department of Airspace Control)
EC	European Commission
EU	European Union
EASA	European Union Aviation Safety Agency

EEA	European Economic Area
EUR	Euro
FAA	United States Federal Aviation Administration
JFK	New York/John F. Kennedy airport
CADE	*Conselho Administrativo de Defesa Econômica* (Brazilian Administrative Council for Economic Defence)
IATA	International Air Transport Association
ICA	*Samkeppniseftirlitið* (Icelandic Competition Authority)
ICAO	International Civil Aviation Organisation
ICN	International Competition Network
Infraero	*Empresa Brasileira de Infraestrutura Aeroportuária* (Brazilian Airport Infrastructure Company)
JUHI	Joint User Hydrant Installation
LCC	Low-cost carrier
MoU	Memorandum of Understanding
OECD	Organisation for Economic Co-operation and Development
OFT	United Kingdom Office of Fair Trading
OLG	*Oberlandesgericht* (Austrian Cartel Court)
RIA	Regulatory Impact Assessment
SEAE	*Secretaria de Advocacia da Concorrência e Competitividade* (Brazilian Secretariat of Competition Advocacy and Competitiveness)
SOE	State-owned enterprise
SRE	*Secretaria de Reformas Econômicas* (Brazilian Secretariat for Economic Reforms)
TDRs	Traffic distribution rules
TFEU	Treaty on the Functioning of the European Union
UNCTAD	United Nations Conference on Trade and Development
US	United States
USD	United States dollar
UK	United Kingdom
WASG	Worldwide Airport Slot Guidelines
WWACG	Worldwide Airport Co-ordinators Group

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INTRODUCTION

Civil aviation is a multifaceted industry, with a special role in the promotion of social development and regional integration, helping to improve the lives of people and contributing to good health and well-being. The civil aviation sector also plays a crucial role in supporting economic activity across the world. Indeed, aviation is the only rapid worldwide transportation network and is a driver of economic progress by promoting economic growth, creating jobs and facilitating international trade and tourism.[1]

In recent decades, the civil aviation sector has undergone continuous liberalisation and deregulation reforms, increasing the room for competition. These changes have had an overall positive impact on air transport connectivity, traffic growth and the economy at large, despite being subject to a series of crises, exogenous shocks and financial difficulties. For instance, the Covid-19 pandemic disrupted the civil aviation industry at an unprecedented level, but the sector is demonstrating resilience and approaching to the pre-crisis level.[2]

In this context, civil aviation is one of the most global industries, connecting people, cultures and business worldwide. In 2019, every day there were nearly 12.5 million passengers, 128 000 scheduled flights and USD 18 billion worth of goods carried.[3]

Also, the economic impact of the civil aviation industry (i.e. direct, indirect, induced and tourism catalytic) was around USD 3.5 trillion, accounting for 4.1% of world gross

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[1] IHLG. *Aviation Benefits Report: 2019*. 2019. Available at: https://www.icao.int/sustainability/Documents/AVIATION-BENEFITS-2019-web.pdf. pp. 24-33; ATAG. *Aviation - Benefits beyond borders*. Geneva: Air Transport Action Group, 2020. Available at: https://aviationbenefits.org/downloads/aviation-benefits-beyond-borders-2020/. pp. 19-33.

[2] ICAO. *Overview of Regulatory and Industry Developments in International Air Transport*. Montreal: ICAO, 2022. Available at: https://www.icao.int/Meetings/a41/Documents/Overview_of_Regulatory_and_Industry_Developments_in_International_Air_Transport.pdf. p. 2-1. ICAO forecasted that air passenger demand would finally recover pre-pandemic levels on most routes in 2023, with an estimated growth of around 3% compared to 2019 numbers by the end of 2023 (ICAO. *ICAO forecasts complete and sustainable recovery and growth of air passenger demand in 2023*. ICAO, 8 February 2023. Available at: https://www.icao.int/Newsroom/Pages/ICAO-forecasts-complete-and-sustainable-recovery-and-growth-of-air-passenger-demand-in-2023.aspx). In Brazil, in May 2023, for the first time after the outbreak of the pandemic, the number of domestic passengers was higher (7%) than in the same period in 2019. International traffic is still recovering and the number of passengers in November 2023 represented 98% of the traffic in November 2019. Furthermore, for the first time since 2019, air passenger traffic reached 100 million in November 2023 (ANAC. Brasil transporta 7,3 milhões de passageiros em maio, recorde para o mês desde 2015. *ANAC*, 23 June 2023. Available at: https://www.gov.br/anac/pt-br/noticias/2023/brasil-transporta-7-3-milhoes-de-passageiros-em-maio-recorde-para-o-mes-desde-2015; ANAC. Movimentação de passageiros na aviação civil brasileira supera os 100 milhões pela primeira vez desde 2019. *ANAC*, 22 December 2023. Available at: https://www.gov.br/anac/pt-br/noticias/2023/movimentacao-de-passageiros-na-aviacao-civil-brasileira-supera-os-100-milhoes-pela-primeira-vez-desde-2019).

[3] IHLG. *op. cit.* p. 13; ATAG. *op. cit.* p. 14.

domestic product (GDP).[4] In addition, the global civil aviation industry supported 87.7 million jobs worldwide, among which 648 000 were employed by airport operators (including operations, planning, engineering and security) and 5.5 million by other on-airport activities (e.g. retail, car rental, freight forwarders and government agencies such as customs and immigration).[5] In Brazil, civil aviation accounted for BRL 103.4 billion (i.e. 1.4% of the Brazilian GDP) in 2019. The industry also supported around 1.5 million jobs,[6] among which 44 600 related to airport activities.[7]

The airport[8] sector is part of the civil aviation industry, involving a complex operation, with different activities and market players. Airports provide the necessary infrastructure for achieving connectivity and the economic and social functions of air transport. Each airport features one or more runways (the heart of the airport), a set of aprons and taxiways, as well as one or more passenger and cargo terminals, which combined develop specific activities that allow the movement of persons and goods worldwide.[9] In 2019, there were 3 780 commercial airports globally providing scheduled commercial flights (around 120 of them in Brazil). It was also estimated there were 41 764 airports and airfields worldwide, including military and general aviation airports.[10]

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[4] These figures would be considerably higher if other economic benefits of civil aviation were taken into account, such as the economic activity and jobs that exist only because of air travel, domestic tourism and trade (ATAG. *op. cit*. p. 10).

[5] ATAG. *op. cit*. p. 10. On average, aviation jobs are 4.3 times more productive than other jobs. Aviation also makes jobs in other sectors more productive, as it opens markets and enable knowledge transfer and other catalytic effects (ATAG. *op. cit.* p. 11).

[6] ABEAR. *Panorama 2020: O setor aéreo em dados e análises.* 2020. Available at: https://aviationbenefits.org/media/167517/aw-oct-final-atag_abbb-2020-publication-digital.pdf. p. 8.

[7] OECD. *OECD Competition Assessment Reviews: Brazil, OECD Competition Assessment Reviews*. Paris: OECD Publishing, 2022. Available at: https://www.oecd.org/publications/oecd-competition-assessment-reviews-brazil-d1694e46-en.htm. p. 35.

[8] It should be noted that airports are sometimes referred to as aerodromes, which according to the International Civil Aviation Organization (ICAO) are "a defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft" (ICAO. *Annex 14 to the Convention on International Civil Aviation, Aerodromes, Volume I – Aerodrome Design and Operations.* Montreal: ICAO, 2022. Available at: https://store.icao.int/en/annex-14-aerodromes. p. 1-2.). In general, an airport is categorised as a specific type of aerodrome with a given stature. While the use of the term "aerodrome" is becoming increasingly rare, it is still in use in certain jurisdictions, including in Brazil. Article 31 of the Brazilian Aeronautical Code (Law No. 7.565/1986) defines an airport as a public aerodrome equipped with installations and facilities to support aircraft operations, as well as boarding and disembarking of passengers and cargo.

[9] BETANCOR, Ofelia; RENDEIRO, Roberto. *Regulating Privatized Infrastructures and Airport Services*. Policy Research Working Paper, World Bank Group, 1999. Available at: https://elibrary.worldbank.org/doi/abs/10.1596/1813-9450-2180. p. 1.

[10] ATAG. *op. cit.* p. 11; OECD. *OECD Competition Assessment Reviews: Brazil.* p. 53; MINISTÉRIO DA INFRAESTRUTURA; EMPRESA DE PLANEJAMENTO E LOGÍSTICA. *Plano Nacional de Logística: PNL 2035*. 2021. Available at: https://ontl.epl.gov.br/wp-content/uploads/2021/10/PNL_2035_29-10-21.pdf.

Airport activities comprise aeronautical and non-aeronautical services.[11] More specifically, aeronautical services include two different group of activities, which are provided to airlines and other aircraft operators: essential operational services and ground handling services, both focusing on the operation of aircraft and the movement of passengers and freight.[12]

Essential operational services constitute the core business of an airport and encompass activities such as access to runways for take-off and landing, access to aprons and taxiways, as well as the use of terminal facilities. These services are typically directly provided by the airport operator.[13]

Ground handling are the "services necessary for an aircraft's arrival at, and departure from, an airport, other than air traffic services",[14] such as passenger and baggage handling, aircraft maintenance and catering services. These services can be provided directly be the airport operator, by airlines or by third-party companies – the latter being the most common model worldwide.[15]

Non-aeronautical services refer to a wide range of activities that may be provided at the terminal or around the airport to passengers and other customers (e.g. local business communities). These services include, for example, duty-free shops and other retail shopping, restaurants and bars, car parks, hotels and conference facilities. Although a few of these services can sometimes be directly provided by the airport operator (e.g. car parks), most of them are performed by third parties, typically under commercial concession contracts.[16]

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[11] As defined by the United Nations Department of Economic and Social Affairs' International Standard Industrial Classification of All Economic Activities – ISIC (UN DESA. *International Standard Industrial Classification of All Economic Activities (ISIC), Rev.4*. New York: United Nations, 2008. Available at: https://unstats.un.org/unsd/publication/seriesm/seriesm_4rev4e.pdf). This classification was adopted by ICAO Council in 2010 (ICAO. *Aviation Satellite Account - Recommended Methodological Framework Draft*. Montreal: ICAO, 2019. Available at: https://www.icao.int/sustainability/Satellite/Documents/Draft%20Aviation%20Satellite%20Account%20Methodological%20Framework.pdf).

[12] BETANCOR, Ofelia; RENDEIRO, Roberto. *op. cit.* pp. 1-3.

[13] *Ibid.* p. 1; OECD. *OECD Competition Assessment Reviews: Brazil.* p. 65.

[14] ICAO. *Annex 6 to the Convention on International Civil Aviation, Operation of Aircraft, Part I – International Commercial Air Transport – Aeroplanes.* Montreal: ICAO, 2022. Available at: https://store.icao.int/en/annex-6-operation-of-aircraft-part-i-international-commercial-air-transport-aeroplanes. p. 1-6.

[15] ICAO. *Manual on Ground Handling, Doc 10121*. Montreal: ICAO, 2019. Available at: https://store.icao.int/en/manual-on-ground-handling-doc-10121. pp. 1-4, App B-1-App B-3. In Brazil, ground-handling services also include activities related to aviation security (e.g. screening of passengers, aircrew and baggage; searching and checking aircraft; protection of aircraft; access control to security restricted areas; and security controls of cargo) and air freight forwarding (Annex to Resolution ANAC No. 116/2009).

[16] BETANCOR, Ofelia; RENDEIRO, Roberto. *op. cit.* pp. 1-3; OECD. *OECD Competition Assessment Reviews: Brazil.* pp. 65, 69. Nevertheless, this classification is not perfect and there may be grey areas where the distinctions between aeronautical and non-aeronautical services become blurred. For example, concessions related to aircraft or traffic handling (e.g. rentals of hangars and other airport operational areas to airlines or ground handling service providers) share characteristics of both aeronautical and non-aeronautical services.

The airport sector has significantly changed in the last decades. While in the past airports were considered natural monopolies – and therefore seen as passive service providers –, since the late 1980s they have been increasingly subject to competitive forces, being more commercially focused. In this context, airports have competing with other airports, at least in some markets, to attract airlines, passengers and other service providers (e.g. ground handling suppliers and businesses providing commercial services). Competition within airports has also increased substantially, for instance as regarding access to airport slots and ground handling services. Although airport regulation has been subject to reforms, these changes were more limited than those observed in other activities in the civil aviation industry.

Regulation is an important tool to address market failures and to achieve other relevant non-economic objectives, such as safety, security and environmental protection. In particular, civil aviation regulation is primarily founded on internationally accepted standards,[17] promoted by the International Civil Aviation Organisation (ICAO), and implemented domestically by national civil aviation regulators, with the aim of ensuring safety and security, two top priorities of the industry.[18] Thus, civil aviation (including airports) is highly regulated,[19] leading to significant entry barriers and making operation complex and expensive.[20] While most civil aviation regulation is technical, it also involves economic elements, seeking to ensure the efficient operation of civil aviation activities within a market economy.[21] Nevertheless, regulation often unduly hampers competition, in circumstances where less restrictive alternatives can be implemented to achieve the legitimate public objectives intended by the

[17] The Convention on International Civil Aviation (also known as the Chicago Convention) is the central international agreement in the area of civil aviation, providing States with the legal and operational framework to create and sustain a civil aviation safety and security system (ICAO. *ICAO Secretariat Study on the Safety and Security Aspects of Economic Liberalization*. Presented to the Council on 1 June 2005. Available at: https://www.icao.int/sustainability/Documents/SafetySecurityStudy_en.pdf. p. 5). For instance, Annex 14 to the Chicago Convention covers airports, with a volume on aerodrome design and operations (ICAO. *Annex 14 to the Convention on International Civil Aviation, Aerodromes, Volume I – Aerodrome Design and Operations. op. cit.*).

[18] ICAO. *Convention on International Civil Aviation*. Doc. 7300/9, Ninth Edition, 2006. Available at: https://www.icao.int/publications/Documents/7300_cons.pdf.

[19] For example, according to the 2022 OECD Services Trade Restrictiveness Index (STRI), which measures the level of regulatory restrictions (e.g. barriers to competition) affecting trade in services in 22 sectors across 50 jurisdictions, air transport services were the most restrictive sector on average. In the STRI, air transport services comprise passenger and freight air transport, carried domestically or internationally, covering commercial establishment only. Brazil was ranked as the third least restrictive jurisdiction in the air transport services, after Chile and the United Kingdom (OECD. *OECD Services Trade Restrictiveness Index: Policy trends up to 2023*. Paris: OECD Publishing, 2023. Available at: https://www.oecd.org/trade/topics/services-trade/. p. 5).

[20] ILO. *Towards a Green, Sustainable and Inclusive Recovery for the Civil Aviation Sector*. Report for the Technical Meeting on a Green, Sustainable and Inclusive Economic Recovery for the Civil Aviation Sector, Geneva, 24-28 April 2023. Available at: https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---sector/documents/publication/wcms_873059.pdf. p. 9. According to this document, for example, compliance with regulatory security requirements accounts for around 35% of the operating costs of an airport.

[21] IHLG. *op. cit.* p. 14.

regulation at stake. This suggests that there is commonly room for increasing competition in regulated sectors, including the airport sector.

Two recent examples in Brazil illustrate that airport regulation can unnecessarily limit competition, suggesting that further pro-competitive reforms can be implemented. First, in 2019 a discussion emerged after an airline exited the market, regarding the reallocation of its slots at São Paulo/Congonhas airport, the most congested Brazilian airport. The market power of the incumbent airlines would have further increased had the regulation then in force been followed. Nonetheless, the policy maker decided to adopt a more flexible approach that amounted to a more competitive distribution of the slots. Second, in 2023 the Brazilian government decided to limit the number of transported passengers and restrict operations at Rio de Janeiro/Santos Dumont airport to specific destinations, in order to prevent competition against Rio de Janeiro/Galeão airport. While the second restriction was ultimately withdrawn, the maximum traffic at Rio de Janeiro/Santos Dumont airport was established at a level below its technical capacity, with the goal of concentrating the traffic at Rio de Janeiro/Galeão.

Against this background, this thesis aims at analysing the interactions between sector regulation and competition law in the airport sector,[22] in order to better understand how this relationship occurs in practice and how it could be improved. In this context, this research intends to develop a consistent approach to regulation and competition in the airport sector, particularly supporting the institutionalisation of an airport pro-competitive regulatory approach.

While the existing literature on regulation and competition in the civil aviation industry focuses mainly on air transport, studies on airport competition have emerged in recent years, delving into the changes the airport industry has undergone and discussing whether and to what extent airports compete among themselves. There are also several papers on specific topics related to competition within airports, such as airport slots and ground handling services. However, there is no structured and broad-based research on the interactions between regulation

[22] This thesis will not address the other civil aviation activities, even though they may influence the competitive environment of airports. Therefore, the following activities are outside the scope of this research: commercial air transport services (air transport services available to the general public for the transportation of passengers, mail and/or freight for remuneration, including scheduled and non-scheduled air transport), general aviation (all civil aviation operations other than scheduled and non-scheduled commercial air transport operations, such as non-commercial business aviation and instructional flying) and air navigation services (provided to air traffic during all phases of aircraft operations, e.g. air traffic management and meteorological services) (UN DESA. *op. cit*.; ICAO. *Aviation Satellite Account - Recommended Methodological Framework Draft).* It should be noted that although air navigation services are provided at the airport, they are not technically considered airport services. While in some jurisdictions the airport operator can also provide air navigation services, more often they are performed by a third party, usually a public-owned body – even though there are a few jurisdictions where these services have been privatised.

and competition in the sector, particularly from the perspective of a pro-competitive airport regulation. As mentioned above, this is crucial in the context of an emerging pro-competitive regulatory approach that needs to be consolidated and lead to further reforms, which will ultimately help to develop the civil aviation sector, with several economic and social benefits.

To address these issues, this research primarily employs qualitative analysis, drawing from the regulatory framework and caselaw, as well as legal and economic literature. While this thesis focuses primarily on the Brazilian context, it also builds on foreign experiences from pertinent jurisdictions for the discussions in question. However, it should be noted that this is not a comparative law research, and the international perspectives aim at contextualising the main issues under analysis and inform potential avenues for future perspectives.

This thesis is structured as follows. Chapter 1 sets out the theoretical framework concerning competition law and sector regulation. It starts by discussing the objectives of competition law and sector regulation, as well as their similarities and differences. Then, competition enforcement in regulated sectors is analysed, describing the issue of concurrent application of competition law and sector regulation, including the regulated conduct defence. The following sections focus on the institutional set-ups for applying competition law and sector regulation, and the tools for co-operation between competition authorities and sector regulators.

Chapters 2 and 3 delve into airport competition, regarding competition between airports and competition within airports, respectively. While the analysis of these two areas in separate chapters is justified for academic purposes, it should be noted that they mutually influence each other.[23] Chapter 2 first sets out the economics of airports, highlighting the changes the airport sector has undergone in recent decades, from a natural monopoly to a competitive market, as well as presenting the main airport management models. Then, the main issues related to competition between airports are discussed, including the scope of competition between airports, economic regulation of airport charges, common ownership of airports and competition between airports in the same metropolitan area. In turn, Chapter 3 focuses on competition within airports, covering airport slots, ground handling services, on-airport jet fuel supply and airport commercial services. By disentangling airport competition, Chapters 2 and

[23] For example, increased competition within an airport (e.g. as regards ground handling services) enhances its overall competitiveness vis-à-vis its competing airports, by offering better and more affordable services and therefore attracting more airlines and passengers. Similarly, at airports facing competition, services within the airport are likely to be more competitive.

3 intend to present the state of play of competition in the airport sector, illustrating how it interacts with airport regulation.

Chapter 4 examines how competition policy can help to shape airport regulation. It shows that airport regulation can be further embedded into competition policy, through both competition law enforcement and competition advocacy. With regard to competition law enforcement, the chapter demonstrates that competition authorities can advance more pro-competitive regulation through remedies imposed within merger control and anti-competitive behaviour investigations. In addition, it discusses how joint and co-ordinated efforts of competition authorities, civil aviation regulators and other relevant policy makers in advocating for pro-competitive airport regulation can result in enhanced competition in the airport sector.

Finally, the main conclusions of this thesis are presented, highlighting the need for institutionalising a pro-competitive regulatory approach in the airport sector in Brazil.

1. COMPETITION AND REGULATION

This chapter provides an overview of competition and regulation as background for the specific analysis of the airport sector. It covers the general objectives of competition law and sector regulation, as well as how they interrelate with each other.

1.1 General objectives

Even the neoclassical economic theory, which defends that the state should remain absent from the economy,[24] recognises that sometimes the market does not work well when left to its own devices, therefore requiring a corrective intervention. Under this context, competition law and sector regulation are two instruments for state market supervision, aiming at securing a better outcome for society. [25]

Indeed, the existence of market failures (or market absences, where no effective market exists) requires a state corrective action, which can be achieved by competition law and/or regulatory instruments.[26] According to the economic literature, market failures occur when a market left on its own fails to produce an efficient allocation of resources.[27] Examples of market failures include the existence of market power (especially in case of monopolies), public goods, externalities, asymmetric or imperfect information, moral hazards, factor immobility and the lack of clear property rights.[28]

However, the mere existence of a market failure does not necessarily require a state intervention. In fact, a collective action should only be needed if a market failure cannot be addressed effectively by private law. Nonetheless, in case of private law failures, a regulatory solution may still not be required since private law may not be more successful in addressing the inefficiencies than the market itself. At the same time, the efficiency gains that a regulatory

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[24] It should be noted, however, that the concept of free markets is a myth, since all markets depend on law to exist (e.g. the notion of private property and contract). Accordingly, Cass Sunstein refers to the myth of laissez-faire, indicating that "markets should be understood as a legal construct (…) rather than as a part of nature and the natural order" (SUNSTEIN, Cass R. *Free Markets and Social Justice*. Oxford: Oxford University Press, 1997. p. 5).
[25] DUNNE, Niamh. *Competition Law and Economic Regulation: Making and Managing Markets*. Cambridge: Cambridge University Press, 2015. p. 3.
[26] *Ibid*. p. 6.
[27] MANKIW, N. Gregory. *Principles of Economics*. Boston: Cengage Learning, 2018. p. 12.
[28] DUNNE, Niamh. *op. cit*. pp. 8-9; at, OECD. *Independent Sector Regulators*, *OECD Competition Policy Roundtable Background Paper*. Paris: OECD Publishing. 2019. Available at https://one.oecd.org/document/DAF/COMP/WP2(2019)3/en/pdf. p. 27.

solution produce may be outweighed by increased transaction costs or misallocations created in other sectors of the economy.[29]

State interventions may also achieve public policy objectives that go beyond the fixing of market failures, which are usually linked to economic reasons. For instance, regulatory actions may address non-economic rationales related to distributional justice and fairness, as well as health, safety and environmental quality.[30-31]

In this regard, to control market behaviour and address market failures or achieve other public policy objectives, the state can implement regulatory policy mechanisms, which prohibit or require certain market practices. Competition law and sector regulation are two possible instruments to do so.[32]

Although competition law and sector regulation intend to make market works better to the benefit of consumers, they pursue distinct objectives, use different tools and affect different aspects of business conduct.[33]

Competition law is a mechanism of market supervision that aims to prevent anti-competitive accumulation of market power and to control its exercise, in order to fully realise the typical benefits of competition – i.e. lower prices, greater choice, higher quality and innovation.[34]

In general, competition laws provide two main prohibition tools. First, prohibition of anti-competitive practices:[35] (a) collusion between two or more companies (including cartels) and (b) abuse of dominant firms (exploitative or exclusionary unilateral conducts). Second,

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[29] OGUS, Anthony. Regulation: Legal Form and Economic Theory. Oxford and Portland: Hart Publishing, 2004. pp. 29-30.

[30] DUNNE, Niamh. *op. cit*. p. 9; OGUS, Anthony. op. cit. pp. 46-54; OECD. *Competition Assessment Toolkit - Volume 2: Guidance*. Paris: OECD Publishing, 2019. Available at: https://www.oecd.org/daf/competition/45544507.pdf. p. 7.

[31] It should be noted that some authors consider that in essence these non-economic rationales are only reformulations of the concept of market failure. Tirole, for instance, classify market failures into six categories, comprising both economic and non-economic goals: (i) the exchange can affect third parties, who are, by definition, not consenting; (ii) the exchange may not take place with full knowledge and consent; (iii) buyers can become victims of their own actions; (iv) implementing the exchange may exceed the individual's capacities; (v) businesses can have market power; and (iv) although the market improves efficiency, there is no reason it will deliver equity (TIROLE, Jean. *Economics for the Common Good*. Princeton and Oxford: Princeton University Press, 2017. pp. 154-160). Other authors propose a broader definition of dysfunctional markets, such as market "defects", to encompass both economic and non-economic goals of regulation (BREYER, Stephen G. *Regulation and Its Reform*. Cambridge: Harvard University Press, 1982).

[32] DUNNE, Niamh. *op. cit*. pp. 9-10.

[33] OECD. *The Regulated Conduct Defence, OECD Competition Policy Roundtable Background Paper*. Paris: OECD Publishing, 2011. Available at: https://www.oecd.org/daf/competition/mergers/48606639.pdf. p. 25.

[34] DUNNE, Niamh. *op. cit*. pp. 14, 18.

[35] Also called "antitrust" in the EU competition law. In the United States and Brazil, "antitrust" has a broader sense, being synonym of "competition law" (i.e. comprising both anti-competitive practices and merger control). This thesis will use the term "antitrust" in the latter sense.

prohibition of mergers that have a substantial detriment effect on competition (merger control).[36]

Beyond these enforcement activities, which correspond to the main focus of competition law in most jurisdictions, an additional and complementary advisory tool has been increasingly adopted by jurisdictions: competition advocacy. This refers to the activities conducted by competition authorities "related to the promotion of a competitive environment for economic activities by means of non-enforcement mechanisms, mainly through its relationships with other governmental entities and by increasing public awareness of the benefits of competition".[37]

Over the last decades, competition law has been spreading over the world, and today more than 125 jurisdictions have a competition law regime, most of them also having an active competition enforcement authority. This led to a proliferation of investigations, decisions and advocacy initiative worldwide.[38]

In spite of specific differences among national regimes, there has been an overall substance convergence of competition laws, especially as regards merger control and cartels. Indeed, today, most competition laws use comparable tools and principles, and competition authorities speak a similar economic and legal language.[39-40-41]

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[36] DUNNE, Niamh. *op. cit*. pp. 18-19; OECD. *The Regulated Conduct Defence*. p. 22.

[37] ICN. *Advocacy and Competition Policy, Report prepared by the Advocacy Working Group, ICN's Conference*. Naples: ICN, 2002. Available at: https://www.internationalcompetitionnetwork.org/wp-content/uploads/2018/09/AWG_AdvocacyReport2002.pdf. p. 25.

[38] OECD. *OECD Competition Trends 2020*. Paris: OECD Publishing, 2020. Available at: https://www.oecd.org/daf/competition/OECD-Competition-Trends-2020.pdf. p. 3.

[39] CAPOBIANCO, Antonio; DAVIES, John; ENNIS, Sean F. *Implications of Globalisation for Competition Policy: The Need for International Cooperation in Merger and Cartel Enforcement*. Geneva: ICTSD/WEF, 2015. Available at: http://e15initiative.org/publications/implications-of-globalisation-for-competition-policy-the-need-for-international-cooperation-in-merger-and-cartel-enforcement/.

[40] The work of international organisations (such as the OECD and UNCTAD) or fora (such as the ICN) has contributed to this outcome, through soft convergence (FOX, Eleanor M. Antitrust Without Borders: From Roots to Codes to Networks. GUZMAN, Andrew T. (ed.). *Cooperation, Comity, and Competition Policy*. New York: Oxford University Press, 2011). See, for instance, the following OECD recommendations that reflect the substantial convergence on mergers and cartels: OECD. *Recommendation of the Council on Merger Review*. 2005. Available at: https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0333; OECD. *Recommendation of the Council concerning Effective Action against Hard Core Cartels*. 2019. Available at: https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0452.

[41] It should be noted, nevertheless, that competition law has been given different goals over time and throughout jurisdictions. For instance, the Harvard School (industry structure and performance); Chicago School (economic efficiency); Freiburg School or Ordoliberalism (economic freedom); Post-Chicago approaches (game theory and behavioural economics); Hipster or Neo-Brandeis movement (proposing additional goals to competition law, such as labour, privacy, innovation, environment, democracy, protection of small businesses and reduction of poverty) (SALOMÃO FILHO, Calixto. *Direito Concorrencial*. São Paulo: Malheiros, 2013; FRAZÃO, Ana. *Direito da Concorrência: Pressupostos e Perspectivas*. São Paulo: Saraiva, 2017; CASTRO, Bruno Braz. *A Que(m) serve o antitruste: eficiência e rivalidade na política concorrencial de países em desenvolvimento*. São Paulo: Singular, 2019). These different approaches are relevant since the broad language of competition law requires an

On the other hand, although the notion of regulation can be significantly broad, the term is used in this thesis to refer more specifically to sector-specific regulation or sector regulation, which is the instance of regulation that is likely to overlap with competition law.[42] In this sense, sector regulation intends to regulate specific economic sectors (e.g. public utilities), addressing it by controlling entry and prices, establishing quality and conditions of service, as well as setting universal service obligations.[43] In other words, sector regulation imposes public constraints on business behaviour to address market failures.[44]

Sector regulation involves three different categories: technical regulation (determination of standards, relating to issues of safety, environment and privacy), economic regulation (pricing issues and standard marketing practices) and access regulation (ensuring non-discriminatory access to necessary inputs).[45]

Even though sector regulation and independent sector regulators exist for more than a century (e.g. the US Interstate Commerce Commission, created in 1887[46]), their importance became prominent since the end of the 1980s, when a process of massive privatisation, liberalisation and deregulation has boomed throughout the world,[47] including in Brazil.

In fact, many jurisdictions implemented programmes of privatising state-owned assets, especially network utilities, which led to the need for some kind of regulatory supervision over the activities, since many of these industries retained their natural monopoly characteristics. At the same time, many markets were opened to competition, and there was a change in the traditional forms of regulation, which were replaced by less intrusive means. Also, there was a shift in the role of the state: rather than direct service provider, it became a regulator (the so-called rise of the regulatory state). Thus, there was a separation of public policy making functions from operation or service delivery functions. In this context, many states created independent regulatory agencies, established by statute and endowed with statutory powers,

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interpretative exercise in light of what is understood by its policy objectives in order to determine the anti-competitive practices (DUNNE, Niamh. *op. cit*. pp. 26 ff.).

[42] DUNNE, Niamh. *op. cit*. pp. 33-34.

[43] KAHN, Alfred E. *The Economics of Regulation: Principles and Institutions, Volume 1 - Economic Principles*. New York: John Wiley & Sons, 1970. p. 3.

[44] OECD. C*ompetition Enforcement and Regulatory Alternatives, OECD Competition Committee Discussion Paper*. Paris: OECD Publishing, 2021. Available at: https://www.oecd.org/daf/competition/competition-enforcement-and-regulatory-alternatives-2021.pdf. p. 4.

[45] DABBAH, Maher M. The Relationship between Competition Authorities and Sector Regulators. *Cambridge Law Journal*, v. 70, n. 1, 2011. Available at: https://doi.org/10.1017/S0008197311000195. pp. 114-115.

[46] To a historical analysis of the creation of regulatory agencies and their evolution, see MCCRAW, Thomas K. *Prophets of Regulation: Charles Francis Adams, Louis D. Brandeis, James M. Landis and Alfred E. Kahn*. Cambridge: The Belknap Press of Harvard University Press, 1984.

[47] TAPIA, Javier; MANTZARI, Despoina. The regulation/competition interaction. In LIANOS, Ioannis; GERADIN, Damien (ed.). *Handbook on European Competition Law: Substantive Aspects*. Cheltenham: Edward Elgar, 2013. p. 590.

operating at arm's length from the government in order to insulate them from the influence of national governments.[48]

1.2 Differences and complementarities

Despite the fact that the precise differentiation of competition law and sector regulation can often be fluid and elusive, the literature usually provides a set of elements that differentiates both instruments. First, as for the scope of application, there is a generalised vs. specialised divergence: while competition law generally applies economy-wide (unless a sector is expressly or impliedly exempted), sector regulation applies in a sector-by-sector basis, usually to address identified and discrete failures within particular markets (typically network industries or natural monopolies). As a consequence, sector regulators tend to hold more technical market expertise and institutional resources relating to the sectors under supervision, while competition authorities have specialist expertise in competition law and economics.[49]

A second difference commonly highlighted concerns the temporal nature of enforcement. On the one hand, sector regulation is inherently *ex ante* or prospective in its approach, as it aims to establish a structural framework to prevent market failures from occurring. On the other hand, competition law is largely *ex post* or retrospective (with the exception of merger control), since it is used once competition problems arise or anti-competitive behaviours are identified. Therefore, the former would be more pro-active while the latter more reactive.[50-51]

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[48] YEUNG, Karen. The Regulatory State. In BALDWIN, Robert; CAVE, Martin; LODGE, Martin (ed.). *The Oxford Handbook of Regulation*. Oxford: Oxford University Press, 2010. pp. 65-66; ARANHA, Márcio Iório. *Manual de Direito Regulatório*. London: Laccademia Publishing, 2018. pp. 135-136; TAPIA, Javier; MANTZARI, Despoina. *op. cit*. p. 590.

[49] OECD. *Key points of the Roundtables on Changes in Institutional Design*, Summary Record: Annex to the Summary Record of the 123rd meeting of the Competition Committee held on 15-19 June 2015. Paris: OECD Publishing, 2016. Available at: https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP/M(2015)1/ANN9/FINAL&docLanguage=En. p. 4; DUNNE, Niamh. *op. cit*. p. 43.

[50] DUNNE, Niamh. *op. cit*. pp. 43-44; DABBAH, Maher M. *op. cit*. p. 115; FELS, Allan; ERGAS, Henry. *Institutional Design of Competition Authorities, Note for the OECD Roundtable on Changes in Institutional Design of Competition Authorities*. Paris: OECD Publishing, 2014. Available at: https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP/WD(2014)85&doclanguage=en. p. 24.

[51] Although this difference can help to better understand the instruments analysed in this thesis, it may be contested for several reasons. For example, it can be argued that competition authorities have instruments to stop anti-competitive behaviour before it produces negative effects on the market, such as interim measures, leniency agreements and commitment decisions, as well as the application of the essential facilities doctrine (CHONÉ, Philippe. Droit de la concurrence et régulation sectorielle : Entre ex ante et ex post. In FRISON-ROCHE, Marie-Anne (ed.). *Les engagements dans les systèmes de régulation, Série Droit et économie de la régulation, vol. 4*. Paris: Presses de Sciences Po/Dalloz, 2006). Furthermore, sector regulation may provide *ex-post* instruments,

As for the nature of the legal obligations imposed, competition law tells market players what not to do, proscribing certain broad categories of anti-competitive exercise of market power (negative obligations) and otherwise allowing the market mechanism to function unhindered. Conversely, sector regulation tells market players what they should do, i.e. it prescribes how the market should function to facilitate or establish competition (positive obligations), bypassing the market mechanism entirely.[52] In addition, while negative obligations established by competition law are broadly and somewhat imprecise, regulatory positive obligations are more precise and detailed.[53]

Finally, competition law is believed to be a more dynamic tool, as it rests upon the market to solve its defects. Sector regulation is more static, setting a concrete solution to defined market problems. In this sense, sector regulation would be more inflexible and less adaptable to market changes than competition law, struggling to promote innovation.[54]

Although these differences between competition law and sector regulation can, to some extent, become blurred, they reflect the traditional view of competition law and sector regulation as two separate, opposed market mechanisms. According to this notion, competition law operates within the market system and sector regulation outside it. While competition law reinforces the market system, sector regulation overreaches it. Hence, a sector would be either regulated or unregulated; the less the state intervenes in a given industry, the more room for competition.[55]

Under this perspective, competition law would be a better alternative to sector regulation. While competition law is general and residual in nature – and therefore the default mechanism of market activities –, sector regulation is specific and is applicable only in the cases in which the state deliberately decides to remove a given activity or sector from the purview of the market mechanism.[56]

In practice, this view is unrealistic, since many competitive sectors are also subject to some degree of sector regulation,[57] but it can help to explain why regulation effectively replaces

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especially considering light-touch approaches based on monitoring of market behaviour and implementation of command-and-control regulation in case of abuse.

[52] Again, this difference has also been challenged, since competition law is becoming more prescriptive, as further discussed in Chapter 4 (DUNNE, Niamh. *op. cit.*).

[53] DUNNE, Niamh. *op. cit.* pp. 45-46; FELS, Allan; ERGAS, Henry. *op. cit.* p. 24; DABBAH, Maher M. *op. cit.* p. 115.

[54] DUNNE, Niamh. *op. cit*. pp. 46-47.

[55] *Ibid*. pp. 99 ff.; OGUS, Anthony. op. cit. p. 30; TAPIA, Javier; MANTZARI, Despoina. *op. cit*. pp. 588 ff.

[56] OECD. C*ompetition Enforcement and Regulatory Alternatives.* p. 11; DUNNE, Niamh. *op. cit*. p. 52.

[57] DUNNE, Niamh. *op. cit*. p. 53.

and displaces competition law in some instances or in specific activities within a sector.[58] Indeed, in some circumstances, sector regulation displaces competition law (see section 1.3), as regulators typically have more technical expertise in their respective sector; can provide greater business certainty than competition law, potentially incentivising investment; tend to be faster than competition authorities; can address more topics than competition authorities; and may be better placed to develop and manage price regulation and other standardisation schemes.[59]

This view that competition law and sector regulation are opposed market mechanisms has been challenged by the abovementioned process of privatisation, liberalisation and deregulation that took place since the end of the 1980s in several jurisdictions and sectors. In fact, this movement has changed both structures and legal framework of regulated markets in different countries. Yet, many industries remained regulated, although in a different way (i.e. more decentralised and less intrusive). It was recognised that markets are not the antithesis of regulation (i.e. competition and regulation are not mutually exclusive), and therefore sector regulation and competition law could be seen as complements that can coexist together, at least most of the time.[60]

Sector regulation can be then understood as an instrument that creates and maintains a balance between competition and principles other than competition in a given economic sector which could not establish these principles relying only on competition law. That is, a specific industry opened to competition but not left to it alone.[61] Under this view, to ensure that markets function well it may be necessary to combine timely, targeted competition enforcement and smart, realistic *ex-ante* regulation.[62]

Competition law and sector regulation are therefore understood as different aspects or intensities of state intervention (i.e. derogation from the market mechanism), seeking to address market failures and oversee the economy. Essentially, they have the same substance, differing

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[58] OECD. C*ompetition Enforcement and Regulatory Alternatives.* pp. 11-12.
[59] OECD. *Independent Sector Regulators.* p. 7.
[60] TAPIA, Javier; MANTZARI, Despoina. op. cit. pp. 588-589; OECD. C*ompetition Enforcement and Regulatory Alternatives.* pp. 11-13; CMA. *Regulation and Competition: A Review of the Evidence*. London: CMA, 2020. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/857024/Regulation_and_Competition_report_-_web_version.pdf. p. 3.
[61] FRISON-ROCHE, Marie-Anne. Définition du droit de la régulation économique. *Recueil Dalloz*, n. 2, 2004. Available at: https://mafr.fr/IMG/pdf/8-2-16-_Definition_Droit_de_la_Regulation_2004.pdf. pp. 128-129.
[62] COSCELLI, Andrea. *Regulation and competition enforcement – a combined approach*. Keynote speech to the annual Fordham Competition Law Institute conference, 2018. Available at: https://www.gov.uk/government/speeches/fordham-competition-law-institute-annual-conference-2018-keynote-speech.

on the form or degree. While competition law is a weaker tool of intervention (by strengthening the market mechanism itself through the prohibition of some behaviours), sector regulation leads to a more intensified intervention (by more prescriptive regulation) and is required when competition law is insufficient to address the market failure. Thus, competition law is the first best to address market imperfections, sector regulation being regarded as a second best.[63]

On the one hand, competition enforcement can complement sector regulation. For example, sometimes the sector regulator is the *ex-ante* controller of market power (by means of price, revenue and investment oversight), and the competition authority is the *ex-post* controller market power (through cartel and abuse of dominance enforcement). In that sense, failures in *ex-ante* regulation can require *ex-post* control.[64] This complementarity can also be observed when the enforcement of competition law assists defeating private anti-competitive practices that threaten the object of a sector regulation; when competition law enforcement or advocacy helps improving regulation (including pro-competitive regulatory reforms); or when competition law enforcement precludes enterprises from using regulation in one sector to engage in anti-competitive conducts in another sector.[65]

On the other hand, sector regulation can also complement competition enforcement. For instance, this is the case when the sector regulator encourages competition through regulatory obligations to foster entry (e.g. allowing access to essential facilities) and prevents the use of market power by monopolies (e.g. by price or rate of return regulation and investments requirements).[66] This frequently occurs when liberalising an industry, aiming to promote competition within a regulated sector.[67]

These complementary roles are clearly observed when competition law and sector regulation have the same objectives (i.e. the promotion of competition) or when sector regulation has goals wider than the promotion of competition, but which are consistent with competition law. This complementary relationship can also be identified in some cases when sector regulation is not designed to promote competition, e.g.: (i) when competition is not able

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[63] DUNNE, Niamh. *op. cit*. pp. 54-55.
[64] OECD. *Independent Sector Regulators.* p. 7.
[65] ICN. *Report to the Third ICN Annual Conference, Seoul, April 2004*. Antitrust Enforcement in Regulated Sectors Working Group Subgroup 2: Enforcement experience in regulated sectors. 2004. Available at: https://centrocedec.files.wordpress.com/2015/07/enforcement-experience-in-regulated-sectors-2004.pdf. pp. 13-20.
[66] OECD. *Independent Sector Regulators.* p. 7.
[67] For examples in the Brazilian experience, see PEREIRA NETO, Caio Mário da Silva; PRADO FILHO, José Inacio Ferraz de Almeida. Espaços e interfaces entre regulação e defesa da concorrência: a posição do CADE. *Revista Direito GV*, v. 2, n. 1, 2016. Available at: https://bibliotecadigital.fgv.br/ojs/index.php/revdireitogv/article/view/59453.

to work without the existence of sector regulation; (ii) when competition authorities cannot exempt practices that should be exempted (in particular, in sectors where co-operation between firms is needed to promote efficiency); and (iii) when sector regulators have more operation tools to eliminate broadly anti-competitive practices than competition authorities.[68]

However, the relationship between competition law and sector regulation can also give rise to tensions. This can occur, for instance, when competition enforcement and sector regulation overlap, which can lead to jurisdictional conflicts (which authority is competent to govern the case?), as well as substantive conflicts (does either competition law or sector regulation apply? If both, how to ensure coherent approaches?).[69]

Tensions can also exist in situations where sector regulation creates a difficulty for the competition enforcement. For example, when sector regulation restricts the scope of application of competition laws (e.g. antitrust exemptions) and when sector regulation does not preclude competition law enforcement but makes it more difficult (e.g. by establishing a structure that is not conducive to competition). Finally, sector regulation may seek to limit or restrict competition (anti-competitive regulations), usually based on alleged legitimate policy objectives.[70] As will be seen in chapter 4, very often these policy goals can be achieved through less restrictive means (justifying the implementation of pro-competitive reforms), showing that there may be a potential for complementarity between sector regulation and competition law.

Although in theory the distinction of competition law and sector regulation as alternatives (separate mechanisms of market supervision) or complements (different manifestations of state intervention) may be useful to better understand these instruments, in practice their interaction is much more complex than a blunt substitutes-or-complements dichotomy.[71] Indeed, while sector regulation and competition law may be complements even if they have different goals, they may be alternatives even when they seek the same objective.[72] Thus, competition law and sector regulation are "distinct but overlapping, largely complementary but no infrequently in conflict".[73]

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[68] ICN. *Report to the Third ICN Annual Conference.* pp. 4-13.
[69] OECD. C*ompetition Enforcement and Regulatory Alternatives.* p. 12.
[70] ICN. *Report to the Third ICN Annual Conference.* pp. 20-25.
[71] DUNNE, Niamh. *op. cit*. p. 66.
[72] ICN. *Report to the Third ICN Annual Conference.* p. 3.
[73] DUNNE, Niamh. *op. cit*. p. 332.

1.3 Competition enforcement in regulated sectors

The substantive relationship between competition law and sector regulation becomes apparent when, in theory, both of them can be applied to a given case. In such event, discussions can emerge on whether competition law and sector regulation should be concurrently enforced,[74] or whether one should prevail over the other. In other words, should competition law be applicable *ex post* in sectors subject to *ex-ante* regulation?

In regulated sectors, anti-competitive behaviours can potentially emerge if (i) the conduct is required or approved by sector regulation; (ii) the conduct infringes sector regulation; or (iii) the conduct falls outside the regulatory framework, although within a regulated sector.[75]

Thus, the question of concurrency occurs when there is a potential overlap between the application of competition law and sector regulation, i.e. when "instead of choosing between competition law and regulation as mechanisms of market supervision", it is possible "to apply both, simultaneously or consecutively, within the same market and even to address the same anti-competitive conduct".[76]

1.3.1 Concurrent application

Certain authors reject concurrency for both economic and legal reasons. For example, it would mean a duplication of enforcement by the competition authority and the sector regulator, leading to a misuse of public resources and legal uncertainty, particularly as regards potential conflicting decisions.[77]

Moreover, applying competition law in regulated sectors has two relevant legal challenges. First, market players may be prevented from behaving independently by sector regulation. Second, the anti-competitive effects of a conduct may not be attributed to the firm, but rather to regulation itself. This means that there is a risk that anti-competitive infringements

[74] One should note that this section refers to substantive concurrency (i.e. the legal effects of applying competition law in markets already subject to sector regulation), as opposed to institutional or jurisdictional concurrency, which concerns the enforcement of competition law by competition authorities and sector regulators, as discussed in section 1.4 (DUNNE, Niamh. *op. cit.* p. 187).
[75] DUNNE, Niamh. *op. cit.* p. 189.
[76] *Ibid.* p. 188.
[77] HELLWIG, Martin. Competition Policy and Sector-specific Regulation for Network Industries. In VIVES, Xavier (ed.). Competition Policy in the EU - Fifty Years on from the Treaty. Oxford: Oxford University Press, 2009. pp. 230-232; DUNNE, Niamh. *op. cit.* p. 234.

on regulated markets do not fulfil the requirements for substantive liability, and therefore enforcement in regulated sectors might breach basic principles of fairness and rule of law.[78]

Furthermore, there would be a risk of unnecessary enforcement (i.e. regarding false positives), as competition assessment would not be able to fully consider the specific features of regulated sectors.[79] This may create a risk of sanctioning efficient (or at least no inefficient) behaviour, lowering consumer welfare. Further, false positives may undermine the balance between competition and legitimate objectives of regulation, which may also reduce market competition and the incentives of firms to invest.[80]

On the other hand, there is a set of arguments supporting that the concurrent application of competition law and sector regulation would ensure the effectiveness of competition law within regulated sectors, guaranteeing the economic benefits arising from well-functioning markets.[81]

Competition enforcement would be relevant in regulated sectors, especially when they are undergoing liberalisation/deregulation. As such markets are often still partially competitive, regulatory gaps are most likely, and competition enforcement can step in to fill those gaps. In fact, in the transition of markets to competition, competition enforcement can allow the reduction of regulation without leaving a gap in oversight of competitive behaviours. In this sense, competition law would be a constructive complement to regulation (see Chapter 4).[82]

Concurrency would also be required to address the risk of regulatory gaming, which can be defined as "private behaviour that harnesses pro-competitive or neutral regulations and uses them for exclusionary purposes".[83] Such practices would jeopardise the regulatory framework and the complementary relationship between competition law and sector regulation. Thus, competition enforcement would be even more necessary in regulated sectors, since regulation increases the opportunities and incentives for companies to exploit the regulatory framework to

[78] DUNNE, Niamh. *op. cit.* p. 190.
[79] OECD. C*ompetition Enforcement and Regulatory Alternatives.* p. 16.
[80] DUNNE, Niamh. *op. cit.* p. 232.
[81] Id.
[82] SHELANSKI, Howard A. Antitrust and Deregulation. *The Yale Law Journal*, v. 127, v. 7, 2018. Available at: https://www.yalelawjournal.org/feature/antitrust-and-deregulation. pp. 1944-1960; SHELANSKI, Howard A. The Case for Rebalancing Antitrust and Regulation. *Michigan Law Review*, v. 109, n/ 5, 2011. Available at: https://michiganlawreview.org/journal/the-case-for-rebalancing-antitrust-and-regulation/. pp. 727-732.
[83] DOGAN, Stacey L.; LEMLEY, Mark A. *Antitrust Law and Regulatory Gaming, Stanford Law & Economics Olin Working Paper No. 367*. 2008. Available at: https://law.stanford.edu/publications/antitrust-law-and-regulatory-gaming/. p. 3.

engage in anti-competitive practices.[84-85] In addition, the risk of false positives would be lower in regulated sectors, as sector regulation can easily circumscribe antitrust scrutiny of certain types of behaviour.[86]

It is also argued that in practice there is no real duplication of enforcement, since the existence of competition problems in regulated sectors indicate that sector regulators do not effectively protect competition. Accordingly, it is said that sector regulators rarely promote competition, either because they have been captured, they do not have effective mechanisms to enforce competition law or they lack interest or competition expertise.[87-88]

Finally, competition law is more effective in protecting and promoting competition when compared to sector regulation, as competition authorities have competition expertise, are less likely to be captured and are less constrained by non-economic objectives. In this sense, competition law operates as an indirect or fall-back mechanism of market control, revealing an economic-wide commitment to competition as a principle for societal organisation.[89]

Allowing or not concurrent application of competition law and sector regulation reflects the view of such instruments as complements or substitutes, respectively, as described above. On the one hand, if one considers that they are substitute instruments of market control, then competition law and sector regulation would have an exclusionary relationship and the adoption of one would prevent the application of the other. On the other hand, conceiving competition law and sector regulation as complementary and compatible instruments means that they are applicable consecutively to the same market conduct and are mutually reinforcing. This holistic approach, therefore, supports the concurrent application of competition law and sector regulation.[90]

The search for the "regulator's intent" may be an approach to determine whether concurrency should be accepted. Accordingly, one should identify from the regulation whether

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[84] DUNNE, Niamh. *op. cit.* p. 191; DOGAN, Stacey L.; LEMLEY, Mark A. op. cit.; BRENNAN, Timothy J. Essential Facilities and Trinko: Should Antitrust and Regulation Be Combined? *Federal Communications Law Journal*, v. 61, n. 1, 2008. Available at: https://www.repository.law.indiana.edu/cgi/viewcontent.cgi?article=1521&context=fclj. p. 141.

[85] It should be noted, however, that regulatory gaming is not a per se/by object infringement, and in some circumstances can lead to pro-competitive outcomes. Competition law is sensitive and flexible enough to balance anti-competitive harm against pro-competitive benefits, and to balance the risk of false negatives against the risk of false positives. The mere existence of regulation therefore should not prevent competition authorities from carrying out this assessment (DOGAN, Stacey L.; LEMLEY, Mark A. *op. cit*.).

[86] DOGAN, Stacey L.; LEMLEY, Mark A. *op. cit*. p. 24.

[87] *Ibid*. p. 25.

[88] Dunne, however, highlights that the existence of inefficiencies may arise from a decision of the sector regulator justified to achieve legitimate non-economic objectives (DUNNE, Niamh. *op. cit.* p. 235).

[89] DUNNE, Niamh. *op. cit.* pp. 190-191.

[90] *Ibid*. p. 193.

and to what extent the regulator foresaw and considered the possibility of subsequent competition enforcement in the regulated sector. While this can sometimes be found in the regulation itself, in its recital or in supporting documents to the regulation when it was enacted, often it is not possible to identify the regulator's intent.[91]

Furthermore, there is no one-size-fits-all response for the concurrency question, and it can vary not only across jurisdictions and regulated sectors, but also within the same sector, considering the specificities of each legal regime, regulatory context and alleged anti-competitive practice. Indeed, this is a substantive question, which depends on the impact of the regulatory scheme on the market and the potential defendant's behaviour, as well as on the consequences for competition liability.[92]

In this regard, it is said that the scope for subsequent competition enforcement is inversely proportional to the extent, complexity and nature of the duties imposed by sector regulation. The focus when addressing concurrency question should be on the implications of pre-existing regulation for subsequent competition enforcement. For instance, while competition enforcement should be more limited regarding anti-competitive behaviours that results directly from decisions taken by the regulator, it should be more prominent when an anti-competitive practice is attributable, exclusively or at least predominantly, to private conduct.[93]

Thus, the issue of concurrency is not absolute, but rather a question of extent to which competition law can reach business behaviours in regulated markets. This involves the so-called regulated conduct defence, as discussed below.[94]

1.3.2 Regulated conduct defence

The regulated conduct defence is raised by antitrust defendants aiming to shield business behaviours from competition enforcement when such conducts are required by sector regulation. This defence relates to several legal doctrines (e.g. express immunity, implied immunity and the state action doctrine) that allow an exemption from competition law. While each jurisdiction has developed its own conditions for accepting the regulated conduct defence on a case-by-case approach without a fully coherent framework, its use has been restricted and

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[91] *Ibid*. pp. 194-195.
[92] *Ibid*. pp. 195-196.
[93] HOVENKAMP, Herbert. *The Antitrust Enterprise: Principle and Execution*. Cambridge: Harvard University Press, 2008. p. 230; DUNNE, Niamh. *op. cit.* pp. 197-198.
[94] OECD. C*ompetition Enforcement and Regulatory Alternatives.* p. 16.

is often limited to cases where the business' contested conduct is the policy choice of a sovereign government.[95]

Many regulated sectors are explicitly removed from the scope of application of competition law, usually on the grounds that a specific public policy objective should be prioritised over competition. These express exemptions are typically provided for in the competition law itself or in the sector regulation. There may be different degrees of exemptions, ranging from specific practices or entities to entire sectors. For example, there may be competition law immunity for specific behaviours; broader competition law immunity to narrow areas; limited competition law immunity to broader areas; and broad competition law immunity for entire areas.[96] Over time, competition law exemptions have been abolished or narrowed down in many jurisdictions, although there are still a significant number of them.[97]

Whole sectors or specific behaviours may also be implicitly shielded from the application of competition law. Indeed, the regulated conduct defence may be based on antitrust immunity not explicitly provided for in the competition law or sector regulation (i.e. implied antitrust immunity). Although the requirements to accept implied antitrust immunity vary to some extent across jurisdictions, they commonly rest on the premise that competition authorities cannot intervene – and therefore the regulated conduct defence should be accepted – when business behaviour is mandated or dictated by regulation. If enterprises are induced by regulation to infringe competition law, but their behaviours are autonomously decided, sanctions can be mitigated.[98]

In the United States, for example, the relationship between competition law and sector regulation is different vis-à-vis the level of government from which the regulation emanates (i.e. federal v. state or local regulation). The relationship between federal antitrust and state or local regulation is governed by two doctrines: pre-emption and state action. According to the pre-emption doctrine, the federal law invalidates a conflicting state law when there is an irreconcilable conflict between the state regulation and federal competition law. This doctrine has a narrow scope and comprises only those cases where a hard-core restriction (per se

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[95] OECD. *The Regulated Conduct Defence.* pp. 21, 26-27.
[96] *Ibid.* p. 27; OECD. *The promotion of competitive neutrality by competition authorities*, OECD Global Forum on Competition Discussion Paper. Paris: OECD Publishing, 2021. Available at: https://www.oecd.org/competition/globalforum/the-promotion-of-competitive-neutrality-by-competition-authorities.htm. p. 9.
[97] OECD. *Executive Summary, The Regulated Conduct Defence*, OECD Competition Policy Roundtable. Paris: OECD Publishing, 2011. Available at: https://www.oecd.org/daf/competition/48606639.pdf. p. 9.
[98] OECD. *The Regulated Conduct Defence.* p. 30; OECD. *Executive Summary, The Regulated Conduct Defence.* p. 10; OECD. C*ompetition Enforcement and Regulatory Alternatives.* p. 17.

violations) of competition results from state law, unless falling under the state action exemption.[99]

The state action doctrine provides immunity from federal competition law to certain state regulations. Such doctrine was first developed in *Parker v. Brown*, which established that antitrust law prohibits only individual action and cannot be applied to state regulatory programmes.[100] This means that state or local regulations and private activities covered by such regulations are exempted from competition enforcement and can therefore infringe antitrust law in light of federalism and state sovereignty.[101] For the state action doctrine to be accepted, two requirements must be fulfilled: authorisation and supervision. First, the state must have "clearly articulated" and "affirmatively expressed" its desire to remove from the ordinary competition law regime a given regulation that covers the challenged practice. Second, in case the challenged behaviour arises from private players (and not from the state itself), the conduct must be "actively supervised" by a state agency or official.[102]

On the other hand, as federal antitrust and federal regulations have the same hierarchical status, their relationship is defined by a substantive assessment aimed at harmonising antitrust law and federal regulation to ensure their joint application. Thus, there is a presumption in favour of concurrency, unless express exemptions (which are interpreted narrowly) exist. Implicit immunity is only accepted if there is "plain repugnancy" between antitrust and regulation, and "if necessary to make [the regulation] work and even then only to the minimum extent necessary".[103] US courts usually accept implied immunity only if competition enforcement can interfere with a regulator's operations or if the regulator has studied the topic, even though achieving a resolution is not necessary.[104]

In the last two decades, certain Supreme Court cases (e.g. Trink, Credit Suisse and linkLine) have suggested a shift in the interpretation of concurrency, indicating that antitrust rules should not apply when there is no added value compared to regulation. Accordingly, where a sector regulation creates and controls the market, antitrust enforcement tends to be excluded since regulation itself operates as a substantive rule of antitrust.[105] Thus, in the United States there is a trend to defer the antitrust regime to the regulatory framework, resting on the

[99] DUNNE, Niamh. *op. cit.* p. 199.
[100] *Parker v. Brown*, 317 U.S. 341 (1943).
[101] DUNNE, Niamh. *op. cit.* pp. 199-200.
[102] HOVENKAMP, Herbert. *op. cit*. pp. 233-234.
[103] DUNNE, Niamh. *op. cit.* pp. 203-204; OECD. C*ompetition Enforcement and Regulatory Alternatives.* p. 18.
[104] HOVENKAMP, Herbert. *op. cit*. p. 233.
[105] OECD. *The Regulated Conduct Defence.* p. 31; DUNNE, Niamh. *op. cit.* pp. 205-209.

assumption that sector regulation has more appropriate powers to sanction potential violations (i.e. sector regulation and competition law would be alternative instruments).[106]

In the European Union, concurrency is the basic rule, and therefore competition law is applicable *ex post* in any regulated market, whether subject to national or EU regulation. In other words, unlike in the Unites States, the legal source of regulation is not a relevant issue when determining concurrency in the European Union.[107] This can be explained by the fact that EU competition rules are foundational Treaty provisions – since paramount for the effective functioning of EU markets –, hierarchically superior to both domestic and EU-level regulatory rules, taking precedence in cases of conflict.[108]

Competition enforcement is precluded in regulated sectors only in very limited circumstances. There are three main cases thereof. First, competition law does not apply where there is an express derogation from its application in a regulated market (express exemption). Second, competition law does not apply in regulated sectors where the regulation itself establishes that the sector is not open to competition (i.e. a *de facto* or legal monopoly). In such cases, as competition is not possible even in the absence of anti-competitive practices, a business behaviour cannot restrict competition. Third and most importantly, the so-called state action defence, which states that, where sector regulation removes all scope for autonomous business activity, no independent anti-competitive conduct can arise and therefore there is no scope for applying competition law against the regulated firms.[109]

The state action defence is based on the premise that liability under EU competition law depends on independent market behaviour. This means that, even if there exists an anti-competitive behaviour, the concerning firm cannot be held liable if such a conduct is dictated by regulatory obligations (i.e. there is no offender in this case). Nevertheless, the state action defence is interpreted and accepted restrictively. The defence only applies if the regulatory regime removes all scope for autonomous business behaviour, and the mere existence of some leeway or scope to prevent an anti-competitive practice is enough for liability. The fact that an anti-competitive behaviour is encouraged, facilitated or approved by regulation does not

[106] ALEXIADIS, Peter; PEREIRA NETO, Caio Mário da Silva. *op. cit.* p. 23.
[107] Nonetheless, the source of regulation modifies the legal reasoning for justifying the concurrency regime. While in cases of national regulation the application of competition law rests on the principle of primacy (which establishes that EU law, including competition law, takes precedence over incompatible domestic rules), when it comes to EU-level regulation the argument is that EU competition rules are Treaty provisions and thus hierarchically superior to EU secondary legislation, such as directives or regulations (DUNNE, Niamh. *op. cit.* pp. 214-215).
[108] DUNNE, Niamh. *op. cit.* pp. 212-214.
[109] *Ibid.* pp. 215-216; OECD. C*ompetition Enforcement and Regulatory Alternatives.* p. 18.

prevent competition enforcement if there is room for some independent market conduct.[110-111] Following this understanding, the European Commission has been applying competition law in heavily regulated sectors and to business practices substantially impacted by regulation.[112-113]

In Brazil, CADE has applied implied antitrust immunity based on foreign doctrines at least since 2010. These doctrines are interpreted narrowly and, to be accepted (and therefore remove a specific behaviour from the competition law regime), some conditions are required, particularly: the exam of the legislative history; the creation of a supervisory power by the regulation; and the use of this power by the sector regulator.[114] Although CADE's decisions usually refer to US doctrines (such as the state action),[115] the Brazilian approach seems to be more aligned with the EU regime. Accordingly, competition law applies broadly to regulated sectors unless regulation entirely removes the discretion of market players to choose the pertinent competitive strategy under scrutiny.[116] This means that competition law and sector regulation are mainly seen as complementary tools that coexist smoothly. In this context, the competition authority and sector regulators should operate within their respective legal mandate, using their own instruments and pursuing their own goals.[117]

1.4 Institutional relationship

In addition to the discussion on competition enforcement in regulated sectors, including the substantive relationship between competition law and sector regulation, there are different institutional frameworks that reflect how the interaction between competition law and sector

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[110] However, even if the state action defence is not accepted on the grounds that the market player has scope for autonomous conduct, the anti-competitive effect may also be attributed, at least partially, to the national regulator. This allows the European Commission to take action against the Member State for a breach of EU competition law (DUNNE, Niamh. *op. cit.* p. 220).

[111] Although the existence of regulation encouraging or authorising firms to engage in anti-competitive behaviour prevents the state action defence to be accepted, it can constitute a mitigating factor when setting the sanction, in line with the Commission Guidelines on setting fines (OECD. *The Regulated Conduct Defence.* pp. 36-37).

[112] DUNNE, Niamh. *op. cit.* pp. 216-220.

[113] It should be noted that Article 106(2) TFEU partially exempts undertakings entrusted with the operation of services of general economic interest (SGEI) from competition law enforcement (DUNNE, Niamh. *op. cit.* p. 215). The ECJ requires three conditions to accept such an exemption: (i) the undertaking in question is entrusted by a Member State, by legislation or contract, to carry out a service as SGEI; (ii) the competition restraint is needed to guarantee that the service is provided under economically acceptable conditions; and (iii) the competition restraint is not against the interest of the Union (OECD. *The Regulated Conduct Defence.* p. 35).

[114] SILVEIRA, Paulo Burnier da. *Direito da Concorrência*. Rio de Janeiro: Forense, 2021. p. 140; PEREIRA NETO, Caio Mário da Silva; PRADO FILHO, José Inacio Ferraz de Almeida. *op. cit*.

[115] See, for example, Administrative Proceedings CADE No. 08012.004989/2003-54 (decision of August 2010) and No. 08012.001518/2006-37 (decision of August 2018).

[116] ALEXIADIS, Peter; PEREIRA NETO, Caio Mário da Silva. *op. cit*. p. 24.

[117] SILVEIRA, Paulo Burnier da. *op. cit*. p. 134.

regulation takes place. These include both institutional set-up options and tools for co-operation.

An appropriate institutional design is relevant for better managing the relationship between competition law and sector regulation, even though no model is able to ensure that all inconsistencies in the application of these two instruments are eliminated.[118]

There are different possible institutional set-ups: they can clearly separate competition authorities from sector regulators or empower a single authority to enforce both competition law and sector regulation. In between these two extreme models, there are schemes where competition authorities and sector regulators are granted concurrent jurisdiction for certain rules of economic sectors.[119] Under the latter approach, regulators can have competition powers, or competition authorities can have regulatory powers.[120]

It should be noted that there is no one-size-fits-all model, and determining the optimal institutional set-up depends on a trade-off between the potential advantages and disadvantages of each alternative, taking into account the local conditions.[121] For example, experience and practical application (i.e. what can and what cannot work in the sector or jurisdiction), the institutional culture and the type and goals of the competition law under consideration play a role when defining which design should be adopted in a given jurisdiction.[122]

Moreover, regardless of the institutional set-up adopted, there are also a set of tools that are used by authorities to foster co-operation seeking to ensure consistency between competition law and sector regulation. The way authorities interact in practice also reflect how the relationship between competition law and sector regulation is regarded.

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[118] OECD. C*ompetition Enforcement and Regulatory Alternatives.* p. 19.

[119] Although these are the three most common set-ups, other alternatives are also possible. For instance, Dabbah proposes a wider classification of different institutional designs: (i) exclusive allocation of competition enforcement in specific sectors to sector regulators in addition to sector regulation; (ii) co-ordination of competition enforcement between sector regulators (which also enforce sector regulation) and the competition authority; (iii) allocation of sector regulation to competition authorities in addition to competition enforcement, with sector regulators being responsible only for technical regulation; (iv) allocation of competition enforcement and sector regulation to competition authorities; (v) exclusive allocation of competition enforcement in regulated sectors to competition authorities and exclusive allocation of sector regulation to sector regulators; (vi) allocation of competition enforcement in regulated sectors concurrently to competition authorities and sector regulators. According to the author, these alternatives are not exhaustive and can vary across sectors within the same jurisdiction (DABBAH, Maher M. *op. cit*. pp. 116-117).

[120] OECD. *Independent Sector Regulators.* pp. 19 ff.; OECD. C*ompetition Enforcement and Regulatory Alternatives.* pp. 19 ff.; DABBAH, Maher M. *op. cit*. pp. 116-117; JENNY, Frédéric. The Institutional Design of Competition Authorities: Debates and Trends. In JENNY, Frédéric; KATSOULACOS, Yannis (ed.). *Competition Law Enforcement in the BRICS and in Developing Countries: Legal and Economic Aspects*. Cham: Springer, 2016.

[121] OECD. *Summary Record of the Roundtable on Changes in Institutional Design*. Paris: OECD Publishing, 2015. Available at: https://one.oecd.org/document/DAF/COMP/M(2014)3/ANN4/FINAL/en/pdf.

[122] DABBAH, Maher M. *op. cit*. p. 117.

1.4.1 Institutional set-up options

In the most common model and standard institutional design, the competition authority is a stand-alone agency responsible for enforcing competition law on all sectors of the economy, while sector regulators are separate bodies responsible for sector regulation in one or more specific sectors.[123] Under this approach, competition law and sector regulation are enforced independently.[124] This set-up is based on the assumption that *ex-post* (i.e. sector regulation) and *ex-ante* (i.e. competition law) interventions should be strictly separated and managed by distinct agencies.[125]

This is the institutional design adopted in the United States, Canada, Japan, the majority of EU Member States and Brazil.[126] In Brazil, for instance, the Administrative Council for Economic Defence (CADE) is the competition authority, responsible for enforcing competition law across all economic sectors,[127] while independent regulatory agencies are entitled to apply sector regulation within their respective sector. Such bodies were created following the process of liberalisation and privatisation of the Brazilian economy that started in the 1990s. This is the case, for example, of the National Civil Aviation Agency (ANAC), which is responsible for regulating and supervising civil-aviation activities, including airports.

This institutional design is alleged to guarantee a uniform approach to competition enforcement horizontally across all economic sectors, benefiting from an economy-wide perspective. Moreover, it would be less likely to the risk of regulatory capture of the competition authority. It would also increase efficiency in the application of competition law, since the standalone agency can concentrate and develop a high-level expertise in competition law and economics, although it usually lacks technical knowledge in specific sectors – including both regulated and non-regulated industries.[128] Further, this model allows the separation of regulation and competition powers in order to ensure that public interest issues are addressed

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[123] OECD. *Interactions between competition authorities and sector regulators, OECD Competition Policy Roundtable Background Note*. Paris: OECD Publishing, 2022. Available at: https://www.oecd.org/daf/competition/interactions-between-competition-authorities-and-sector-regulators-2022.pdf. p. 8.

[124] OECD. C*ompetition Enforcement and Regulatory Alternatives.* p. 19.

[125] ALEXIADIS, Peter; PEREIRA NETO, Caio Mário da Silva. *Competing Architectures for Regulatory and Competition Law Governance, Research Report*. Fiesole: European University Institute, 2019. Available at: https://fsr.eui.eu/publications/?handle=1814/63285. p. 16.

[126] *Ibid*. p. 17.

[127] In addition, the Secretariat for Economic Reforms (SRE) of the Ministry of Finance – until 2022, the Secretariat for Economic Monitoring (SEAE) – is responsible for promoting competition advocacy within government agencies and society.

[128] OECD. *Interactions between competition authorities and sector regulators.* p. 8; DABBAH, Maher M. *op. cit*. pp. 118-119.

ex ante by sector regulators, while competition authorities can focus *ex post* on the effective functioning of markets and consumer benefits.[129] In additional, agencies under this model would be better able to set a clear institutional "brand" and coherent policy priorities that can be easily communicated.[130]

Nevertheless, having different authorities applying competition law and sector regulation independently leads to a significant risk of jurisdictional conflicts (i.e. which agency has jurisdiction to act when parallel enforcement is possible), as well as substantive conflicts (different or even conflicting conclusions on the same case, when both have jurisdiction in a given case). Therefore, there may be inconsistencies between the interventions of competition authorities and sector regulators, even when they share common goals.[131] To address the risk of incoherence, ensuring co-operation between these entities is particularly relevant in this institutional set-up, as further discussed below.

More recently, there has been a trend in some jurisdictions towards merging the application of competition law and sector regulation within the same agency. This has been justified by sound analytical and cost-saving measure reasons,[132] as well as to increase synergies and consistency in the enforcement of competition law and sector regulation.[133]

Integrating competition law and sector regulation enforcement within the same entity (either the competition authority, a sector regulator or a new established authority) was implemented, for example, in Australia, Estonia, New Zealand, and Spain.[134] A less common alternative is to entrust a sector regulator with the exclusive responsibility for competition enforcement in its sector, the competition authority being responsible for competition enforcement in the other sectors of the economy. This is the case, for instance, in Costa Rica, Mexico and Greece as regards the telecommunications sector.[135]

Multifunction agencies are alleged to increase efficiency of the authority, due to operational benefits such as economies of scale and scope, reducing administrative costs for the

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[129] STERN, Jon. Sectoral Regulation and Competition Policy: The U.K.'s Concurrency Arrangements - An Economic Perspective. *Journal of Competition Law & Economics*, v. 11, n. 4, 2015. Available at: https://academic.oup.com/jcle/article/11/4/881/2357641. p. 897.

[130] KOVACIC, William E.; HYMAN, David A. Competition Agency Design: What's on the Menu?, *GWU Law School Public Law Research Paper No. 2012-135*, 2012. Available at: https://scholarship.law.gwu.edu/faculty_publications/628. p. 9.

[131] OECD. *Interactions between competition authorities and sector regulators.* p. 8; OECD. C*ompetition Enforcement and Regulatory Alternatives.* p. 20.

[132] ALEXIADIS, Peter; PEREIRA NETO, Caio Mário da Silva. *op. cit*. p. 16.

[133] OECD. *Interactions between competition authorities and sector regulators.* p. 9.

[134] ALEXIADIS, Peter; PEREIRA NETO, Caio Mário da Silva. *op. cit*. p. 17; OECD. *Interactions between competition authorities and sector regulators.* p. 8.

[135] OECD. *Interactions between competition authorities and sector regulators.* p. 33.

government (and therefore taxpayers), including those associated with inter-institutional co-operation. In addition, this model is likely to enhance the recruitment process and make staff more motivated in light of the possibility of mobility between different policy areas. Combined agencies provide the authority with a more flexible set of instruments to promote and maintain competition (including technical expertise in competition investigations and the use of competition principles in regulatory/de-regulatory activities), which is very relevant in newly deregulated sectors. Multifunction bodies may also reduce the risk of regulatory capture compared to regulators dealing with only one industry, as these entities are less connected to single sectors and therefore provide a more elusive target for any specific interest groups. Furthermore, combined agencies are more adaptable to changing markets. This model also limits the ability of firms to engage in regulatory "forum shopping", by selecting to bring their cases to the authority with most chance of success. Finally, it reduces the risk of conflicting decisions, increasing legal certainty and coherence between competition and regulatory interventions.[136-137]

Nonetheless, integrating competition and sector regulation powers is also challenging and may present some disadvantages. As the activities of multifunction agencies are broader, ensuring a focused and clear mission is more challenging, for example as regards prioritisation of cases and the efficient allocation of resources to each of the various functions within their remit. Merging competition authorities and sector regulators may not be easy due to incompatibilities in organisational culture, for example due to different expertise, management structures and work processes. Although most multifunction authorities use separate operating divisions across policy functions, certain degree of co-ordination between those divisions is essential. Additionally, it is argued that multifunction authorities may reduce the technical expertise, especially in the board level, and consequently the quality of decisions. Furthermore, there may be incompatibilities between *ex-ante* sector regulatory functions and *ex-post* competition enforcement activities, in light of possible different (and even conflicting)

[136] JENNY, Frédéric. *op. cit*. pp. 18-19; OECD. *Key points of the Roundtables on Changes in Institutional Design*. pp. 2-5; ALEXIADIS, Peter; PEREIRA NETO, Caio Mário da Silva. *op. cit*. p. 18; OECD. *Interactions between competition authorities and sector regulators.* pp. 8-9; KOVACIC, William E.; HYMAN, David A. *op. cit*. p. 9.
[137] It is recognised, however, that most of these benefits could be achieved by creating a multi-sector regulator without competition powers (OECD. *Summary Record of the Roundtable on Changes in Institutional Design*. p. 5).

objectives and approaches of each of these tools. Multifunction agencies may also struggle to balance competing functions, including the allocation of budget.[138]

A third set-up alternative is to entrust both the competition authority and the sector regulator with the power to enforce competition law within a given sector. Under this scheme, called concurrency regime, the competition authority and sector regulators can apply competition law in parallel.[139]

This model is not very common worldwide, with the United Kingdom representing a paradigmatic example – even though this set-up can also be found to some extent in other jurisdictions, usually linked historically to the British Commonwealth, such as Singapore, South Africa and India.[140-141]

The concurrency model was first developed in the United Kingdom, during the wave of liberalisations in the 1980s. At the time, some believed that sector regulation was a temporary form of market control, which would be naturally replaced by competition, reflecting the view of competition law and sector regulation as substitutes. According to this standpoint, in addition to their typical economic regulatory functions, sector regulators should also have competition enforcement powers to supersede in the future their regulatory activities, which would become obsolete. Nevertheless, the competition system, including the existing competition authorities, was not abolished, resulting in a compromise arrangement of concurrency. That is, the competition authorities retained their enforcement powers alongside the new regulators.[142] Thus, as finally implemented, this approach echoed the view that competition law and sector regulation are complements most of the time.

The concurrency regime comprises two different but complementary aspects. First, competition enforcement powers are held concurrently by the competition authority and sector regulators within their respective sectors. Second, competition enforcement powers typically overlap with the sector regulation powers, which means that the same behaviour may be subject

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[138] JENNY, Frédéric. *op. cit*. p. 19; OECD. *Key points of the Roundtables on Changes in Institutional Design.* pp. 2-5; OECD. *Independent Sector Regulators.* pp. 21-22; OECD. *Interactions between competition authorities and sector regulators.* p. 9.

[139] OECD. *Independent Sector Regulators.* p. 23.

[140] ALEXIADIS, Peter; PEREIRA NETO, Caio Mário da Silva. *op. cit*. p. 25.

[141] In addition, some jurisdictions present institutionalised co-operation between sector regulators and the competition authority that in practice results in an informal concurrency structure. This is the case, for example in Austria and France as regards telecommunications; Greece as regards energy; Hungary and Ireland as regards energy (STERN, Jon. *op. cit*. p. 896).

[142] DUNNE, Niamh. Concurrency. In Rodger, Barry; Whelan, Peter; MacCulloch, Angus (ed.). *The UK Competition Regime: A Twenty-Year Retrospective*. Oxford: Oxford University Press, 2021.

to both competition law and sector regulation, but competition enforcement should take priority if it can lead to an equally adequate result.[143]

By providing an integrated approach of regulation and competition enforcement, the concurrency model enables sector regulators to develop a broad and comprehensive understanding to better regulate their sectors. Another benefit of this regime is to better stimulate sector regulators to embrace a pro-competition culture, operating towards reduced regulation and greater reliance upon the market mechanism. This set-up also allows cases to be allocated to the authority best suited to address the problem. For instance, a competition case can be allocated to a sector regulator to ensure coherence with other regulatory responsibilities or because the sector regulator can better assess the substance of the case in light of the expertise of its staff. Moreover, concurrency allows competition authorities to conduct more robust competition advocacy initiatives, pushing for pro-competitive reforms or guaranteeing that competition is considered in legislative or regulatory development. Finally, concurrency can support sector regulators against political intervention by governments.[144]

However, the concurrency regime also raises challenges. One of the main concerns is the possible overlap of jurisdiction and the unnecessary duplication of the work of the competition authority and sector regulators. This can be worse in the absence of adequate co-ordination either between the competition authority and sector regulators, or between sector regulators themselves (when cross-sectoral issues arise). Another risk relates to inconsistent application of competition law, for example because the sector regulators emphasise non-competition considerations (such as public interest test) or approach key competition issues differently from the competition authority. This is linked to the question of which body has institutional primacy – in the UK, for example, the competition authority has the role of an appeals body in regulated sectors. Moreover, concurrency may give rise to frictions between sector regulators and the competition authority, as well as forum shopping by firms, which in turn can contribute to inconsistency. There may also be an issue of prioritisation and coherence of objectives within sector regulators, which ultimately may lose focus when executing all their functions.[145]

In sum, for the concurrency regime to be effective, it requires a consensual model with a highly mature and integrated system of power sharing. For instance, while the United

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[143] *Id*.
[144] DABBAH, Maher M. *op. cit*. pp. 119-124; OECD. *Independent Sector Regulators.* p. 23; OECD. *Interactions between competition authorities and sector regulators.* p. 9; STERN, Jon. *op. cit*. p. 899.
[145] DABBAH, Maher M. *op. cit*. pp. 124-129; STERN, Jon. *op. cit*. p. 898; OECD. *Interactions between competition authorities and sector regulators.* p. 9; OECD. *Independent Sector Regulators.* p. 23.

Kingdom has implemented a concurrency set-up since the 1980s, until recently there were only few competition cases brought by the competition authorities and the sector regulators in regulated sectors. A reform in 2013 sought to further promote concurrency by encouraging regulators to make greater use of their concurrent powers and by giving the competition authority a more formal leadership role in helping them to do so. For this purpose, it was implemented a set of institutions and mechanisms for greater co-operation between the competition authority and the sector regulators on concurrency policy.[146]

1.4.2 Tools for co-operation

Regardless of the institutional set-up model in place, co-operation between competition authorities and sector regulators is an important instrument to increase consistency between their interventions. Co-operation may allow more efficient and better use of public resources, for example by reducing duplication of work and by sharing resources. Co-operation can also reduce the incentives for forum shopping, by which market players can select to which forum they submit their complaint or their merger, based on a perceived better chance of success. Additionally, co-operation can contribute to more pro-competitive sector regulation, as further discussed in Chapter 4.[147]

Moreover, co-operation allows authorities to exchange information and expertise. For example, sector regulators often collect granular firm-level data and have technical expertise that can help competition authorities to better understand a given industry and take well-informed decisions. Competition authorities, in turn, can assist sector regulators in assessing the impacts of their regulations on competition.[148]

Ultimately, co-operation can reduce jurisdictional and substantive conflicts when the powers of competition authorities and sector regulators overlap. On the other hand, limited co-operation is likely to lead to different – or even conflicting – decisions, or to under-enforcement, preventing competition authorities and sector regulators to achieve their objectives.

While co-operation occurs more frequently as regards competition advocacy, it is particularly relevant in enforcement cases, although authorities face more challenges in effectively co-operating in this area. Some of these difficulties relate to the lack of clear

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[146] DUNNE, Niamh. Concurrency; OECD. *Interactions between competition authorities and sector regulators.* p. 9; STERN, Jon. *op. cit*. pp. 882-883.
[147] OECD. *Interactions between competition authorities and sector regulators.* pp. 10-11.
[148] *Id*.

definition of responsibilities of each authority, absence of a legal framework establishing the need for co-operation or clear procedures for authorities to consult each other, legal limitations to the exchange of confidential information, lack of resources and trust between authorities.[149]

As regards enforcement cases, co-operation is more structured in merger control than in anti-competitive cases. In merger cases, interactions between competition authorities and sector regulators are often addressed in the legal framework and comprise two main models: (i) parallel reviews by both the competition authority and the sector regulator and (ii) full competence for merger control with the competition authority, which requests an opinion from the relevant sector regulator on the transaction.[150]

Co-operation between sector regulators and competition authorities are often envisaged in legal formal mechanisms (legislation and/or formal agreements, namely Memoranda of Understanding – MoUs), but the practice of many authorities suggests that informal co-operation is more common.[151]

Indeed, the legislation (either the competition law or the legislation dealing with regulated sectors) usually provides the legal basis for co-operation between competition authorities and sector regulators. These legal provisions typically establish generic co-operation (e.g. consultation on issues that affect both the competition authority and the sector regulator), without defining how it should happen in practice. In addition, these rules more commonly allow authorities to co-operate, rather than to require them to co-operate – even though there are examples in which co-operation is compulsory.[152]

Moreover, competition authorities and sector regulators often sign formal agreements (MoUs), which spell out in more details how co-operation should take place. Although MoUs do not guarantee that co-operation will happen in concrete cases, they provide authorities with a more formal framework and indicate a willingness of the authorities to engage in dialogue. While MoUs are frequently not legally enforceable, they are shaped by the authorities themselves, better reflecting their experience. MoUs can also clarify the mandates of authorities when the legislation is not clear, helping them to better interact with each other.[153]

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[149] JENNY, Frédéric. *op. cit*. p. 21; OECD. *Interactions between competition authorities and sector regulators.* pp. 27-30.
[150] OECD. *Interactions between competition authorities and sector regulators.* p. 31.
[151] *Ibid.* pp. 12-20; OECD. *Independent Sector Regulators.*
[152] OECD. *Interactions between competition authorities and sector regulators.* p. 12.
[153] *Id*. pp. 12-14.

As for the methods of co-operation envisaged in these formal mechanisms, the most common instruments are notifications, consultations, information sharing, working groups and staff exchanges.

Competition authorities and sector regulators are required to notify each other when they become aware of potential violations of sector regulation or competition law, respectively. Although this arises as a general duty of public officials, specific legislations or MoUs often stress the need for notification. Notifications aim to guarantee enforcement against harmful behaviours even if they are detected by an authority who has no competence to investigate and sanction such practices.[154]

Consultations are also common, through which competition authorities ask for opinions of sector regulators when dealing with cases in a regulated sector or vice-versa. This enables competition authorities or sector regulators to benefit from the counterpart's expertise, as well as to foster consistency between competition and regulatory interventions.[155]

Other useful co-operation instrument is information sharing, ensuring access to information already collected by another authority. This can accelerate interventions by competition authorities or sector regulators. In addition, as already mentioned, sector regulators regularly collect information on regulated sectors, and if these data are exchanged with competition authorities the burden of information requests on market players may be reduced. While public information can be freely shared, there may be obstacles in exchanging confidential information.[156]

Working groups of members from the competition authority and sector regulators are also a tool to increase communication and boost discussions between them, enabling the establishment of common understanding and approach. Working groups may allow more general discussions or focus on specific cases, as well as promote training activities. Besides, staff exchanges between competition authorities and sector regulators promote share of expertise and transfer of knowledge, which may help authorities to reach shared views and to strengthen relationships between officials.[157]

Beyond the interactions provided for in legal formal mechanisms (legislation and/or MoUs), competition authorities and sector regulators usually undertake a series of other co-operation activities, such as keeping each other informed of the progress of cases of mutual

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[154] *Id*. p. 14.
[155] *Id*. pp. 14-15.
[156] *Id*. pp. 15-17.
[157] OECD. *Interactions between competition authorities and sector regulators.* pp. 17-19; OECD. *Independent Sector Regulators.* p. 25.

interest, ad-hoc meetings to debate procedural or substantive topics and informal information exchanges. These actions not explicitly covered by legal instruments are called informal co-operation, which seems to account for the most common type of interaction between competition authorities and sector regulators in practice.[158]

The way competition authorities and sector regulators interact varies across jurisdictions (and sometimes even across different sectors within the same jurisdiction), according to their legal and institutional context, reflecting their views about the relationship between competition law and sector regulation.[159] Indeed, the closer the interactions are, the more complementary competition law and sector regulation are perceived to be.

In Brazil, although some sector-specific laws already provided for co-operation between CADE and the corresponding sector regulator (e.g. Law No. 11.182/2005 on civil aviation), Law No. 13.848/2019 (Law of Regulatory Agencies) established a uniform legal framework to govern the interactions between CADE and the federal sector regulators. On the one hand, regulatory agencies shall monitor market practices within their respective industry to assist competition authorities (particularly CADE) to ensure compliance with competition law. Whenever a sector regulator becomes aware of a fact that may constitute an anti-competitive behaviour, it shall inform CADE. In addition, CADE may request sector regulators to issue an opinion related to the industry they cover to help its competition enforcement activities. On the other hand, CADE shall notify the respective regulatory agency of decisions taken regarding its sector (either in merger control or anti-competitive practices investigations).

Moreover, there are some MoUs signed between CADE and some sector regulators (for instance, the water transportation, the telecommunications and the oil regulators).[160] The absence of MoUs, nevertheless, does not prevent effective co-operation. This is particularly the case in the civil aviation sector, where CADE and ANAC have been carrying out close interaction over the years, resulting in relevant pro-competitive reforms in the civil aviation industry, despite the absence of an MoU. Some of these reforms will be discussed in Chapters 2 and 3.

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[158] STERN, Jon. *op. cit.* p. 896; OECD. *Interactions between competition authorities and sector regulators.* pp. 19-20.
[159] OECD. C*ompetition Enforcement and Regulatory Alternatives.* p. 6.
[160] All MoUs signed between CADE and sector regulators are available at: https://www.gov.br/cade/pt-br/acesso-a-informacao/convenios-e-transferencias/acordos-nacionais/acordos-com-agencias-reguladoras.

1.5 Conclusion of Chapter 1

Competition law and sector regulation are two instruments of state intervention in the economy, aiming to guarantee that markets work well. On the one hand, competition law intends to prevent anti-competitive accumulation of market power and to control its exercise in order to ensure lower prices, higher quality, greater choice and innovation. On the other hand, sector regulation seeks to impose obligations on business behaviour in specific economic sectors to tackle market failures and/or achieve non-economic objectives, such as safety and environmental protection.

While in the past competition law and sector regulation were mainly regarded as opposed market mechanisms, it is increasingly accepted that they are complementary tools, particularly in the context of liberalisation and deregulation reforms taking place since the late 1980s in various jurisdictions and sectors. In practice, however, the relationship between competition law and sector regulation is complex and volatile, and although they often complement each other, there are also instances of conflicts.

Competition law and sector regulation typically apply concurrently to market conducts in regulated sectors. Nonetheless, in some circumstances sector regulation can prevail over competition law, exempting certain behaviours from competition law enforcement, either explicitly or implicitly (the so-called regulated conduct defence).

The relationship between sector regulation and competition law is also reflected in the institutional framework that sets out how such tools are applied. Most jurisdictions adopt a set-up where an independent authority is responsible for enforcing competition law across all sectors of the economy (i.e. competition authority), while separate bodies apply sector regulation (i.e. sector regulators). Nevertheless, other options are also possible, for instance by empowering a single authority to apply both competition law and sector regulation or by granting concurrent jurisdiction to enforce competition law to competition authorities and sector regulators.

Irrespective of the institutional framework in place, competition authorities and sector regulators must interact closely to ensure that regulatory and competition policies are aligned. There exist different formal tools for co-operation, such as notifications, consultations, information sharing, working groups and staff exchanges, although informal co-operation is the most common form of interaction between competition authorities and sector regulators in practice.

2. COMPETITION BETWEEN AIRPORTS

While in the past airports were considered as a natural monopoly, they are increasingly facing competition from other airports. In this context, this chapter explores key discussions regarding competition between airports. After an overview of the shift in the economics of airports (2.1) and of the major airport management models (2.2), it examines the following topics: scope of competition between airports (2.3); economic regulation of airport charges (2.4); common ownership of airports (2.5); and competition between airports in the same metropolitan area (2.6).

2.1 From natural monopolies to a competitive market

Until the end of the 1980s, there was a consensus among governments, industry operators and academics that airports were natural monopolies, to both airlines and passengers. In this regard, airports were not subject to competitive forces, and therefore they were perceived as passive service providers that could not do much to increase demand for their services or divert demand from other airports.[161] For that reason, they were historically owned and managed by the government, as described in section 2.2 below.

Nevertheless, this vision has been increasingly challenged since the end of the 1980s, and many have begun to argue in favour of the existence of competition between airports. This shift has been largely driven by the liberalisation/deregulation of civil aviation markets, carried out in many jurisdictions over the last decades of the 20th century and the first decades of the 21st century. This process has profoundly changed the airport industry, with a growing trend towards the participation of the private sector in the ownership and operation of large airports, particularly in Europe, Asia-Pacific and Latin America-Caribbean.[162]

Indeed, until the 1970s, the civil aviation industry was subject to substantial economic regulation, as air transport was considered a public utility, characterised as an industry of national interest. Airfares were often regulated and there was no price competition, which meant

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[161] TRETHEWAY, Michael; KINCAID, Ian. Competition between airports: Occurrence and Strategy. In FORSYTH, Peter; GILLEN, David; MÜLLER, Jürgen; NIEMEIER, Hans-Martin (ed.). *Airport Competition: The European Experience*. Farnham: Ashgate Publishing, 2010; BEESLEY, M. E.; LITTLECHILD, S.C. The Regulation of Privatized Monopolies in the United Kingdom. *The RAND Journal of Economics*, v. 20, n. 3, 1989. pp. 454-472. Available at: https://www.jstor.org/stable/2555582; BARRETT, Sean D. Airport competition in the deregulated European aviation market. *Journal of Air Transport Management*, v. 6, n. 1, 2000. Available at: https://www.sciencedirect.com/science/article/pii/S0969699799000186.

[162] ACI. *op. cit*. p. 6.

that airlines flying the same route could not charge different rates for the same class of customer. In addition, new entry was usually subject to a strict analysis whether the applicant met the public interest, convenience and necessity. Further, in many jurisdictions, airlines could not freely decide which routes they would operate, since those needed to be allocated by the regulator. Each airline received profitable long hauls and less lucrative short hauls to ensure the firm's stability. In some city-pair markets, there was a monopoly to compensate the airline for other unprofitable routes. In many jurisdictions, airlines were government owned, often operating public monopolies. Otherwise, they were subject to regulation of profits. In most cases, this tight regulation has resulted in high prices, low productivity, weakened incentives to minimise costs and overall low efficiency.[163]

From the late 1970s, civil aviation, and air transport in particular, underwent liberalisation and deregulation reforms, first in the United States and then in other jurisdictions, including in Europe and Brazil.[164] Such reforms have allowed route and airfare competition, leading to consumer welfare gains, including more airlines and lower airfares.

In 1978, the United States implemented a major reform through the Airline Deregulation Act, which made the definition of fares competitive, gave airlines almost unlimited route authority and opened up the market to free entry by new firms.[165] The European Union started a three-stage process (in 1987, 1990 and 1992) to liberalise the air transport sector and create a single market for air transport. These initiatives removed all commercial restrictions on airlines flying within the European aviation market, including on routes, number of flights, setting of fares, as well as ownership and control of airlines.[166]

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[163] MCCRAW, Thomas K. *op. cit.;* FORSYTH, Peter. The Gains from the Liberalisation of Air Transport: A Review of Reform. *Journal of Transport Economics and Policy*, v. 32, n. 1, 1998. Available at: https://www.jstor.org/stable/20053756. pp. 73-75.

[164] It should be noted that those reforms addressed essentially the domestic market and, in the case of the European Union, the European market. Foreign airlines are usually still not able to enter domestic markets, and there are restrictions on foreign ownership of domestic airlines (with some exceptions, such as in Chile and Brazil). International routes are typically governed by Air Service Agreements (ASAs), bilateral treaties signed between the jurisdictions involved. Traditionally, such agreements provided for the number of flights and airlines that could operate. More recently, however, there has been a trend towards less restrictive ASAs and the proliferation of open skies agreements. Open skies refer to agreements with the following elements: (i) no limitation on flights or capacity between the contracting states (third and fourth freedoms of the air); (ii) no restrictions on flights or capacity between the contracting states and a third one (fifth freedom of the air); (iii) multiple designations of airlines; (iv) double disapproval pricing; (v) promotion of liberalisation for charter flights, cargo and computer reservation systems; and (vi) performance of own support functions at airports in the territory of the other party (ITF. *Liberalisation of Air Transport, ITF Research Reports*. Paris: OECD Publishing, 2019. Available at: https://www.itf-oecd.org/sites/default/files/docs/liberalisation_air_transport_1.pdf. 40/41; FORSYTH, Peter. *op. cit.* pp. 75-75).

[165] MCCRAW, Thomas K. *op. cit.;* ITF. *op. cit.* pp. 47-49.

[166] BUTCHER, Louise. *Aviation: European liberalisation, 1986-2002*. Research Briefing, SN/BT/182, Business and Transport, 2010. Available at: https://commonslibrary.parliament.uk/research-briefings/sn00182/; COPENHAGEN ECONOMICS. *Airport Competition in Europe.* Copenhagen: Copenhagen Economics, 2012.

In Brazil, the liberalisation of air transport was carried out progressively during the 1990s and 2000s. Over the years, the restrictions on entry, as well as the ability to set airfares and explore any desired route were abolished. These changes were finalised in the late 2000s, following the creation, in 2006, of ANAC, an independent regulatory agency responsible for overviewing the civil aviation sector. Since then, the Brazilian air transport industry operates as a competitive market.[167]

The liberalisation/deregulation of air transport has resulted in more efficiency of airlines through reorganisation and new entry, with the development of new business models to serve different segments of the market, allowing a great differentiation of prices and services. In turn, this led to a significant drop in prices and a sharp increase in the volume of passengers and freight carried.[168] In Brazil, for example, between the early 2000s and late 2010s, airfares reduced more than 50% and the number of passengers more than tripled.[169]

Among the new business models that emerged in this new environment, low-cost carriers (LCCs) are certainly one of the most disruptive, providing effective competition to legacy carriers. Southwest Airlines in the United States can be considered the first LCC, followed by many others worldwide, particularly in Europe.[170]

The term LCC covers a broad set of business models with their own specificities, but the following characteristics are usually shared among them: (i) point-to-point operations (i.e. without connecting flights); (ii) single aircraft type; (iii) predominant use of secondary airports; (iv) only a single one-way fare available for each flight; and (v) single class cabin and no frills (e.g. complimentary in-flight services).[171]

Available at: https://copenhageneconomics.com/wp-content/uploads/2021/12/Copenhagen-Economics-Study---Airport-Competition-in-Europe.pdf. p. 14.

[167] OLIVEIRA, Alessandro. *Transporte aéreo: economia e políticas públicas*. São Paulo: Pezco, 2009. pp. 79 ff.; GUARANYS, Marcelo Pachedo dos. *Anáise Jurídica da Política Regulatória de Transporte Aéreo no Brasil (2000-2010).* University of Brasilia, Master's Thesis, Faculty of Law, 2010. Available at: https://repositorio.unb.br/handle/10482/9743. pp. 23 ff.

[168] ITF. *op. cit.* pp. 14.

[169] ANAC, *Dados Estatísticos.* 2023. Available at https://www.gov.br/anac/pt-br/assuntos/dados-e-estatisticas.

[170] In Brazil the emergence of LCCs has been more limited. While some airlines have been established as an LCC (e.g. GOL), they have changed over time acquiring many elements of legacy airlines (OLIVEIRA, Alessandro. *op. cit.* pp. 66-68; CARNEIRO, Luis Gustavo Pinheiro Loureiro. *Temos empresas aéreas brasileiras low-cost? Características das principais empresas aéreas brasileiras e um estudo sobre empresas aéreas tradicionais, low-cost, e ultra low-cost*. Textos para Discussão n. 2, ANAC, 2021. Available at: https://www.gov.br/anac/pt-br/centrais-de-conteudo/publicacoes/textos-para-discussao/textos/td-02-temos-empresas-aereas-brasileiras-low-cost.pdf). Recent regulatory reforms, in particular the opening of the Brazilian civil aviation market to foreign investors, aimed at encouraging the establishment of LCCs in Brazil. As a result, the market is expected to undergo changes in the coming years, potentially with the entry of LCCs.

[171] KLOPHAUS, Richard; CONRADY, Roland; FICHERT, Frank. Low cost carriers going hybrid: Evidence from Europe. *Journal of Air Transport Management*, v. 23, 2012. Available at: https://linkinghub.elsevier.com/retrieve/pii/S0969699712000166. p. 54.

LCCs substantially changed the market by offering very low airfares and extensive use of ancillary fees.[172] By offering more point-to-point traffic, LCCs allow passengers to bypass hub airports. LCCs usually operate at secondary airports to avoid high fees and congestion that would keep the aircraft on the ground for a longer period, reducing unproductive time and flying as much as possible.[173] LCCs have more flexible business model, being more mobile and cost-focused, and requiring fewer airport facilities, which reduced the cost of developing or expanding airports. In fact, LCCs are ready to take their operations elsewhere if service, price and market conditions are more favourable.[174]

In turn, in response to increased competition, legacy (or full service) airlines also started changing, moving towards hub-and-spoke networks to take advantage of cost and demand-side economies and also to prevent new entry. These airlines have employed large equipment and benefited from high load factors. This has given legacy airlines a stronger countervailing power vis-à-vis airports, which are often dominated by such air carriers.[175]

In addition, there has been a trend towards consolidation (i.e. mergers and acquisitions) of legacy airlines, as well as the development of airline alliances (where airlines co-operate but remain independent). This has resulted in the formation of global networks by multi-hub carriers, allowing them to better manage capacity with more base options, even if their hub base (or bases) remains their main focus. This also gives legacy airlines more buyer power vis-à-vis airports.[176]

To respond to increased competition, legacy airlines have also seek to become more flexible, reducing costs and improving efficiency. For example, they have lowered wages, cut jobs, used temporary crew, and changed rout frequencies and routes. Although such airlines are less free to switch routes than LCCs, they can change a spoke in their network by opening a new destination and closing another. Moreover, some of legacy airlines have created their own low-cost subsidiaries or started to compete with LCCs offering cheap short-haul routes from secondary hubs.[177]

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[172] ITF. *op. cit.* pp. 56.
[173] BUTTON, Kenneth. Countervailing Power to Airport Monopolies. In FORSYTH, Peter; GILLEN, David; MÜLLER, Jürgen; NIEMEIER, Hans-Martin (ed.). *Airport Competition: The European Experience.* Farnham: Ashgate Publishing, 2010. pp. 59-75.
[174] COPENHAGEN ECONOMICS. *op. cit.* pp. 14, 16.
[175] FORSYTH, Peter. *op. cit.* p. 75; ITF. *op. cit.* pp. 276; BUTTON, Kenneth. *op. cit.* pp. 65-66; COPENHAGEN ECONOMICS. *op. cit.* p. 5.
[176] COPENHAGEN ECONOMICS. *op. cit.* pp. 5, 14; ITF. *op. cit.* pp. 74.
[177] COPENHAGEN ECONOMICS. *op. cit.* pp. 24, 30-31; OXERA. *The continuing development of airport competition in Europe*. Prepared for ACI Europe, 15 September 2017. Oxford: Oxera, 2017. Available at: www.oxera.com/wp-content/uploads/2018/07/The-continuing-development-of-airport-competition-in-Europe-report-for-ACI-Europe-1.pdf-1.pdf. p. 28.

Finally, aircraft technology developments (e.g. regional jets and advanced turboprops) also decreased the minimum efficient scale for operating profitable routes (both short and long-haul) between airport pairs that would previously be not feasible. This allowed airlines to expand the possibilities for bypassing hubs through secondary or smaller airports, increasing airlines' options.[178]

In this new reality, travel demand also changed, and passengers have more choice, not only among different airlines but sometimes among different airports as well. In some regions, for instance in Europe, most departing passengers have at least two different reasonable airport options (or even other transport means, such as high-speed rail). In Brazil, while there are still few airports with overlapping catchment areas, as discussed below, there has been an increased choice vis-à-vis transfer passengers (i.e. transfer passengers can now choose more than one hub airport). In addition, new routes and airports (or capacity growth of existing airports) have been implemented, providing more destination options. There has also been a growth in the number of leisure passengers, who are more price-sensitive and less time-sensitive than business passengers. This means that many travellers are open to switch destination, increasing competition between destination. Moreover, increased market transparency, particularly due to the internet (e.g. online travel agents that allow consumers to compare prices and make reservation), has provided consumers with more information regarding prices and routes, also increasing passengers' choices.[179]

All these changes in the air transport market have had a significant impact on airport activities. Airlines have become more active and flexible, with greater ability to switch airports and therefore increased bargaining power. Passengers also have more information and options at their disposal. In this new reality, airports are no longer considered passive service providers and are now subject to competitive forces. Indeed, airports are more and more constrained by airlines and passengers and need to compete with other airports for demand.[180]

To face this increasingly competitive and dynamic market, airports have become more commercially focused. For example, airport operators – especially in Europe – are employing significant staff and resources in marketing, both to retain airlines already operating at the airport and to attract new airlines or routes. Airports often conduct market analysis to persuade airlines of the demand and financial feasibility of routes flying to/from the airport. Additionally, airports engage in price competition, for instance by reducing or not increasing charges to

[178] COPENHAGEN ECONOMICS. *op. cit.* pp. 26-27.
[179] *Id.* pp. 52 ff.; OXERA. *op. cit.* pp. 30-31.
[180] COPENHAGEN ECONOMICS. *op. cit.* p. 3.

airlines. They also improve service quality and invest in capacity, in order to attract more passengers and airlines.[181]

In this context, airports have become complex and multi-product enterprises requiring a broad range of business competencies and skills. Today, airports are multi-sided platforms, engaged in commercial relationships not only with airlines and passengers, but also other stakeholders, such as cargo shippers and forwarders, ground handlers, air navigation service providers, as well as firms providing retail, hotel and other commercial services. Passengers choose airports offering the most convenient and cheapest flights; airlines choose airports attracting the greatest number of potential passengers. More passengers will result in more profit to airlines, which in turn will provide better services, also helping increase the number of passengers.[182]

The same rationale also applies to the relationship between commercial providers and passengers, although such activities are not vital for the survival of the platform but instead constitute a platform periphery that is loosely connected to the platform core (i.e. airlines-airport-passenger).[183] A similar approach can also be established between cargo shippers and forwarders, ground handlers or air navigation service providers and airlines.

In this multi-sided market perspective, revenues come from each side of the platform (airlines, passengers, cargo shippers and forwarders, ground handlers, retailers etc.), and the airport operator plays a relevant role as a distribution centre, attracting all sides of the market, connecting them and adding value to all sides by internalising network effects existing between the various groups.[184]

In the past, airports were seen as a factor of production in an airline's production function. Airport revenue used to come from only one side of the platform (the airlines), and

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[181] OXERA. *op. cit.* p. 43, 62-65; TRETHEWAY, Michael; KINCAID, Ian. *op. cit.* p. 119; COPENHAGEN ECONOMICS. *op. cit.* pp. 80-100; ACI EUROPE. *Fierce Competitors, Fragile Foes Competition between Airports in Europe*. ACI, 2023. Available at: https://www.aci-europe.org/downloads/resources/Publication%20competition%20digital.pdf. p. 5.

[182] BRILHA, Nuno Mocica; NOBRE, Helena. Airports as platforms: towards a new business model. *International Journal of Business Performance Management*, v. 20, n. 4, 2019. Available at: https://www.inderscienceonline.com/doi/epdf/10.1504/IJBPM.2019.105234. p. 298; GILLEN, David. The evolution of airport ownership and governance. *Journal of Air Transport Management*, v. 17, n. 1, 2011. Available at: https://www.sciencedirect.com/science/article/pii/S096969971000089X. p. 11; PEREIRA NETO, Caio Mário da Silva; CASAGRANDE, Paulo Leonardo; LANCIERI, Filippo Maria; MORAES, Joaquim Nogueira Porto. Pro-competition rules in airport privatization: International experience and the Brazilian case. *Journal of Air Transport Management*, v. 54, 2016. https://www.sciencedirect.com/science/article/pii/S0969699716300862. p. 10; BETANCOR, Ofelia; RENDEIRO, Roberto. *op. cit.* p. 1.

[183] STAYKOVA, Kalina Stefanova; DAMSGAARD, Jan. *A Typology of Multi-sided Platforms: The Core and the Periphery*. ECIS 2015 Completed Research Papers, Paper 174, 2015. Available at: https://aisel.aisnet.org/ecis2015_cr/174. p. 8.

[184] BRILHA, Nuno Mocica; NOBRE, Helena. *op. cit.* p. 298; GILLEN, David. *op. cit.* pp. 11-12.

passengers were not considered a source of revenue regardless of the airlines. Under this perspective, aeronautical revenues levied on airlines accounted for most of airport revenue. Nevertheless, airports have increasingly focused on commercial activities, going beyond their traditional core-business services. By boosting non-aeronautical revenues (which are usually not regulated, as explained in section 3.4), airports can be less dependent on aeronautical revenues and even compensate a reduction of aeronautical charges to attract more airlines and passengers – and in turn increase non-aeronautical revenues. For instance, most of the largest airports worldwide generate between 45% and 80% of their total revenues from non-aeronautical services. This new commercial dimension is based on retail and service diversification, new competencies and new relationships with different partners, better monetising the airport infrastructure.[185]

In fact, airport activities are evolving, expanding is scale and scope. For example, the concepts of airport city and aerotropolis have emerged to refer to the integration of the airport's commercial and land use plans. Under this view, airports seek to optimise their infrastructure and their revenues by boosting their activities to the airport perimeter. The airport is therefore perceived as a multimodal transport hub integrated into a service-oriented environment. This includes, for example, more non-aeronautical services, such as hotels, shopping, conference centres, cultural and entertainment attractions, leisure and recreation venues, as well as office and logistics parks, not only for air travellers, but also businesses and consumers in general (e.g. employees and local residents).[186] Airports are now integrated with regional planning, transport systems and the regional or national economic context, acting as a wide multimodal transportation and commercial hub. To do so, they are developing new capabilities to increase their non-aeronautical competences (e.g. real estate) and engaging in wider collaborative relationships with strategic partnerships.[187]

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[185] GILLEN, David. *op. cit.* p. 11; ATRS. *Airport Benchmarking Report 2019: Global Standards for Airport Excellence*. Daytona Beach: Embry-Riddle Aeronautical University, 2019; BRILHA, Nuno Mocica; NOBRE, Helena. *op. cit.* pp. 299-300; OUM, Tae H.; FU, Xiaowen. Impacts of Airports on Airline Competition: Focus on Airport Performance and Airport-Airline Vertical Relations. In ITF. *Competitive Interaction between Airports, Airlines and High-Speed Rail, ITF Round Tables, No. 145.* Paris: OECD Publishing, 2009. Available at: https://www.oecd-ilibrary.org/transport/competitive-interaction-between-airports-airlines-and-high-speed-rail_9789282102466-en. p. 38; GRAHAM, Anne. Airport Strategies to Gain Competitive Advantage. In FORSYTH, Peter; GILLEN, David; MÜLLER, Jürgen; NIEMEIER, Hans-Martin (ed.). *Airport Competition: The European Experience.* Farnham: Ashgate Publishing, 2010. p. 92.

[186] BRILHA, Nuno Mocica; NOBRE, Helena. *op. cit.* p. 300.

[187] *Ibid.* pp. 300-301; KASARDA, John D. The Way Forward. In KASARDA, John D. (ed.). *Global Airport Cities.* Twickenham: Insight Media, 2010.

Thus, airports are increasingly regarded as an urban pipe, lowering the time-cost frictions of space and distance, expanding firm and regional operational efficiency.[188] More than ever, airports operate as a platform connecting their suppliers, customers and partners locally, nationally and even globally, leading to increased network effects for the multiple sides of the market.

These changes in the way airports are perceived have led to – and at the same time have been reinforced by – a trend towards privatisation of airports and introduction of private capital into airport infrastructure. The United Kingdom pioneered this movement in the late 1980s, when seven major British airports were privatised. Since then, many other jurisdictions around the world have followed this experience and privatised or introduced some sort of private capital into airports, including Argentina, Australia, Belgium, Brazil, France, Germany, Italy, Japan, India, Mexico, New Zealand, Portugal, Thailand and South Africa.[189]

2.2 Management models

As mentioned above, airports were historically owned and managed by the state, either directly or through a state-owned enterprise (SOE), mainly due to the understanding that airports were natural monopolies. However, in recent decades, new operating models have emerged, as the private sector has taken on a greater role in the management of airports and the idea of competition between airports has gained prominence. This aims at achieving more efficiency in airport management – both regarding its operational and commercial dimensions – through private sector expertise, as well as new sources of private finance for major capital investments, especially when there are government funding limitations.[190]

Airport ownership and operation models can be classified into three main categories, according to the level of participation of public and private entities (although there are several variants of these groups): (i) government-owned airports; (ii) airport public-private

[188] KASARDA, John D. Aerotropolis. In ORUM, Anthony M. (ed.). *The Wiley Blackwell Encyclopedia of Urban and Regional Studies*. Hoboken: John Wiley & Sons, 2019. p. 2.
[189] DELOITTE; IATA. *op. cit*.; GRAHAM, Anne. Airport privatisation: A successful journey? *Journal of Air Transport Management*, v. 89, 2020. Available at: https://www.sciencedirect.com/science/article/pii/S0969699720305135.
[190] DELOITTE; IATA. *Airport Ownership and Regulation, IATA Guidance Booklet*. Montreal: Deloitte; IATA, 2018. Available at: https://www.iata.org/contentassets/fa95ede4dee24322939d396382f2f82d/airport-ownership-regulation-booklet.pdf. p. 27; ACI. *Policy Brief: Creating fertile grounds for private investment in airports*. Montreal: ACI World, 2018. Available at: https://store.aci.aero/product/policy-brief-creating-fertile-grounds-for-private-investment-in-airports. p. 5.

partnerships; and (iii) privately owned airports. These models vary not only as regards ownership and operation, but also control, access to cash flows and risk allocation.[191]

Each of these models has pros and cons, and each jurisdiction/region/airport should choose the most adequate model according to their specific objectives and contexts. These include their national economic situation (for instance, the availability of sufficient public funds), the expected traffic growth and the existing infrastructures.

Rather than assessing the advantages and disadvantages of each model, this section intends to provide only a brief overview of the existing set-ups, which is essential for understanding the following discussions concerning competition between airports.

2.2.1 Government-owned airports

Government-owned airports are those in which the ownership and operation are concentrated in the hands of the state. Originally, a government Department or Ministry (usually the Ministry of Transport) was in charge of airport ownership and operation. Given the technological development and specialisation in the airport industry, this model has faded out over the past decades. An alternative is a dedicated entity or agency within the government (e.g. a government trading agency), which lacks independence, as major decisions are still taken at the ministerial level. A more common approach is the corporatisation model, where the operation of an airport is allocated to a dedicated corporation (SOE) or airport authority, owned by the government. Corporatisation can increase incentives for improved financial and management performance of an airport.[192]

In 2016, this model was adopted in 67% of airports worldwide.[193] Examples include Narita International Airport in Tokyo, Berlin Brandenburg Airport and Changi Airport/Singapore (managed by a dedicated SOE), as well as JFK Airport in New York and Dubai International Airport (operated by a government ministry or agency).[194]

Until the early 2010s, nearly all airports in Brazil fell into this category and were managed by the Brazilian Airport Infrastructure Company (Infraero), a state-owned enterprise created in 1973 to develop, manage and operate civil airports, as per Law No. 5.862/1972. In

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[191] DELOITTE; IATA. *op. cit.*
[192] *Ibid*. pp. 13-16.
[193] STEER DAVIES GLEAVE. *Study on airport ownership and management and the ground handling market in selected non-EU countries*. London: Steer Davies Gleave, 2016. Available at: https://transport.ec.europa.eu/system/files/2016-09/2016-06-airports-and-gh.pdf. p. 25.
[194] OECD. *OECD Competition Assessment Reviews: Brazil*. Paris: OECD Publishing, 2022. Available at: https://www.oecd.org/publications/oecd-competition-assessment-reviews-brazil-d1694e46-en.htm. p. 48.

2011, 66 Brazilian airports, accounting for over 95% of passenger traffic in Brazil, were managed by Infraero.[195]

2.2.2 Airport public-private partnership

In the Public-Private Partnership model, a private company is engaged in the operation of the airport, while its ownership remains with the government. There are several types of Public-Private Partnership sub-models, varying according to the degree of involvement of the private player in the operation of the airport.[196]

For example, under management contracts the private party is appointed for the day-to-day operation of specific functions or the airport as a whole. These contracts have usually a short duration and require no substantial capital investment by the private company. Rather than fixed capital investments, the private firm engages in working capital and establishment costs. The private player pays the government a fee for the right to operate the airport – or some of its activities – and collect the corresponding revenue.[197]

Concessions are, however, the most common public-private partnership sub-model, especially in capital intensive projects, where large investments are needed. In such cases, concession is often referred to as build-operate-transfer (BOT). Under a concession, the ownership of the airport physical assets also remains with the government, but the private party is granted the rights to operate them for a longer period of time (typically around 30 years) and receive the resulting revenue. The concessionaire has the financial risk and reward in the successful management and operation of the airport. At the end of the contract, the operation of the assets reverts back to the government. Under this sub-model, the private party contributes with both capital investment and operating expertise.[198]

67% of airports worldwide in 2016 were under a public-private partnership.[199] For example, this is the case of the following airports: Brussels and Copenhagen (majority private), Paris/CDG and Athens (majority public), Düsseldorf (equal public and private participation) and Albany (management contract).[200]

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[195] MCKINSEY & COMPANY. *Estudo do Setor de Transporte Aéreo do Brasil: Relatório consolidado*. Rio de Janeiro: McKinsey&Company, 2010. Available at: https://web.bndes.gov.br/bib/jspui/handle/1408/7666. p. 9.
[196] DELOITTE; IATA. *op. cit*. p. 6.
[197] *Ibid*. pp. 23-24; ACI. *op. cit*. p. 8.
[198] DELOITTE; IATA. *op. cit*. pp. 25-27; ACI. *op. cit*. p. 8.
[199] STEER DAVIES GLEAVE. *op. cit*. p. 25.
[200] OECD. *OECD Competition Assessment Reviews: Brazil*. p. 48.

In 2011, Brazil started a programme to introduce private-sector participation in the management of airports in order to ensure the necessary investments in airport infrastructure to meet a substantial growth in passenger traffic despite the fiscal restraints experienced by the government. At the time, several Brazilian airports were facing operational congestion because of limited capacity of runways, aprons and passenger terminals, and such restrictions would increase further as Brazil would host major international events, namely the 2014 FIFA World Cup and the 2016 Olympic Games. The programme sought to improve airport infrastructure (including capacity and quality) in Brazil while increasing competition between airports (see section 2.5.2).[201]

Brazil adopted build-operate-transfer concessions. During the term of the concession contract (usually 25 or 30 years), the government keeps the ownership of the physical assets, while the concessionaire takes the full use and administration of the airport (including its revenue, both aeronautical and non-aeronautical), invests in the airport and pays a fee to the government (at the beginning and throughout the execution of the concession contract). When the concession period ends, the government takes over the management of the assets and can grant a new concession. Under BOT concessions, the private player takes demand and revenue risks, and must finance large capital investments.[202]

The airport-concession programme in Brazil has been split into different phases (called concession rounds), as summarised in the table below. The first round, involving the concession of a mid-sized greenfield airport, was launched in 2011 as a pilot project. In 2012 and 2013, the second and third rounds awarded to private players the management of five of the largest airports in Brazil, which were then facing the worst operational congestion. In the second and third rounds the institutional set-up imposed Infraero to hold a 49% share in all winning consortia, aiming to guarantee the transfer of knowledge from the private operators to the state-owned enterprise. As this model did not achieve the intended objectives, leading to a more complex governance that undermined efficiency and increased costs (including to the government), the requirement of Infraero's participation was withdrawn since the following concession round (i.e. the fourth round in 2017), which awarded the operation of four airports. Since the fifth round, instead of an individual airport, a set of airports (called blocks) were awarded, mixing profitable and unprofitable airports, therefore implementing a cross-

[201] MCKINSEY & COMPANY. *op. cit.* pp. 9-11; OECD. *OECD Competition Assessment Reviews: Brazil*. p. 49.
[202] DELOITTE; IATA. *op. cit.* p. 26; OECD. *OECD Competition Assessment Reviews: Brazil*. p. 49.

subsidisation scheme. Three rounds were conducted under this model in 2019, 2021 and 2022, awarding nine blocks totalling almost 50 airports.[203]

Table 1. Airport concession rounds in Brazil

Concession round	Year	Airport(s)
First	2011	Natal/São Gonçalo do Amaranto (NAT)
Second	2012	Brasília (BSB)
		São Paulo/Guarulhos (GRU)
		Campinas/Viracopos (VCP)
Third	2013	Belo Horizonte/Confins (CNF)
		Rio de Janeiro/Galeão (GIG)
Fourth	2017	Florianópolis (FLN)
		Fortaleza (FOR)
		Salvador (SSA)
		Porto Alegre (POA)
Fifth	2019	Northeastern block: Recife (REC), Maceió (MCZ), João Pessoa (JPA), Aracaju (AJU), Campina Grande (CPV) and Juazeiro do Norte (JDO)
		Midwestern block: Cuiabá (CGB), Sinop (OPS), Rondonópolis (ROO) and Alta Floresta (AFL)
		Southeastern block: Vitória (VIX), and Macaé (MEA)
Sixth	2021	Southern block: Curitiba (CWB), Foz do Iguaçu (IGU), Navegantes (NVT), Londrina (LDB), Joinville (JOI), Bacacheri (BFH), Pelotas (PET), Uruguaiana (URG) and Bagé (BGX)
		Central block: Goiânia (GYN), São Luís (SLZ), Teresina (THE), Palmas (PMW), Petrolina (PNZ) and Imperatriz (IMP)
		Northern block I: Manaus (MAO), Porto Velho (PVH), Rio Branco (RBR), Cruzeiro do Sul (CZS), Tabatinga (TBT), Tefé (TFF) and Boa Vista (BVB)
Seventh	2022	General aviation block: Rio de Janeiro/Jacarepaguá (RRJ) and São Paulo/Campo de Marte (RTE)
		Northern block II: Belém (BEL) and Macapá (MCP)
		SP-MS-PA-MG block: São Paulo/Congonhas (CGH), Campo Grande (CGR), Corumbá (CMG), Ponta Porã (PMG), Santarém (STM), Marabá (MAB), Carajás Parauapebas (CKS), Altamira (ATM), Uberlândia (UDI), Montes Claros (MOC) and Uberaba (UBA)

Source: ANAC, https://www.gov.br/anac/pt-br/assuntos/concessoes.
Note: three airports under concession (i.e. Natal/São Gonçalo do Amaranto – NAT, Campinas/Viracopos – VCP and Rio de Janeiro/Galeão – GIG) have requested to return the airport before the end of the contract, based on Law No. 13.448/2017 (so-called "rebidding" or "relicitação" in Portuguese). In these cases, a new public tender is conducted to award the assets to a different firm with a new concession contract. In May 2023, Natal/São Gonçalo do Amaranto (NAT) was awarded to a new company, who took the management of the airport. The awarding of the other two airports is still ongoing.

[203] MACHADO, Bernardo Vianna Zurli; INGOUVILLE, Martin; DAMASCENO, Thiago Machado; SALLES, Daniel Cardoso de; ALBUQUERQUE, Clarissa Taquette Vaz. A evolução recente do modelo de concessão aeroportuária sob a ótica da financiabilidade. *BNDES Setorial*, v. 25, n. 50, 2019. Available at: https://web.bndes.gov.br/bib/jspui/handle/1408/19101. pp. 7-65; SILVEIRA, Paulo Burnier da. Hybrid governance structure between public company and private partners: the case of Infraero in the Brazilian airline sector. *Revista Direito GV*, v. 14, n. 2, 2018. Available at: https://doi.org/10.1590/2317-6172201822. pp. 537-556; OECD. *OECD Competition Assessment Reviews: Brazil*. pp. 51-52. Currently, only one relevant Brazilian airport is still under Infraero's administration (i.e. Rio de Janeiro Santos Dumont – SDU).

2.2.3 Privately owned airports

Although much less common, there are some experiences with a full privatisation of airports. In such cases, the government loses ownership control in perpetuity, and the full responsibility for operation, capital improvements and maintenance is permanently transferred to the private player. Naturally, the government remains responsible for regulating airports, both from a technical and economic perspective.[204]

Full divestiture can be implemented through an initial public offering (IPO) or a private sale. In the first case, shares of the airport company are sold on the stock market, and the ownership of the airport manager may become dispersed among different parties. In a private sale, the airport is sold to a single player after a bidding process, that can be open to any interested party or closed to invitees only.[205]

Airports whose ownership remains with the government, but whose operations are transferred to private players through a long-term lease also fall under this category.[206]

Around 15% of airports worldwide were privately owned in 2016.[207] For instance, as mentioned above, the major airports in the United Kingdom were permanently divested to a private company in the end of the 1980s. Additionally, in Australia and Portugal, the main airports were transferred to a private player through long-term concessions (50 years with a 49-year extension option in Australia and 50 years in Portugal).

In Brazil, private players may own and operate, at their own cost and risk, public airports providing general aviation and/or air taxi services (i.e. business airports), under the authorisation regime, as discussed in section 2.6.2. Such airports are fully private but are not allowed to offer scheduled and non-scheduled air transport and therefore their economic significance is limited.

2.3 Scope of competition between airports

As mentioned above, airports may face and, in many cases, are already facing effective competition for different services and market segments. Among the areas where competition (either potential or effective) between airports can arise, the following ones can be highlighted:

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[204] DELOITTE; IATA. *op. cit.* p. 28.
[205] ACI. *op. cit*. pp. 7-8.
[206] *Ibid*. p. 8.
[207] STEER DAVIES GLEAVE. *op. cit*. p. 25.

(i) passengers in a shared local market; (ii) cargo; (iii) connecting passengers (hub airports); and (iv) airline services.[208-209]

The remainder of this section addresses in more details these areas where competition between airports can arise. However, one should note that the extent and intensity of such competition vary substantially according to different aspects (such as the legal and economic reality of a jurisdiction or region) and should be assessed case by case. While the analysis of specific airports is out of the scope of this thesis, it provides some inputs that can help to better understand how competition between airports can occur in practice.

2.3.1 Local passengers

The most intuitive and straightforward form of competition between airports is when they have overlapping catchment areas for passenger transportation, serving a shared local market. In such cases, airports are located in close proximity of each other and therefore compete for passengers within these locations (although each airport may focus on a specific market segment), forming the so-called multi-airport system (see section 2.6).[210] This means that passengers travelling from a specific origin or to a given destination may choose between two or more airports.[211]

Catchment areas (or hinterlands) refer to "a geographical space, within which the probability of selection is so high that the majority of potential passengers living in the region

[208] Tretheway and Kincaid also mention the existence of competition between airports for destination traffic, since airports would integrate the overall tourism package provided by a destination. In this sense, the quality, cost and scope of service offered by an airport would have an effect on the attractiveness of a destination. This would be relevant, for instance, for the convention and the cruise line markets. There are also other areas where airports can compete with other market players, such as other means of transportation (e.g. high-speed trains, which can impose significant competitive pressure on airports, although in Brazil they are non-existent) or off-airport providers of commercial services (e.g. retail shopping, restaurants and bars, car parks, hotels, office rentals and conference facilities) (TRETHEWAY, Michael; KINCAID, Ian. *op. cit.* pp. 120-123).

[209] It should be noted that although competition between airports exists in other continents, it is much stronger in Europe, in light of the characteristics of the market, including a densely populated region, geographically closed and served by several airports – many of which are privately owned – as well as by an extensive network of high-speed trains (FORSYTH, Peter; GILLEN, David; MÜLLER, Jürgen; NIEMEIER, Hans-Martin. Introduction and Overview. In FORSYTH, Peter; GILLEN, David; MÜLLER, Jürgen; NIEMEIER, Hans-Martin (ed.). *Airport Competition: The European Experience.* Farnham: Ashgate Publishing, 2010. p. 8). This explains why most research on competition between airports focuses on Europe.

[210] TRETHEWAY, Michael; KINCAID, Ian. *op. cit.* p. 121; OXERA. *op. cit.* p. 21.

[211] FORSYTH, Peter. Airport Competition: A Perspective and Synthesis. In FORSYTH, Peter; GILLEN, David; MÜLLER, Jürgen; NIEMEIER, Hans-Martin (ed.). *Airport Competition: The European Experience.* Farnham: Ashgate Publishing, 2010. p. 429.

decide on this particular airport".[212] The academic literature indicates that several elements should be considered to determine what is an airport's catchment area. These include the quality of airport access, frequency of offered flights and prices, which are the parameters that consumers usually take into account when choosing a given airport. The quality of airport access is nevertheless the most important element, particularly as regards access time and price (i.e. how long and how much does it cost to reach an airport), its relevance usually varying according to the flight length (long-, medium- or short-haul routes) and the type of passenger (business or leisure travellers). For instance, short-haul domestic flights typically have a smaller catchment area, while international long-haul flights lead to a greater catchment area. Likewise, catchment areas for leisure travellers are usually wider than those for business passengers. Moreover, catchment areas are dynamic structures and can vary over time, for instance due to the reduction in the time required to reach an airport because of the construction of new access infrastructures.[213]

There are no established criteria for defining catchment areas of airports and their overlaps, which should be analysed on a case-by-case basis. The most common method is producing isochrones maps indicating the area within a certain fixed distance or travel time from an airport. Overlapping isochrones would reflect the areas of competition between the concerned airports.[214]

For instance, the European Commission has considered that airports are substitutable if they are located within 100 km or one hour driving time. These thresholds are a conservative estimate of an airport's typical catchment area and are only a first proxy, meaning that a longer total journey time can be accepted, especially for leisure passengers, who are less time-sensitive.[215] In the United Kingdom, the Civil Aviation Authority (CAA) and the former Office

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[212] STROBACH, Daniel. Competition among Airports and Overlapping Catchment Areas: An Application to the State of Baden-Württemberg. In FORSYTH, Peter; GILLEN, David; MÜLLER, Jürgen; NIEMEIER, Hans-Martin (ed.). *Airport Competition: The European Experience.* Farnham: Ashgate Publishing, 2010. p. 262.

[213] STROBACH, Daniel. *op. cit.* p. 263; MORRELL, Peter. Airport Competition and Network Access: A European Perspective. In FORSYTH, Peter; GILLEN, David; MÜLLER, Jürgen; NIEMEIER, Hans-Martin (ed.). *Airport Competition: The European Experience.* Farnham: Ashgate Publishing, 2010. p. 16.

[214] WILTSHIRE, James. Airport competition: Reality or myth? *Journal of Air Transport Management*, v. 67, 2018. Available at: https://www.sciencedirect.com/science/article/pii/S0969699717301278. p. 243.

[215] See, for example, Case M.8869 – Ryanair/LaudaMotion, decision of 12 July 2018, available at: https://ec.europa.eu/competition/mergers/cases/decisions/m8869_704_3.pdf; Case M.8633 – Lufthansa/Certain Air Berlin Assets, decision of 21 December 2017, available at: https://ec.europa.eu/competition/mergers/cases/decisions/m8633_2370_3.pdf; Case No COMP/M.6663 – Ryanair/Aer Lingus III, decision of 27 February 2013, available at: https://ec.europa.eu/competition/mergers/cases/decisions/m6663_20130227_20610_3904642_EN.pdf; Case No COMP/M.4439 – Ryanair/Aer Lingus, decision of 27 June 2007, available at: https://ec.europa.eu/competition/mergers/cases/decisions/m4439_20070627_20610_en.pdf.

of Fair Trading (OFT) have used travel times as regards leisure (120 minutes) and business (60 to 90 minutes) passengers to determine catchment areas for UK airports.[216]

In Brazil, although CADE has already followed the EU caselaw (i.e. the 100 km/one-hour criteria) to determine airport catchment areas on some occasions,[217] it has also questioned whether these thresholds were adequate in other cases. In particular, CADE stated that airports located less than 100 km away could take more than 1.5 hours to reach, especially in cities with high population density and inefficient transport infrastructure. For instance, CADE considered that Rio de Janeiro/Santos Dumont and Rio de Janeiro/Galeão airports, as well as São Paulo/Congonhas and São Paulo/Guarulhos airports were not substitutable, at least for business travellers, even if they are located within less than 40 km.[218]

Fixed distance or travel time criteria are useful proxies for their simplicity and functionality but have limitations as they do not reflect the actual preferences and behaviours of passengers. Other more complex ways of determining the degree to which airport catchment areas overlap can be developed but are more cost and time intensive.[219]

For instance, the former UK Competition Commission (CC) has used data from CAA passenger surveys to understand their preferences by identifying the primary reason why they had chosen a given airport. When a relevant percentage of passengers from a specific area used a particular airport, it was assumed that all passengers from that area would be potential passengers at that airport. To determine overlapping catchment areas, the CC measured the percentage of passengers at a given airport who originated from areas whose passengers also accounted for a significant portion (at least 20%) of another airport traffic. This exercise was repeated for different market segments (e.g. leisure and business passengers).[220]

There are also economic studies that try to identify overlapping airport catchment areas with sophisticated empirical models. In general, they have indicated the strong preference of

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[216] CAA. *Catchment area analysis*. Working Paper, October 2011. Available at: http://www.caa.co.uk/default.aspx?categoryid=5&pagetype=90&pageid=7162.

[217] See, for example, TAM/LAN case, Merger file CADE No. 08012.009497/2010-84, decision of 14 December 2011.

[218] See Gol/Webjet case, Merger file CADE No. 08012.008378/2011-95, decision of 10 October 2012; and Azul/Trip case, Merger file CADE No. 08700.004155/2012-81, decision of 6 March 2013. More recently, CADE decided that there was no evidence to conclude that São Paulo/Guarulhos and Campinas/Viracopos airports were substitutable, but no additional criteria was established to define overlapping catchment areas (Latam/American Airlines case, Merger file CADE No. 08700.003715/2017-95, decision of 13 September 2017; and Delta/Latam case, Merger file CADE No. 08700.003258/2020-34, decision of 24 February 2021).

[219] WILTSHIRE, James. *op. cit.* p. 243.

[220] STARKIE, David. The Airport Industry in a Competitive Environment: A United Kingdom Perspective. In FORSYTH, Peter; GILLEN, David; MÜLLER, Jürgen; NIEMEIER, Hans-Martin (ed.). *Airport Competition: The European Experience.* Farnham: Ashgate Publishing, 2010. p. 301.

passengers for using their local airport, but relevant changes in relative prices could persuade them to travel to more distant airports.[221]

The emergence of LCCs have increased the room for competition between airports, especially in Europe and North America, where many smaller, secondary airports were developed in the last decades, attracting many airlines and passengers due to their low fares. Nevertheless, many secondary airports also have their own "primary" catchment areas. That is, for many passengers these airports are more convenient than the region's primary airport for its location (and not necessarily the lower prices).[222] In Brazil, for example, this could be the case to some extent of Campinas/Viracopos airport, which can be considered a secondary airport to São Paulo metropolitan area, but a primary airport to the city of Campinas and its own metropolitan area (with more than 3 million inhabitants).

It is also worth mentioning that even small overlaps of airport catchment areas can lead to increased competition (including vis-à-vis prices and quality) to their entire catchment areas. This is because airports are not able to segment passengers according to their residential/business location, and therefore cannot price discriminate between passengers based on their origin (i.e. offer more advantageous conditions to the passengers who can choose between two or more airports).[223] However, airports would not necessarily have incentives to dilute their revenues from part of their customers to win an increased share of other customers.[224]

There are many cities or metropolitan areas worldwide served by two or more airports, which can therefore compete for passengers and airlines. For example, this is the case in Chicago (O'Hare and Midway), New York (JFK, Newark, LaGuardia, MacArthur, Westchester, Stewart and Trenton–Mercer), Paris (Beauvais, CDG and Orly) and London (Heathrow, Gatwick, Stansted, London City and Luton). Although these airports commonly focused on a specific market segment (i.e. business or leisure passengers), they are usually considered as competitors.[225]

In Brazil, few cities are served by two or more airports which could therefore compete for a shared local market. In particular, this is the case of São Paulo (São Paulo/Congonhas, São Paulo/Guarulhos and Campinas/Viracopos), Rio de Janeiro (Rio de Janeiro/Santos Dumont and Rio de Janeiro/Galeão) and Belo Horizonte (Belo Horizonte/Confins and Belo

[221] WILTSHIRE, James. *op. cit.* p. 243.
[222] TRETHEWAY, Michael; KINCAID, Ian. *op. cit.* pp. 121-122.
[223] STARKIE, David. *op. cit*. p. 300.
[224] FORSYTH, Peter. Airport Competition: A Perspective and Synthesis. p. 429.
[225] TRETHEWAY, Michael; KINCAID, Ian. *op. cit.* p. 121.

Horizonte/Pampulha), as further discussed in section 2.6.1. As mentioned above, in some cases CADE has considered that these airports were not substitutable, at least for business travellers, which has traditionally been the focus of São Paulo/Congonhas and Rio de Janeiro/Santos Dumont airports, although this conclusion can be different in the future, as catchment areas are dynamic. Nevertheless, Brazilian civil aviation authorities have typically considered such airports as competitors.[226]

2.3.2 Cargo

Air cargo transportation contributes significantly to international trade, as it facilitates access to international markets and allow the globalisation of production. Despite being much more expensive than other modes of transport (e.g. air freight is usually 4 to 5 times more costly than road transport and 12 to 16 times more costly than sea transport), air transport has several advantages in terms of speed and reliability. It is particularly appropriate to "same-day" or "next-day" delivery services and transportation of urgent or time-sensitive goods, such as high-value electrical components, drugs and vaccines, as well as perishable products like food and flowers. For instance, around 90% of business-to-consumer e-commerce parcels are carried by air. Although the volumes of air cargo are not large, the values of goods transported by air are significantly relevant. In 2019, air freight represented less than 1% of the total tonnage, yet it accounted for around 35% of the total value in international trade (i.e. USD 6.5 trillion).[227]

In this context, transport of cargo is of paramount importance for many airlines around the world. For instance, air cargo contributed to 12% and 17% of airlines' total revenues in 2019 and 2022, respectively.[228]

There are two main types of air transport of cargo: by freighter aircraft whose full capacity is used to air freight ("all-cargo services") or by passenger aircraft that transport passengers on the main deck and cargo on their bellyholds ("combination services"). While the

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[226] See, for instance, SAC-PR. *Nota Técnica nº 33/DERC/SPR/SAC-PR*, of 20 September 2013. p.18.
[227] IHLG. *op. cit.* p. 23; ATAG. *op. cit.* p. 22.
[228] IATA. *IATA Annual Review 2023*. 2023. Available at: https://www.iata.org/contentassets/c81222d96c9a4e0bb4ff6ced0126f0bb/annual-review-2023.pdf. p. 6. In Brazil, air cargo contributed to 7% and 10% of airlines' total revenues in 2019 and 2022, respectively (ANAC. Anuário do Transporte Aéreo – Sumário Executivo – 2022. Brasilia: ANAC, 2023. Available at: https://www.gov.br/anac/pt-br/assuntos/dados-e-estatisticas/mercado-do-transporte-aereo/panorama-do-mercado/anuario-transporte-aereo. p. 15). In addition, air freight transport is also significant for many airports, although its relevance varies substantially across airports. However, it is difficult to collect and compare consistent data on airport's cargo revenue, since cargo services are often handled by airlines or cargo operators, with the airport only providing spaces and facilities (ATRS. *op. cit.*).

operation of combination services tends to follow passenger demand, all-cargo services have their own dynamics, which significantly influence the nature of competition between airports.[229]

When assessing competition between airports as regards air cargo, one must note that in the last decades there has been a consolidation in the freight forwarding industry, which increased their power and influence over air carrier routing decisions. While in the past airports focused on attracting air carriers, now they must attract freight forwarders, who in turn can bring their own market (i.e. air carriers). This may lead to the development of new alternative gateways and hubs that better serve freight forwarders' customers, which may not necessarily coincide with the existing passengers' gateways and hubs.[230]

Moreover, the operating costs of all-cargo carriers are usually lower than combination carriers, as they have reduced costs related to crew, reservation systems and use of terminals. Thus, airport charges account for a larger percentage of all-cargo carriers' total operating costs when compared to combination carriers, which is even more relevant considering that margins of former are lower than those of the latter. Consequently, airport charges have a greater influence on the routing decisions of all-cargo carriers, meaning that airports have greater ability to compete to attract such firms by offering better prices. Furthermore, the quality of the service – including the speed of customs clearance and inspections, transhipment facilities, as well as extended operating hours – is determinant when an all-cargo carrier decides which airport it will use, and therefore airports also compete for service quality.[231]

Air freight is highly price sensitive[232] and can readily switch to alternative routing if necessary. That is, minor price variations between different airports may result in traffic changes, usually on a daily basis. This is mainly because trucking complements air services – although it can also compete with them –, given its ability to transport products quickly and economically between competing gateways. In that sense, trucking provides arbitrage services,

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[229] TRETHEWAY, Michael; ANDRIULAITIS, Robert. Airport Competition for Freight. In FORSYTH, Peter; GILLEN, David; MÜLLER, Jürgen; NIEMEIER, Hans-Martin (ed.). *Airport Competition: The European Experience.* Farnham: Ashgate Publishing, 2010. p. 137.

[230] *Ibid*. pp. 140-141.

[231] *Ibid.* p. 144.

[232] Particularly when considering international air cargo, which is the most relevant dimension of the industry. For instance, in 2021 the volume of international air cargo represented around 80%, 70% and 55% of the total volume of air freight in the European Union (only extra-EU operations), Brazil and the United States, respectively (EUROSTAT. *Air transport statistics*. 2022. Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Air_transport_statistics#Air_freight_and_mail_transport_in_the_EU_increased_by_21.0_.25_between_2020_and_2021; ANAC. *Anuário do Transporte Aéreo – Sumário Executivo – 2022*. pp. 10-11; BTS/DOT. Air Cargo Summary Data (All), October 2002 - May 2023. Available at: https://www.transtats.bts.gov/freight.asp).

permitting the shippers to maintain their rates competitive between points, i.e. trucking can equalise air cargo rates among gateways. Thus, airport catchment areas are much wider for cargo than for passengers, and a particular shipment has an increased number of options, intensifying competition between airports vis-à-vis air freight. For example, New York airports can compete with airports in Toronto, Chicago, Philadelphia, Montreal and Boston. Frankfurt airport, in turn, compete with airports in Cologne, Paris, Amsterdam, Luxembourg and Brussels. [233]

In Brazil, for instance, potential or effective competition for international air cargo traffic was already considered to exist among São Paulo/Guarulhos, Campinas/Viracopos, Confins, Rio de Janeiro/Galeão and Brasília airports.[234] Likewise, it was argued that Florianopolis and Porto Alegre airports could compete for international cargo traffic in the South of Brazil, as well as Fortaleza, Natal and Salvador airports in the Northeast region.[235]

2.3.3 Connecting passengers (hub airports)

Airports may also compete for connecting traffic (i.e. transfer passengers). As mentioned in section 2.1, in the last decades airlines (particularly legacy carriers) started moving towards hub-and-spoke networks, which has been further increased by the consolidation of the industry and the development of airline alliances. Airlines decide to centralise their operations at one (or few) hub airport(s), because of economies of scope and density arising from higher frequencies, larger aircraft and joint usage of common facilities (e.g. lounges). Such hubs work as a connecting platform that allow passengers from a variety of origin airports to reach a greater number of destinations (spoke airports).[236]

Revenues from transfer passengers can be significant to airports. Indeed, connecting traffic accounts for a large percentage of total traffic handled at many major airports,[237]

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[233] TRETHEWAY, Michael; KINCAID, Ian. *op. cit.* p. 123; TRETHEWAY, Michael; ANDRIULAITIS, Robert. *op. cit*. p. 143.
[234] SAC-PR. *Nota Técnica nº 33/DERC/SPR/SAC-PR*, of 20 September 2013.
[235] SAC-PR. *Nota Técnica nº 21/DERC/SPR/SAC-PR*, of 10 November 2015.
[236] MÜLLER-ROSTIN, Christiane; EHMER, Hansjochen; HANNAK, Ignaz; IVANOVA, Plamena; NIEMEIER, Hans-Martin; MÜLLER, Jürgen. Airport Entry and Exit: A European Analysis. In FORSYTH, Peter; GILLEN, David; MÜLLER, Jürgen; NIEMEIER, Hans-Martin (ed.). *Airport Competition: The European Experience.* Farnham: Ashgate Publishing, 2010. p. 32.
[237] For instance, in 2018 connecting traffic accounted for 77%, 62% and 55% of total traffic at Panama City, Atlanta and Frankfurt airports, respectively (MAERTENS, Sven; GRIMME, Wolfgang; BINGEMER, Stephan. The development of transfer passenger volumes and shares at airport and world region levels. *Transportation Research Procedia*, v. 51, 2020. Available at: https://www.sciencedirect.com/science/article/pii/S2352146520308723. pp. 177).

although some secondary airports (operating as regional hubs) also take part in the connecting traffic market.[238] This suggests that attracting network airlines to establish a hub at the airport – and therefore increase connecting traffic – can be a relevant economic strategy for airports.

Connecting traffic allows hub airports to benefit from a greater number of destinations than it would have based on local demand alone, increasing their revenues.[239] This can also improve the quality of the services offered to local passengers, as well as provide more opportunities for cargo transport (combination services), enhancing the airport's competitiveness as a whole.

Establishing at a given hub airport entails costs for airlines, including sunk costs, reducing their incentives to switch to a different hub after they have already settled. Nevertheless, airports can significantly influence the decision of airlines regarding where to establish their hubs through better prices and quality (e.g. runway, and terminal capacity and facilities).[240]

Hub airports compete not only for airlines that consider them as substitutes, but also for passengers who perceive alternative routings through different hubs as effective substitutes. As connecting passengers are disloyal, they easily switch hub airports if they find better prices or service quality elsewhere.[241]

Unlike competition for local passengers, connecting traffic involves a much wider catchment area, meaning that competition comprises more airports and therefore tend to be more intense. In fact, many airports that are far enough to have overlapping catchment areas for local passengers may compete as hubs.[242]

In Europe, around 60% of all connecting flights could be flown via an alternative hub and major airports, even though located apart from each other. For instance, Amsterdam, Frankfurt, London/Heathrow and Paris/CDG airports are considered competitors for attracting transfer passengers.[243]

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[238] TRETHEWAY, Michael; KINCAID, Ian. *op. cit.* p. 122.
[239] BURGHOUWT, Guillaume. *Influencing Air Connectivity Outcomes*, Discussion Paper No. 2017-24, Prepared for the ITF Roundtable on Capacity building through efficient use of existing airport infrastructure, 9-10 March 2017, Querétaro. Paris: ITF, 2017. Available at: https://www.itf-oecd.org/sites/default/files/docs/influencing-air-connectivity-outcomes.pdf. p. 8.
[240] MÜLLER-ROSTIN, Christiane; EHMER, Hansjochen; HANNAK, Ignaz; IVANOVA, Plamena; NIEMEIER, Hans-Martin; MÜLLER, Jürgen. *op. cit.* p. 32; TRETHEWAY, Michael; KINCAID, Ian. *op. cit.* p. 123.
[241] FORSYTH, Peter. Airport Competition: A Perspective and Synthesis. p. 428; ACI EUROPE. *op. cit*. p. 10.
[242] *Ibid*. p. 261.
[243] OXERA. *op. cit.* pp. 20-21; ACI EUROPE. *op. cit*. p. 10. It is sometimes argued that even airports from different continents could compete for long-haul connecting traffic (e.g. European and Middle Eastern hubs). However, there is evidence showing that the main competition for connecting passengers remains within regions. See, for example, GROSCHE, Tobias; KLOPHAUS, Richard; SEREDYŃSKI, Adam. Competition for long-haul

In Brazil, competition between airports for connecting traffic is also intense. For example, it was stated that there was effective or potential competition for connecting passengers between Brasília, Campinas/Viracopos, Belo Horizonte/Confins, Rio de Janeiro/Galeão and São Paulo/Guarulhos airports,[244] as well as between Porto Alegre and Florianópolis airports and between Salvador, Fortaleza and Natal airports.[245]

Indeed, there are several concrete examples showing that Brazilian airports have competed for attracting airlines looking to establish hubs across the country. For instance, between 2015 and 2017, four airports (Salvador, Fortaleza, Natal and Recife) competed to be chosen by different airlines that were deciding where to set their hubs in the Northeast region of Brazil.[246]

2.3.4 Airline services

As mentioned in section 2.1, the increased competition between airlines, particularly in light of the progressive liberalisation of the industry and the emergence of LCCs, also had an impact on competition between airports. If in the past "the non-competing airlines used non-competing airports",[247] today airports compete to attract air carriers, both to operate new or existing routes, as well as to base their aircraft at the airport, including for aircraft maintenance.[248]

This can refer to network airlines, as regards their hubs (as discussed above) or their spokes, as well as point-to-point carriers (namely, LCCs), either for their operating base or only an end point. As previously discussed, although switching their hubs can be challenging,

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connecting traffic among airports in Europe and the Middle East. *Journal of Air Transport Management*, v. 64, Part A, 2017. Available at: https://www.sciencedirect.com/science/article/pii/S0969699717302880.

[244] SAC-PR. *Nota Técnica nº 33/DERC/SPR/SAC-PR*, of 20 September 2013.

[245] SAC-PR. *Nota Técnica nº 21/DERC/SPR/SAC-PR*, of 10 November 2015.

[246] BLOG DE JAMILDO. *Recife sai derrotado na disputa pelo Hub do Nordeste, diz jornal*. 28 May 2015. Available at: https://blogs.ne10.uol.com.br/jamildo/2015/05/28/recife-sai-derrotado-na-disputa-pelo-hub-do-nordeste/; DIÁRIO DO NORDESTE. *Azul opta por Recife; CE segue na disputa por hub da TAM.* 26 January 2016. Available at: https://diariodonordeste.verdesmares.com.br/negocios/azul-opta-por-recife-ce-segue-na-disputa-por-hub-da-tam-1.1480127; BLOG DE JAMILDO. *Ceará leva HUB da Air France/KLM/Gol para Fortaleza.* 5 October 2017. Available at: https://blogs.ne10.uol.com.br/jamildo/2017/10/05/ceara-leva-hub-da-air-franceklmgol-em-fortaleza/. It should be noted that at the time these airports were managed by a single player (SOE Infraero), which did not have incentives to compete. However, the local governments have played an active role in in the defence of their own airport, therefore suggesting the existence of active competition between such airports.

[247] BARRETT, Sean D. *op. cit.* p. 16.

[248] OXERA. *op. cit.* p. 20. While competition for attracting airline hubs can be covered under the section above on competition for connecting traffic, to a certain degree it may also concern competition for airline services, since hubs usually involve the setting of an operating base and sometimes an aircraft maintenance centre.

network airlines can more easily change a spoke in their system, opening a new destination or closing another one – which can also refer to a different airport within the same local market. Point-to-point airlines are even more footloose to open or close routes. In this context, the ability of airlines to switch airports, as well as to churn (open or close) their routes to allocate capacity increases their bargaining power vis-à-vis airports. Airlines choose the route offering the greatest profitability (including the airport cost), putting airports in competition with each other to make the best proposal. Similar to competition for connecting passengers, competition for airline services has also a broader geographic dimension than competition for local passengers, involving airports that are not geographically closed.[249]

In Europe there is a great number of routes that are opened and closed every year. In addition, many airlines expand their operations by filling in their network or adding capacity on existing routes. In fact, 20% of all routes in Europe are new every year and more than 55% experience a rise in capacity. While these route changes tend to be more related to experimentation with different routes than to commercial relationship between airlines and airports, they reflect the degree of flexibility of airlines and its potential to be used – including by threatening to switch airports.[250]

In light of their increasingly purchasing power, airlines can demand airports specific conditions, from service quality to level of charges. For example, an existing airline increasing its traffic volumes will seek volume-based incentives or discounts on passenger charges. Likewise, a new airline that may start operating at the airport will ask for incentives according to new route development.[251]

In fact, air carriers have now greater opportunities to negotiate with airports, which have become more proactive in pursing new airlines to enter the airport and encouraging airlines already operating at the airport to establish new services, either by setting up their operating base or serving as an end point on a network (spoke). For instance, airports have more and more provided promotional packages, including discounts, advertising and market research support.[252]

Especially in Europe, specific long-term contracts between airports and airlines, notably LCCs, have become a common practice. These contracts set charges for the long-term use of the airport infrastructure (usually much lower than the average published charges), as well as

[249] OXERA. *op. cit.* p. 20; COPENHAGEN ECONOMICS. *op. cit.* pp. 27-28; ACI EUROPE. *op. cit.* p. 10; STARKIE, David. *op. cit.* p. 297.
[250] COPENHAGEN ECONOMICS. *op. cit.* p. 31; ACI EUROPE. *op. cit*. p. 10.
[251] ACI EUROPE. *op. cit.* p. 4; OXERA. *op. cit.* p. 34.
[252] MORRELL, Peter. *op. cit.* p. 16; STARKIE, David. *op. cit.* p. 299.

the quality of the airport services (e.g. minimum turnaround times, the amount of marketing support that the airport will provide and a commitment of future investments by the airport).[253]

In Brazil, competition for airline services is more incipient, although it can be observed for example for the establishment of airlines' aircraft maintenance centres.[254-255] Nevertheless, competition for airline services has a great potential to be increased in the years to come. In fact, as mentioned in section 2.1, the emergence of LCCs – which have been the major driver of competition for airline services in Europe – within the Brazilian domestic market has been very limited for a number of reasons, such as regulatory burdens (e.g. requirement to offer all passengers one piece of free checked baggage), legal uncertainty, high number of consumer lawsuits and high prices of jet fuel (see section 3.3.2). One important regulatory barrier was recently abolished, when a 20% cap on foreign participation in Brazilian airlines was removed by a legislative reform in 2019.[256] Since then, foreign companies can invest and hold up to 100% stakes in Brazilian airlines, which is likely to incentivise the establishment of new LCCs in the country. This in turn should increase competition between airports for airline services.[257]

2.4 Economic regulation of airport charges

While airports have traditionally been regarded as natural monopolies, they have not always been subject to economic regulation, particularly price regulation. Until recently, most

[253] STARKIE, David. *op. cit.* p. 296.

[254] For example, in 2008 Trip (later acquired by Azul) moved its maintenance centre from Campinas/Viracopos airport to Belo Horizonte/Pampulha airport (O TEMPO. *Manutenção da Trip migra para BH*. 25 September 2008. Available at: https://www.otempo.com.br/economia/manutencao-da-trip-migra-para-bh-1.612090). Similarly, when GOL was selecting where to set its maintenance centre in the late 2000s, it initially intended to choose Brasilia airport but ultimately decided on Belo Horizonte/Confins airport (SAC-PR. *Nota Técnica nº 33/DERC/SPR/SAC-PR*, of 20 September 2013. p. 39). At the time, all those airports were managed by the same player (SOE Infraero), but the active behaviour of the local governments suggested the existence of effective competition to attract airlines.

[255] As well as for the establishment of hubs, which usually also involves competition for airline services, as described above.

[256] OECD. *OECD Competition Assessment Reviews: Brazil*. pp. 45-47.

[257] After this legislative reform, some foreign LCCs have showed interest in entering the Brazilian market, but the outbreak of the Covid-19 pandemic interrupted this process. Nevertheless, the negotiations for foreign LCCs to enter the Brazilian market have resumed in the midst of the industry recovery. See, for instance: O GLOBO. *Governo Lula quer atrair 5 empresas aéreas de 'baixo custo' e aposta na redução do preço das passagens*. 19 April 2023. Available at: https://oglobo.globo.com/economia/noticia/2023/04/governo-lula-quer-atrair-5-empresas-aereas-de-baixo-custo-e-aposta-na-reducao-do-preco-das-passagens.ghtml; AEROIN. *Ministro promete low-cost no Brasil até o final do ano, mas critica "adicionais" na passagem aérea*. 29 June 2023. Available at: https://aeroin.net/ministro-promete-low-cost-no-brasil-ate-o-final-do-ano-mas-critica-adicionais-na-passagem-aerea/; AVIACIONLINE. *Flybondi Targets Brazil: Exploring Opportunities in Domestic Low-Cost Market*. 19 July 2023. Available at: https://www.aviacionline.com/2023/07/flybondi-targets-brazil-exploring-opportunities-in-domestic-low-cost-market/.

airports were state-owned and managed, existing a presumption that they would not use their market power to increase prices and profits.[258]

Nonetheless, the process of introducing private-sector participation, including through privatisation, in the provision of airport services has raised concerns that airports may have incentives to engage in abusive behaviour.[259] Despite the existence of (at least some degree of) competition between airports – which varies case by case, as discussed above –, airports are still considered to hold a dominant position on many occasions, which could be used to increase prices, raise profits and achieve excessive returns.[260]

Indeed, many challenges in achieving actual competition between airports remain. Some of these challenges were already described in section 2.3. Others relate, for example, to high barriers to entry and exit of airports, including high costs (e.g. environmental, large amounts of land, authorisations from the government etc.), many of which are sunk. In practice, there are very few examples of entry and exit of airports in comparison to industries of similar size and structure. In addition, many airports face capacity constraints but cannot expand capacity due to geographical, environmental or socio-economic limitations, which may prevent them from competing more actively.[261]

Under this context, it is generally understood that competition law would not be enough to correct market failures within the airport market, such as market power (monopoly or dominance) with economies of scale, scope and density, asymmetric information, extremely valuable and durable sunk assets, as well as externalities. In this sense, economic regulation was introduced in several jurisdictions to mimic competition, promote efficiency (productive

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[258] FORSYTH, Peter; GILLEN, David W.; KNORR, Andreas; MAYER, Otto G.; NIEMEIER, Hans-Martin; STARKIE, David (ed). *The Economic Regulation of Airports: Recent Developments in Australasia, North America and Europe*. London and New York: Routledge, 2004. p. 16. In the United States, where most airports are owned by municipal governments and managed by not-for-profit airport authorities, airport charges are still seldom regulated, although the FAA has the power to do so (OUM, Tae H.; FU, Xiaowen. *op. cit.* p. 40). This is also the case in Sweden and Finland, where airports are state-owned and managed (CEG. *Effective regulation of airport market power: A report for Airlines for Europe and IATA*. 2018. Available at: https://www.iata.org/contentassets/fa95ede4dee24322939d396382f2f82d/ceg-airport-charges-report.pdf. p. 37).

[259] It should be recognised, however, that state-owned and managed airports might also have incentives (and the ability) to abuse their market power, although perhaps to a lower extent, since they usually do not seek profit maximisation.

[260] OUM, Tae Hoon; ZHANG, Anming; ZHANG, Yimin. Alternative Forms of Economic Regulation and their Efficiency Implications for Airports. *Journal of Transport Economics and Policy*, v. 38, n. 2, 2004. Available at: https://www.jstor.org/stable/20173054. p. 218; OUM, Tae H.; FU, Xiaowen. *op. cit.* p. 41; IATA. *Economic Regulation: The case for independent economic regulation of airports and air navigation service providers*. IATA Economics Briefing No. 6. 2007. Available at: https://www.iata.org/en/iata-repository/publications/economic-reports/economic-regulation/. p. 9; FORSYTH, Peter; GILLEN, David W.; KNORR, Andreas; MAYER, Otto G.; NIEMEIER, Hans-Martin; STARKIE, David (ed). *op. cit.* p. 16.

[261] FORSYTH, Peter. Airport Competition: A Perspective and Synthesis. pp. 431-432; MÜLLER-ROSTIN, Christiane; EHMER, Hansjochen; HANNAK, Ignaz; IVANOVA, Plamena; NIEMEIER, Hans-Martin; MÜLLER, Jürgen. *op. cit.* pp. 31 ff.

and allocative), protect users' interests (including quality of service and prices), allow self-financing and investment, as well as enable more competition between airlines, ultimately enhancing social welfare.[262]

As described above, the structure of airports' revenue is composed of two sources: aeronautical and non-aeronautical (or commercial) revenues. While the latter relates to a series of commercial activities (e.g. retail shopping, restaurants, car parks, hotels, conference facilities etc.), the former refers to the charges for aeronautical services (sometimes called airport tariffs), comprising access to aircraft-movement areas and passenger-processing areas. Airport charges are usually the component of airport revenue subject to economic control, since aeronautical activities are the core business of airports, where they would be more likely to abuse their market power. Non-aeronautical activities are run at a commercial basis and are usually contestable; therefore, their revenue is seldom regulated, although it may be taken into account when regulating aeronautical revenue (see section 3.4).[263]

Airport charges are levied on airport users for recovering the costs of providing facilities and services at the airport.[264] While these charges can vary across airports, they are typically classified into four broad groups: (i) landing charges (to cover operating costs involving the use of runways, taxiways, lighting and all aircraft movement areas); (ii) passenger processing charges (to cover costs related to the use of landside facilities by passengers, including construction, maintenance and cleaning); (iii) parking charges (usually based on the aircraft size or weight); and (iv) other charges (e.g. security, environmental, infrastructure and transfer charges, which in many airports are comprised within the former categories).[265]

Some authors argue that even if airports operate in an imperfect competition market and have market power (although this would not always be the case), they still would not have incentives to abuse this market power, and thus economic regulation would not be necessary.

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[262] MARQUES, Rui Cunha; BROCHADO, Ana. Airport regulation in Europe: Is there need for a European Observatory? *Transport Policy*, v. 15, n. 3, 2008. Available at: https://www.sciencedirect.com/science/article/pii/S0967070X08000097. pp. 163-164; VARSAMOS, Stamatis. *Airport Competition Regulation in Europe*. Alphen aan den Rijn: Kluwer Law International, 2016. p. 19; DELOITTE; IATA. *op. cit.* p. 49. For instance, the International Air Transport Association (IATA), the global trade association of airlines, advocates that economic regulation should be imposed on all airports. Nevertheless, the government or the regulator could exempt particular airports from stringent price regulation if proved, through a market contestability test, that such airports face enough competitive constraints to prevent them from exploiting any market power or are small airport operators of the relevant market (IATA. *Economic Regulation: The case for independent economic regulation of airports and air navigation service providers*. p. 10).

[263] VARSAMOS, Stamatis. *op. cit.* p. 7; OUM, Tae H.; FU, Xiaowen. *op. cit.* pp. 38-39; MARQUES, Rui Cunha; BROCHADO, Ana. *op. cit.* p. 167.

[264] ICAO. *ICAO's Policies on Charges for Airports and Air Navigation Services*. Doc 9082. Montreal: ICAO, 2009. Available at: https://www.icao.int/publications/Documents/9082_8ed_en.pdf. p. 1.

[265] VARSAMOS, Stamatis. *op. cit.* pp. 7-8.

This is because airports are multi-sided platforms, combining aeronautical and commercial activities. If they maximise aeronautical charges to obtain abnormally high returns of capital, the demand for flights (i.e. the total number of passengers) would reduce, and consequently non-aeronautical revenues would also decrease. In other words, in light of the increasing importance of non-aeronautical revenues, airports would set aeronautical charges lower than they would if aeronautical services were their only activity.[266]

This view is nevertheless criticised, since even though commercial revenues provide airports with a relevant motivation to enhance economic efficiency and reduce aeronautical charges, in the absence of economic regulation they would still not set such charges at the socially optimal level. In this sense, regulation of aeronautical activities would still be necessary.[267]

The following sections provide an overview of the most usual regulatory methods for aeronautical charges worldwide, as well as how this has been addressed in Brazil.

2.4.1 Regulatory alternatives

The main common economic methods for regulating airport charges are rate of return (or cost-based) regulation and incentive regulation, which vary according to the incentives they offer regulated firms to reduce their costs. Hybrid methods also exist, mixing elements from rate of return and incentive regulations.[268]

Through rate of return regulation, airport charges are regulated based on a pre-established return rate set by the regulator, aiming at matching the total costs, including operating costs, depreciation and the cost of capital. Rate of return regulation ensures the airport a fair rate of return, allowing that all costs of the airport are remunerated, meaning that the airport operator can transfer all costs to its users. This regulatory method has been highly criticised as complex, expensive to manage and unresponsive (i.e. it does not encourage efficiency and innovation). For those reasons, rate of return regulation has become less common, although it is still used, for instance, in Greece, the Netherlands and Switzerland.[269]

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[266] STARKIE, David. Airport regulation and competition. *Journal of Air Transport Management*, v. 8, n. 1, 2002. Available at: https://www.sciencedirect.com/science/article/pii/S0969699701000151. pp. 68-71.
[267] OUM, Tae Hoon; ZHANG, Anming; ZHANG, Yimin. *op. cit.*
[268] MARQUES, Rui Cunha; BROCHADO, Ana. *op cit.* pp. 165-167.
[269] DELOITTE; IATA. *op. cit*. p. 52; HENDRIKS, Nienke; ANDREW, Doug. Airport Regulation in the UK. In FORSYTH, Peter; GILLEN, David W.; KNORR, Andreas; MAYER, Otto G.; NIEMEIER, Hans-Martin; STARKIE, David (ed). *The Economic Regulation of Airports: Recent Developments in Australasia, North America*

Incentive regulation involves methods that seek to encourage firms to increase efficiency and innovation, allowing them to obtain higher earnings, although assuming higher risks. The most common form of incentive regulation is price-cap regulation, according to which maximum prices for the regulated airport charges are set for a whole regulatory period (commonly between 3 to 8 years), based on operating costs, depreciation and the cost of capital, discounted by productivity gains. The price cap refers to the difference between the current airport's revenue and the expected revenue for the next regulatory period. Under this regime, the airport operator has the incentive to reduce costs, as well as to promote efficiency and innovation, as it keeps the gains from outperformance during the regulatory period. At the end of each regulatory period, the benefits from cost reduction are transferred to the users through lower charges during the subsequent regulatory period. Nevertheless, price-cap regulation also has some drawbacks, such as the long duration of regulatory periods and the risk of reduction of service quality and underinvestment. In any case, this is the most common method for regulating airport charges worldwide and is used, for example, in Belgium, Denmark, France, India, Italy, Mexico, Singapore and the UK.[270]

Another type of incentive regulation is revenue-cap regulation, which is similar to price-cap regulation, but establishes a ceiling for the airport's revenue (often as regards the average revenue per passenger) throughout the entire regulatory period. Under this regulatory method, the overall revenue is controlled, but not its structure or some parts thereof, which gives the airport operator more autonomy to set the structure of the charges. The same challenges raised regarding price regulation also apply to revenue-cap regulation, such as lengthy regulatory periods and the risk of underinvestment and lower service quality. Revenue-cap regulation is used, for example, in Ireland and Portugal.[271]

Besides rate of return and incentive regulations, airport charges can be regulated by a more light-handed regulatory approach, often price monitoring (also called threat of regulation). Under this method, airport charges are not directly regulated, but the performance of the airport is overseen by an independent regulator, which assesses prices and service quality in order to identify whether market power has been exploited. If this is the case, the regulator can impose corrective actions, including alternative regulation like incentive regulation. This method needs fewer resources and mitigates asymmetrical information issues related to predicting future

and Europe. London and New York: Routledge, 2004. p. 185; MARQUES, Rui Cunha; BROCHADO, Ana. *op cit.* p. 166; OECD. *OECD Competition Assessment Reviews: Brazil.* p. 66.

[270] MARQUES, Rui Cunha; BROCHADO, Ana. *op cit.* p. 166; DELOITTE; IATA. *op. cit*. p. 52; VARSAMOS, Stamatis. *op. cit.* p. 19; OUM, Tae H.; FU, Xiaowen. *op. cit.* p. 56; CEG. *op. cit*. p. 37.

[271] MARQUES, Rui Cunha; BROCHADO, Ana. *op cit.* p. 166; VARSAMOS, Stamatis. *op. cit.* p. 20.

efficient cost levels. Moreover, it gives airports more commercial flexibility to make new investment, respond to external shocks and prevent substantial fluctuations in profit levels.[272] However, price monitoring is criticised for not incentivising efficiency and timely and appropriate investment. In addition, to work well, this method requires effective sanction in case of exploitation of market power, as well as clear criteria for triggering such a sanction. Light-handed regulation has been introduced, for instance, in Australia, New Zealand and some British airports.[273]

Another dimension of economic regulation of airport charges relates to the use of a single-till or dual-till approach, according to whether price regulation considers or not non-aeronautical revenues – i.e. whether non-aeronautical activities are used to cross-subsidise aeronautical activities. Under the single-till system, the profits from non-aeronautical (commercial) revenues contribute to covering the cost of aeronautical activities and are taken into account when determining the level of airport charges (rate of return, price cap, revenue cap etc.), which are therefore lower. However, the single-till regulation reduces the incentives

[272] According to the Airports Council International (ACI), the entity representing the collective interests of airports worldwide, in the few cases where regulation is indeed necessary (which should be demonstrated by a cost-benefit test), light-handed oversight methods should be preferred, as they would foster the evolution of competitive forces, incentivising the market participants to find their own solution (ACI; InterVISTAS. *Research Report – The State of Play: Competition, Regulation, and Airport Charges*. Montreal: ACI, 2022. Available at: https://store.aci.aero/product/the-state-of-play-competition-regulation-and-airport-charges-regional-analysis/. p. 115).

[273] DELOITTE; IATA. *op. cit*. p. 53; OUM, Tae H.; FU, Xiaowen. *op. cit.* p. 57; IATA. *Economic Regulation: The case for independent economic regulation of airports and air navigation service providers*. p. 38; OXERA. *Light touch or right touch? An international review of airport regulation*. Agenda Advancing economics in business. 2013. Available at: https://www.oxera.com/wp-content/uploads/2018/03/An-international-review-of-airport-regulation.pdf. For instance, in 2002, Australia replaced price regulation with a light-handed regulation to its largest airports, while the other airports were freed from any kind of control. Major airports are required to provide the Australian Competition and Consumer Commission (ACCC) with annual financial statements in relation to the provision of aeronautical services and non-aeronautical services, including car park. Then, ACCC monitors the market to assess whether airports are pricing, investing and operating efficiently, in order to prevent abusive behaviour (PRODUCTIVITY COMMISSION. *Inquiry Report: Economic Regulation of Airport Services, Inquiry Report No. 57*. Canberra: Productivity Commission, 2011. Available at: https://www.pc.gov.au/inquiries/completed/airport-regulation/report/airport-regulation.pdf). The last complete monitoring report was published in 2020, when the ACCC reported that the monitored airports had made significant investments between 2018 and 2019 and maintained a rating of "good" for their overall quality of services in the period (ACCC. *Airport monitoring report: 2018-19*. Canberra: ACCC, 2020. Available at: https://www.accc.gov.au/system/files/1655_Airport%20monitoring%20report_D09.pdf). Since then, due to the Covid-19 pandemic, the monitoring was limited to the airports' economic recovery. The ACCC has resumed the analysis of service quality for the monitoring period of 2022-2023 and the corresponding report will be published in 2024 (ACCC. *Airport monitoring report: 2021-22*. Canberra: ACCC, 2023. Available at: https://www.accc.gov.au/about-us/publications/serial-publications/airport-monitoring-reports/airport-monitoring-report-2021-22).

of the airport to foster non-aeronautical activities and distorts capacity investment. Projecting future commercial revenues may also be challenging.[274]

Dual-till regulation considers aeronautical and non-aeronautical activities as two separate business branches, with airport charges being based solely on the cost of aeronautical services. Non-aeronautical activities are either unregulated (which is more common) or regulated separately (sometimes with only some of the non-aeronautical services being subject to regulation). Although dual-till regulation tends to increase airport charges for users, under this method charges better reflect costs, maximising the airport value, incentives to investment and economic efficiency. While single-till regulation has been prevalent in Europe, in recent years there has been a trend towards dual-till approach, especially at larger airports.[275]

In addition, some jurisdictions (e.g. Portugal) have implemented a hybrid-till approach, in which part of non-aeronautical revenues are used to cover aeronautical services. Such regulatory method can be closer to a single-till or dual-till system depending on the proportion of non-aeronautical revenues that are used to cross-subsidise aeronautical activities.[276]

Consultation with users is another important component of regulation of aeronautical services. According to the ICAO, regardless of the regulatory method in place, users and other relevant stakeholders should be consulted by the airport operator prior to the implementation of changes in charging systems or levels of charges.[277] This seeks to increase transparency and guarantee that the airport operator provides users with appropriate information on the proposed changes and takes into account their views and the impact of the charges on them. While this tool intends to ensure that the airport operator and users achieve an agreement regarding the changes, the airport operator retains the freedom to levy the proposed charges, but users should

[274] VARSAMOS, Stamatis. *op. cit.* p. 17; MARQUES, Rui Cunha; BROCHADO, Ana. *op cit.* p. 167; IATA. *Economic Regulation: The case for independent economic regulation of airports and air navigation service providers*. p. 36; OUM, Tae Hoon; ZHANG, Anming; ZHANG, Yimin. *op. cit.* pp. 220-221.
[275] VARSAMOS, Stamatis. *op. cit.* p. 17; MARQUES, Rui Cunha; BROCHADO, Ana. *op cit.* p. 167; IATA. *Economic Regulation: The case for independent economic regulation of airports and air navigation service providers*. p. 36; OUM, Tae Hoon; ZHANG, Anming; ZHANG, Yimin. *op. cit.* p. 221.
[276] IATA. *Economic Regulation: The case for independent economic regulation of airports and air navigation service providers*. p. 36.
[277] The ICAO indicates that a "States are encouraged to ensure that a clearly defined, regular consultation is established with users by their airports", including adequate procedural conditions, such as (i) users should be given notice at least four months in advance in case of a revision of charges or the implementation of new charges; (ii) transparent and adequate financial, operation and other relevant information should be provided to users; (iii) users should be given advance notice, of at least one month, as regards the implementation of decisions on review of charges or imposition of new charges; and (iv) decisions should be supported by appropriate reasons, in particular when the views from users are not accepted (ICAO. *ICAO's Policies on Charges for Airports and Air Navigation Services*. p. 6; ICAO. *Airport Economics Manual*. Doc 9562. Montreal: ICAO, 2020. Available at: www.icao.int/publications/Documents/9562_cons_en.pdf. p. 1-12-1-13).

have the right to appeal to an independent entity (e.g. the civil aviation regulator), who should have the power to step-on and decide the adequate pricing and/or service levels.[278]

This mechanism can be particularly useful to allow the implementation of less stringent regulatory methods (such as – but not necessarily – price monitoring), especially where competition between airports is more likely to occur. In fact, engaging users and other relevant stakeholders (e.g. ground handling service providers and associations of passengers) through consultation may minimise the risk that airports abuse their market power, as they are required to provide transparent information to the parties that may be affected by such behaviour. This would enable those stakeholders to better monitor airports' conducts, notably considering that they have significant technical expertise and therefore may be well placed to take actions in case there are indications of abusive conducts. Under those circumstances, independent regulators can play a more active role mediating conflicts – rather than prescribing behaviours in advance – and intervening should any abuse of market power has occurred – therefore, operating more like competition authorities.

In sum, a good regulatory framework is paramount for improving efficiency and incentivising investment, as well as reducing uncertainty and financial risks. While there is no one-size-fits-all model, an adequate regulatory method, adapted to the economic reality of a particular location, is a pre-requisite for ensuring that airports operate on a level playing field. On the one hand, economic regulation of aeronautical services seeks to prevent that airports abuse their market power, by imposing higher prices and reducing service quality vis-à-vis what would exist if the market was effectively competitive. On the other hand, where airports can compete, an appropriate economic regulation may increase incentives for airports to attract airlines and passengers, for instance through reduced charges and increased service quality.

On the contrary, inadequate economic regulation will negatively affect the way in which airports compete among themselves. For instance, if regulation sets maximum prices that airports can charge, giving them a guarantee of a level of revenue, airports will not have significant incentives to compete and offer lower prices, even if this could be possible.[279]

Thus, competition and regulation should be complementary and well balanced: the greater the scope for competition between airports, the more flexible – or even non-existent – regulation should be.

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[278] ICAO. *ICAO's Policies on Charges for Airports and Air Navigation Services*. p. 5; DELOITTE; IATA. *op. cit.* p. 52.
[279] FORSYTH, Peter. Airport Competition: A Perspective and Synthesis. p. 430.

2.4.2 Price regulation in Brazil

In Brazil, until the early 2010s, airport charges were directly set by the government (since 2006 by ANAC) and were not subject to a proper regulatory method, as most relevant airports were state-managed through Infraero. It was only with the airport concession programme, initiated in 2011, that an actual economic regulation of aeronautical services was introduced in Brazil.[280] Since then, the topic has undergone an evolutionary process and currently there are different regulatory methods in place, applied to different airports.

The definition of the regulatory method (or the absence of regulation) is within the remit of ANAC, which is also responsible for determining which charges can be levied on users by airport operators. At present, there exist six airport charges in Brazil, comprising different aeronautical services provided by the airport operator to (i) passengers (boarding and connection charges), (ii) airlines (landing and parking charges), and (iii) the consignee or carrier as regards international cargo transport (storage and handling charges). Airport operators are prevented from creating any other airport charges; only ANAC can do so.[281]

When it comes to the regulatory methods for aeronautical revenues related to services provided to passengers and airlines (i.e. boarding, connection, landing and parking charges), there are four different regimes in place: (i) price-cap regulation; (ii) price-cap regulation with the possibility of "charge management"; (iii) revenue-cap regulation; and (iv) price monitoring.[282]

Airports of the second and the third concession rounds[283] are subject to price-cap regulation. In practice, ANAC sets the maximum charges, which are annually updated

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[280] ANAC. *Regulação Econômica de Aeroportos - Atuação da ANAC no âmbito da regulação econômica de tarifas aeroportuárias e preços específicos*. 2015. Available at: https://legis.senado.leg.br/sdleg-getter/documento/download/915503e8-44dc-40e1-b62b-abc52c73cac6. p. 6. In addition to price regulation, a minimum level of service quality and mandatory investments that the airport operator must ensure were also introduced.

[281] RESENDE, Caio Cordeiro de; FONSECA, Ricardo Sampaio da Silva; CALDEIRA, Thiago Costa Monteiro. Aeroportos competem? Revisão da Literatura e Opções Regulatórias Brasileiras. *Revista de Defesa da Concorrência*, v. 4, n. 2, 2016. Available at: https://revista.cade.gov.br/index.php/revistadedefesadaconcorrencia/article/view/250. p. 32. Until recently, the existing airport charges were defined by law (i.e. Law No. 6.009/1973), which meant that ANAC was not able to create new charges; only the Brazilian Parliament could do it. This changed with the enactment of Law No. 14.368/2022, which provided Brazil with more flexibility as regards the economic regulation of airport charges.

[282] The regulatory method for aeronautical charges at airports under concession is established in the respective concession contracts (all concession contracts are available at: https://www.gov.br/anac/pt-br/assuntos/concessoes). Resolution ANAC No. 508/2019 sets out the regulatory method for aeronautical charges at airports managed by Infraero.

[283] I.e. Brasília (BSB), São Paulo/Guarulhos (GRU), Campinas/Viracopos (VCP), Belo Horizonte/Confins (CNF), and Rio de Janeiro/Galeão (GIG) airports. As mentioned above, the only airport awarded in the first concession round, Natal/São Gonçalo do Amaranto (NAT), was returned to the government before the end of the contract,

according to a formula that takes into account an inflation index, as well as a productivity factor (Factor X) and a quality factor (Factor Q). The productivity factor refers to efficiency savings, which are subtracted from the final cap, in order to share productivity gains with users. As for the quality factor, it comprises service quality indicators, such as how the services have been performed, the availability of equipment and facilities and a passenger satisfaction survey. Factor Q may increase or reduce the charges' cap, according to the results presented by the concessionaire.[284] The quality factor is relevant for incentivising the airport operator to improve quality during the regulatory period. Every 5 years ANAC revises the method for determining Factors X and Q.

Under this system, the airport operator may levy charges lower than the ceiling, as long as the discount is based on objective criteria, previously disclosed, such as the quality of services, time, day or season. In these cases, the airport operator must impose the same charge on anyone who meets the established conditions, ensuring fair, transparent and non-discriminatory treatment for all users.

Airports of the fourth concession round[285] are still subject to price-cap regulation, following the same parameters indicated above. However, a relevant change was introduced, allowing "charge management". Accordingly, concessionaires may reduce charges up to 100% of the ceiling established by ANAC, as well as increase charges (except the boarding charge) up to 100% of the price cap. This aims at permitting airport operators to better set prices in light of a more efficient use of airport infrastructure.[286] For instance, these changes may relate to peak and off-peak times, in order to reduce idle capacity or passenger traffic. However, in case of raising charges on some services beyond the price cap, concessionaires must compensate this by reducing charges on other services, so as to keep the average charge under the cap established in the contract. Any reduction or increase in charges must be based on objective and non-discriminatory criteria and be offered to anyone who meets the requirements. This aims at

based on Law No. 13.448/2017 (so-called "rebidding" process). In May 2023, the airport was awarded again and is now subject to a new contract, with a different regulatory method, as described below.

[284] Moreover, the quality indicators are regularly monitored by ANAC, which may impose contractual sanctions if the airport operator fails to meet the minimum quality standards specified in the contract. See SILVA, Priscilla Thábata Alves da. *Regulação de Qualidade de Serviços em Aeroportos Concedidos no Brasil*. National School of Public Administration, Master's Thesis, 2019. Available at: https://repositorio.enap.gov.br/bitstream/1/4343/1/Disserta%C3%A7%C3%A3o%20Priscilla%20Silva.PDF.

[285] I.e. Florianópolis (FNL), Fortaleza (FOR), Salvador (SSA), and Porto Alegre (POA) airports.

[286] LONGO, Daniel Ramos; FONSECA, Ricardo Sampaio. Evolução Regulatória dos Processos de Concessão Aeroportuária. In SILVA, Mauro Santos (ed.). *Concessões e Parcerias Público-Privadas: Políticas públicas para provisão de infraestrutura*. Brasília: IPEA, 2022. Available at: https://repositorio.ipea.gov.br/handle/11058/11401. p. 379.

ensuring a level playing field by preventing airport operators from according a more favoured treatment to some players to the detriment of others.

Furthermore, when the concessionaire raises charges beyond the price cap, the relevant stakeholders must be consulted in advance, in line with ICAO's recommendations, as described above.[287] ANAC monitors these proceedings and, as a last resort, can intervene if it considers that the justification provided by the airport operator for increasing charges does not contribute to a more efficient use of the airport infrastructure; if the reasoning is not objective and non-discriminatory; or if a relevant stakeholder was not consulted. In such cases, ANAC can only determine the revision of the changes of charges but cannot set itself their new levels.

The fifth airport concession round[288] took a step forward and established revenue-cap regulation. Since then, there is no individual cap for each type of airport charges, but rather a ceiling for the average of all charges per passenger. In other words, the concessionaire has enough flexibility to set prices for each aeronautical service but must not exceed the revenue cap for all services altogether. This allows airport operators to better price the usage of the infrastructure and incentivises them to innovate and become more cost efficient.[289] The revenue cap is annually updated according to a formula that takes into account an inflation index, as well as a productivity factor (Factor X) and a quality factor (Factor Q), in line with the setting of price caps in the previous concession contracts.

Further, revenue-cap regulation only applies to large and mid-sized airports, and specifically to scheduled and non-scheduled air services (except air taxi). Charges levied by small airports, as well as charges for air taxi and general aviation (including private transport) are subject to a light-handed regulation (price monitoring). In these cases, airport operators can freely set prices, although they cannot create different aeronautical charges in addition to those referred to above. According to ANAC, small airports are often unprofitable and are less relevant in the network, which means that the airport operator has limited market power. Additionally, airlines and other users are considered to have substantial bargaining power in such circumstances. As for general aviation and air taxi operations, they require less infrastructure and have a greater number of available airports.[290] Therefore, when providing aeronautical services to these activities, airports under concession face more competitive

[287] ICAO. *ICAO's Policies on Charges for Airports and Air Navigation Services.* p. 5.
[288] I.e. Recife (REC), Maceió (MCZ), João Pessoa (JPA), Aracaju (AJU), Campina Grande (CPV), Juazeiro do Norte (JDO), Cuiabá (CGB), Sinop (OPS), Rondonópolis (ROO), Alta Floresta (AFL), Vitória (VIX), and Macaé (MEA) airports.
[289] LONGO, Daniel Ramos; FONSECA, Ricardo Sampaio. *op. cit.* pp. 380-381.
[290] Indeed, as further discussed in section 2.6.2, airports under the authorisation regime can handle general aviation and air taxi services, which increases the number of airports that can be used.

pressure, reducing the risks of abuse. In any case, potential abusive practices would affect a reduced number of users, which would not justify the costs for managing a more stringent regulatory method.[291]

In both revenue-cap and price-monitoring regulatory systems, the airport operator must set charges following the best practices for pricing airport services (such as those from ICAO, IATA – International Air Transport Association – and ACI – Airports Council International) and based on objective and non-discriminatory criteria. In addition, when airport operators increase charges, the relevant stakeholders must be previously consulted, and ANAC and users must be informed of the changes at least 30 days in advance. ANAC may suspend the changes of charges if it deems that the justification provided by the airport operator does not meet the requirements (i.e. international best practices and objective and non-discriminatory basis), or if the changes can potentially harm final users.

The fifth airport concession round also introduced a mechanism to further increase flexibility of charges: the so-called "constructive engagement", aiming at a more efficient management of airport infrastructure, enabling airport operators to work more effectively to attract demand (airlines and passengers). This also follows best practices promoted by ICAO, and adopted in some jurisdictions, such as the United Kingdom, Australia and New Zealand.[292] With support of airlines, the concessionaire may establish different revenue caps and alternative charges, as well as other relevant elements of the concession, especially those related to service quality and investments. The idea is to include a degree of commercial negotiation into the regulatory process, reducing government interference. This approach rests on the premise that regulated agents and users have more information about airport infrastructure and operations than the regulator, enabling them to achieve better arrangements than regulation itself.[293]

ANAC must oversee the process, and any alternative proposal requires prior approval by the agency. ANAC needs to assess whether the proposal meets best practices related to airport charges, investments, operational efficiency and service quality, as well as the interests

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[291] ANAC. *Audiência Pública nº 11/2018 – Anexo – Aspectos de Regulação Econômica.* 2018. Available at: https://www.anac.gov.br/participacao-social/consultas-publicas/audiencias/2018/aud-11/AnexoAP112018AspectosdeRegulaoEconmica.pdf. pp. 19-21.

[292] WILSON, Anna; DAVIS, Warwick. C*onstructive Criticism - Making Negotiations Between Airports and Airlines Work.* Melbourne; Sydney; Brisbane: Frontier Economics, 2012. Available at: https://www.frontier-economics.com.au/publications/constructive-criticism/.

[293] ANAC. *Justificativa – Concessão para ampliação, manutenção e exploração dos Aeroportos integrantes do Bloco Nordeste, Bloco Centro-Oeste e Bloco Sudeste.* 2018. Available at: https://www.anac.gov.br/participacao-social/consultas-publicas/audiencias/2018/aud-11/justificativa-ap-blocos-28-05-sem-concliacao.pdf. pp. 28-29; LONGO, Daniel Ramos; FONSECA, Ricardo Sampaio. *op. cit.* pp. 388-389; BUSH, Harry. *Reflections on the Draft PC Report of February 2019*. Canberra: Productivity Commission, 2019. Available at: https://www.pc.gov.au/__data/assets/pdf_file/0004/238054/subdr093-airports.pdf.

of final users. If approved, the engagement prevails over the regulatory rules provided for in the contract. The parties may request ANAC to mediate the process in order to facilitate reaching an agreement.

The regulatory approach adopted in the fifth concession round was followed in the sixth[294] and seventh[295] concession rounds, as well as in the "rebidding" process of Natal/São Gonçalo do Amaranto airport. The airports still managed by Infraero[296] are also subject to these regulatory methods.

Thus, there are currently four different regimes for economic regulation of airport charges in Brazil for services provided to passengers and airlines (i.e. boarding, connection, landing and parking charges): (i) price-cap regulation (second and third concession rounds); (ii) price-cap regulation with the possibility of "charge management" (fourth concession round); (iii) revenue-cap regulation (fifth, sixth and seventh concession rounds and Infraero, for large and mid-sized airports, as well as Natal/São Gonçalo do Amaranto airport, for scheduled and non-scheduled air services, except for air taxi); and (iv) price monitoring (fifth, sixth and seventh concession rounds and Infraero, for small airports, as well as for air taxi and general aviation, regardless of the size of the airport, and for air taxi and general aviation at Natal/São Gonçalo do Amaranto airport).

As explained above, the degree of flexibility the airport operator has to set aeronautical charges varies according to each of these regulatory methods. The more the flexibility, the greater is the ability of the airport manager to improve efficiency and cost-effectiveness in providing aeronautical services.[297]

Although the evolution of the regulatory models may be justified and reflect the lessons learned (including a better understanding of the dynamics of the market and the necessary degree of price regulation of aeronautical activities), in practice different market players – some of which are potential or effective competitors, as indicated in section 2.3 – are subject to distinct rules. Since the different regulatory methods are likely to impact the total costs and

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[294] I.e. Curitiba (CWB), Foz do Iguaçu (IGU), Navegantes (NVT), Londrina (LDB), Joinville (JOI), Bacacheri (BFH), Pelotas (PET), Uruguaiana (URG), Bagé (BGX), Goiânia (GYN), São Luís (SLZ), Teresina (THE), Palmas (PMW), Petrolina (PNZ), Imperatriz (IMP), Manaus (MAO), Porto Velho (PVH), Rio Branco (RBR), Cruzeiro do Sul (CZS), Tabatinga (TBT), Tefé (TFF), and Boa Vista (BVB) airports.

[295] Rio de Janeiro Jacarepaguá (RRJ), São Paulo Campo de Marte (RTE), Belém (BEL), Macapá (MCP), São Paulo/Congonhas (CGH), Campo Grande (CGR), Corumbá (CMG), Ponta Porã (PMG), Santarém (STM), Marabá (MAB), Carajás Parauapebas (CKS), Altamira (ATM), Uberlândia (UDI), Montes Claros (MOC), and Uberaba (UBA) airports.

[296] Currently, the only major airport still managed by Infraero is Rio de Janeiro/Santos Dumont (SDU). The other airports managed by the SOE are small regional airports (the list of these airports is available at: https://www4.infraero.gov.br/).

[297] LONGO, Daniel Ramos; FONSECA, Ricardo Sampaio. *op. cit.* p. 382.

revenue sources of each airport – and consequently its efficient management –, the level playing field may ultimately be distorted.[298]

Take, for instance, the two airports in São Paulo, the largest city in Brazil. While São Paulo/Guarulhos airport (second concession round) is subject to price-cap regulation, São Paulo/Congonhas airport (seventh concession round) is subject to revenue-cap regulation. This means that, in practice, São Paulo/Congonhas can set aeronautical charges more efficiently (e.g. by implementing peak-load charges) than São Paulo/Guarulhos. The same argument also applies to airports that can compete, for example, for connecting passengers, such as Fortaleza, Recife and Salvador airports. The fact that Recife is subject to revenue-cap regulation, while the other two airports face price-cap regulation, is likely to give the first a competitive advantage when attracting airlines to establish their hubs in the region.

Moreover, it should be mentioned that Brazil adopts a dual-till regulatory method, as non-aeronautical revenues are not considered when setting price regulation of aeronautical charges (i.e. non-aeronautical activities do not directly subsidise aeronautical services). The choice for the dual-till model is justified by the fact that it gives greater incentives to invest in airport infrastructure, which was the main reason for introducing private capital into airport management in Brazil.[299]

However, the parameters for setting airport charges (i.e. price and revenue caps) in Brazil did not reflect the actual operating costs of airport operators for providing aeronautical services, since ANAC only used the levels of charges previously implemented by Infraero.[300] This goes against the best practices promoted by ICAO on airport charges, according to which these charges should be cost-based.[301] Therefore, the regulatory parameters are possibly not perfectly appropriate to set prices efficiently, which has a potential to hamper overall efficiency and effective competition – especially for the airports with less flexibility to set aeronautical charges.

As for airport charges related to international cargo transport (i.e. storage and handling charges), airports from the second, third and fourth concession rounds are subject to price-cap regulation. The price cap is annually updated according to an inflation index, but not considering Factor X and Factor Q. The rationale for this regulatory method was the fact that

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[298] OECD. *OECD Competition Assessment Reviews: Brazil.* pp. 62-65.
[299] RESENDE, Caio; CALDEIRA, Thiago. Privatization of Brazilian airports: a synthetic control approach. *Economics Bulletin*, v. 40, n. 1, 2020. Available at: https://ideas.repec.org/a/ebl/ecbull/eb-19-00443.html. pp. 744-745.
[300] RESENDE, Caio Cordeiro de; FONSECA, Ricardo Sampaio da Silva; CALDEIRA, Thiago Costa Monteiro. *op. cit.* p. 32.
[301] *ICAO's Policies on Charges for Airports and Air Navigation Services.* p. 8.

international cargo storage and handling in Brazil have been traditionally provided by airport operators and considered aeronautical services. Nevertheless, this approach is not common worldwide, as these activities are typically regarded as non-aeronautical services and provided on a non-exclusive basis by firms through a concession contract with the airport operator, and therefore not subject to economic regulation.[302]

Since the fifth concession round, storage and handling charges are not regulated anymore, except for handling charges related to cargo under customs transit regime at large and mid-sized airports (which are subject to price-cap regulation, as described below). This change occurred because the regulator understood that airport operators face competitive pressure on international cargo handling and storage services, since cargo can be transported to and stored in other cargo terminals (customs facilities) located outside the airport until customs clearance. Such terminals outside the airport are seen as effective substitutes to airport cargo terminals and effectively compete with the latter. In any case, storage and handling charges still need to be established according to the best practices for pricing airport services (such as those from ICAO, IATA and ACI), and based on objective and non-discriminatory criteria.[303]

Nevertheless, charges for covering services related to cargo under customs transit regime (i.e. that is going to other cargo terminal) are still regulated, since in this case the airport operator would have both the ability and the incentive to leverage its market power to implement abusive behaviour towards its competing cargo terminals, by increasing the charges levied on cargo that will be transported to such terminals. This would create disincentives for competing cargo terminals and put them at a competitive disadvantage as they would face higher costs compared to storage services in the cargo terminal managed by the airport operator.[304]

It should also be mentioned that since the fifth round, the concession contracts explicitly state that players other than the airport operator can enter the market to provide international handling and storage services at the airport.[305] This seeks to establish a more competitive market for international cargo handling and storage inside the airport, as already exists for domestic

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[302] ANAC. *Agenda Regulatória 2019-2020 – Tema 22 – Regulação de preços do mercado de armazenagem e capatazia de carga importada e exportada.* 2019. Available at: https://www.gov.br/anac/pt-br/acesso-a-informacao/participacao-social/tomada-de-subsidios/arquivos/estudo_armazenagem-e-capatazia.pdf. pp. 21 ff.
[303] ANAC. *Agenda Regulatória 2019-2020 – Tema 22*. pp. 21 ff. CADE is currently investigating the market of international cargo transport at Manaus airport (sixth round). One cargo terminal located outside the airport has accused the airport operator from abusing its market power by imposing higher handling charges on the goods that are not stored at the airport terminal, discriminating against its competitor that operates a terminal outside the airport (Administrative Inquiry No. 08700.001445/2023-26, opened on 19 April 2023).
[304] ANAC. *Agenda Regulatória 2019-2020 – Tema 22*. pp. 21 ff.
[305] *Ibid*. pp. 21 ff.

cargo, suggesting that even regulation for cargo under customs transit regime may be removed in the future if a competitive environment is achieved.

A debate on the economic regulation of airport charges related to international cargo transport has recently been raised when ANAC was designing the contract of the future concession of Campinas/Viracopos airport (in the context of the abovementioned "rebidding" process). In ANAC's view, this airport (which concentrate around 40% of all international air cargo handled in Brazil) does not face enough competition (either from other airports or other terminals located outside the airport) to prevent the potential exercise of its market power. Therefore, price-cap regulation was suggested to be maintained for all international cargo storage and handling charges at that airport. In addition, ANAC highlighted the relevance of creating a competitive market between terminals for international cargo handling and storage inside the airport, proposing additional rules to incentivise the achievement of this outcome.[306]

2.5 Common ownership of airports

In a context where airports are regarded as monopolies and managed altogether by the government, the issue of common ownership of airports is not a relevant discussion. Nevertheless, this topic emerges when airports are run by private players. Indeed, scholars have suggested that, when designing the privatisation of competing airports, governments should carefully examine whether the advantages of selling the airports collectively to a single owner (e.g. to increase co-ordination of investment) outweigh the benefits from selling them individually to promote competition. The same approach should also be followed when assessing mergers or alliances between potentially competing airports.[307]

Accordingly, experiences in some jurisdictions indicate that competing airports should be operated by independent players, rather than horizontally integrated firms. The following sections examine the approach adopted in the United Kingdom, Australia and Mexico, which provide a background to the discussions on common ownership of airports in Brazil.

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[306] ANAC. *Justificativa – Concessão para ampliação, manutenção e exploração do Aeroporto Internacional de Viracopos*. 2021. Available at: https://www.gov.br/anac/pt-br/assuntos/concessoes/relicitacao-do-aeroporto-de-viracopos/justificativa.

[307] FORSYTH, Peter; GILLEN, David; MÜLLER, Jürgen; NIEMEIER, Hans-Martin. *op. cit.* p. 2; FORSYTH, Peter. Airport Competition: A Perspective and Synthesis. p. 434.

2.5.1 Operation of competing airports by different players

In 1987, the United Kingdom has fully privatised 7 state-owned airports (London/Heathrow, London/Gatwick, London/Stansted, Prestwick, Glasgow, Edinburgh and Aberdeen), then managed by the SOE British Airport Authority (BAA). The British government decided to privatise BAA as a group with all its existing airports, and its shares were offered for sale on the London Stock Exchange, establishing BAA plc. The rationale for this approach was to provide appropriate airport capacity to meet the expected growing demand and foster airline competition, although the decision was criticised at the time as no significant economies would be obtained by keeping the airports under a single management.[308]

In 2007, the former CC opened a market investigation to assess whether the market for airport services in the United Kingdom prevented, restricted or distorted competition. The CC identified that more than 20 years after the privatisation of BAA, its seven airports[309] were responsible for over 60% of all passengers at British airports. In particular, London/Heathrow, London/Gatwick, London/Stansted and Southampton accounted for 90% of air passengers in south-east England, and Edinburgh, Glasgow and Aberdeen accounted for 84% of air passengers in Scotland.[310]

The CC concluded that BAA common ownership of airports led to adverse effects on competition in the supply of airport services. As regards the Scottish airports, the CC found evidence that common ownership restricted competition between Edinburgh and Glasgow and, if the airports were run by different managers, there would be potential for competition between them, including on price, service, investment and innovation. However, it was considered that there was little scope for competition between Aberdeen and the other two BAA airports in Scotland.[311]

As for the airports in south-east England, the CC indicated that BAA's London airports (Gatwick, Heathrow and Stansted) faced little competition from non-BAA airports. Nevertheless, it concluded that given the potential for competition between the BAA London airports (despite limitations in the short term, given the lack of capacity, notably runway

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[308] CC. *BAA airports market investigation: A report on the supply of airport services by BAA in the UK*. London: Competition Commission, 2009. Available at: https://www.gov.uk/cma-cases/baa-airports-market-investigation-cc. p. 5; STARKIE, David. The Airport Industry in a Competitive Environment: A United Kingdom Perspective. pp. 293-294; STARKIE, David; THOMPSON, David. *Privatising London's Airports*. London: The Institute for Fiscal Studies, 1985. Available at: https://ifs.org.uk/publications/privatising-londons-airports. p. 81.
[309] It should be noted that Southampton airport was acquired in 1990 and Prestwick airport was sold in 1991.
[310] CC. *op. cit.* pp. 5-8.
[311] *Ibid.* pp. 9-10.

capacity), separate ownership would have led to competition between them. Thus, common ownership prevented any degree of competition between those airports, including for airlines offering connecting flights. According to the CC, common ownership also limited competition between Southampton and the BAA London airports. Furthermore, the CC highlighted that BBA's common ownership of the three major airports in the London area prevented, at least partially, major investments and constrained capacity development of such airports, which had been one of the main purposes of privatising BAA as a single group.[312]

Additionally, the CC recognised that the economic regulation of airports – particularly of the three BAA London airports, then subject to price regulation by the CAA – also contributed to the limited competition in the provision of airport services by BAA, affecting the level, specification and timing of investment, as well as the adequate level and quality of service to passengers and airlines. For instance, the consultation on capital expenditure through a process of constructive engagement had been weak, promoting a lack of responsiveness to the different needs of airlines and passengers as regards the quantity, quality, location and timing of investment. In the view of the CC, the inadequacies of the regulatory method in place were aggravated by the common ownership of substitute airports, reducing the benefits of regulation and limiting competition between airlines.[313]

According to the CC, the common ownership also prevented the CAA from benchmarking their performance through "comparative competition" (or yardstick competition, as discussed below), which would reduce regulatory costs – by lowering the required level of scrutiny by the regulator, for example to determine when an airport is underperforming –, as well as improve service quality and operating and capital expenditure efficiency.[314]

To address the adverse effects on competition and on BAA's customers, particularly arising from the common ownership of airports by BAA, the CC imposed structural remedies, namely: (i) the divestiture of both Gatwick and Stansted airports to different purchasers; and (ii) the divestiture of either Edinburgh or Glasgow airports. These remedies were supposed to improve capacity development, by ensuring that airport capacity best meets the requirements of airlines and passengers. The remedies also intended to enhance service quality and reduce prices.[315]

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[312] *Ibid.* pp. 10-11.
[313] *Ibid.* pp. 12-13.
[314] *Ibid.* pp. 153-154.
[315] *Ibid.* pp. 14-15.

Moreover, the CC recommended that the Department for Transport should introduce a licensing regime, with different licence obligations for airports of different sizes and market power. Under this regime, the regulator would have more flexibility to relax the intensity of regulation in cases where there are opportunities for more competition. Until a new regulatory system is implemented, the CC suggested that the CAA should strengthen consultation process and rules on quality of service.[316]

The remedies imposed by the CC resulted in the sale of Gatwick, Edinburgh and Stansted airports, in 2009, 2012 and 2013, respectively. The divestment was valued at a total GBP 3.8 billion. The CC recommendations related to regulatory framework and government policy were addressed by the Civil Aviation Act 2012, which entered into full force in 2014. For instance, the CAA was allowed to introduce, where appropriate, lighter-handed regulatory methods instead of fixed price caps, following a market power determination test.[317]

In 2016, the Competition and Markets Authority (CMA) carried out an assessment of the initial impact of the interventions of the CC. The main conclusion of the CMA was that the CC remedies have led to positive changes at divested airports, both for the separate ownership but also the more flexible regulatory framework. In addition, BAA's airports not subject to divestment – including the UK's largest airport, London/Heathrow – have also experienced positive changes.[318]

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[316] *Ibid.* p. 16.

[317] CMA. *BAA airports: Evaluation of the Competition Commission's 2009 market investigation remedies*. London: CMA, 2016. Available at: https://assets.publishing.service.gov.uk/media/57399d43ed915d152d00000b/evaluation_of_baa__market_investigation_remedies.pdf. pp. 2, 29. According to Section 6 of the Civil Aviation Act 2012, the market power test involves three parts: (Test A) the relevant operator has, or is likely to acquire, substantial market power in a market; (Test B) competition law does not provide sufficient protection against the risk that the relevant operator may engage in conduct that amounts to an abuse of that substantial market power; and (Test C) for users of air transport services, the benefits of regulating the relevant operator by means of a licence are likely to outweigh the adverse effects. If an airport operator fulfils the market power test, it is considered to be the operator of a dominant airport and the CAA must regulate it by means of an economic licence, which may include price control and other conditions (e.g. service levels). Airport operators that do not fulfil the market power test are not subject to economic regulation (CAA. *Market Power Test Guidance*. London: CAA, 2016. Available at: https://publicapps.caa.co.uk/docs/33/CAP%201433%20AUG16.pdf). Currently, only London/Heathrow and London/Gatwick airports meet the market power test and are therefore subject to economic regulation, but the latter is subject to a lighter regulatory approach than the former (see: https://www.caa.co.uk/commercial-industry/airports/economic-regulation/licensing-and-price-control/airport-market-power-assessment/; https://www.caa.co.uk/commercial-industry/airports/economic-regulation/licensing-and-price-control/economic-licensing-of-heathrow-airport/; https://www.caa.co.uk/commercial-industry/airports/economic-regulation/licensing-and-price-control/economic-licensing-of-gatwick-airport/).

[318] CMA. *BAA airports: Evaluation of the Competition Commission's 2009 market investigation remedies*. p. 3. The CMA recognised, however, that it was difficult to isolate precisely the benefits that have arisen from the CC remedies and other developments in the civil aviation sector, such as the global financial crisis, the longer-term effects of "open skies" agreements, airline consolidation and the evolution of airline commercial models, which could also have had an impact on the market.

According to the CMA, positive effects stemmed particularly from new commercial strategies implemented at divested airports and other airports directly and indirectly impacted by the divestments. By enhancing the focus on passenger experience, these new airport strategies aim at cultivating more productive relationships with airline customers, ultimately delivering benefits to passengers. In particular, the CMA indicated several elements that show more competition and benefits to passengers.[319]

Passengers at divested airports have grown significantly more than at other UK airports, thereby improving connectivity and choice to consumers. Supply expansion has also exerted downward pressure on prices for air travel. Moreover, airports' incentives to pursue large capital investments without clear benefits for airport users seems to have decreased. Divested airports have enhanced the efficiency of their capital investments in facilities and services, as well as improved their operational efficiency, focusing on tailored changes based on local realities. Service quality has also improved, both at divested airports and the airports not subject to divestment (particularly London/Heathrow). Furthermore, since the divestments, airports are competing individually to attract airlines and passengers – including network carriers and long-haul international routes – and not acting as part of the BAA group with a focus on a segmented market. In addition, Airlines have been able to negotiate more competitive airport charges, although capacity constraints restricted the ability of airlines to switch airports and therefore limited their bargaining power. To be more competitive, airports have changed the structure of their charges to airlines and incentivised operations with larger, fuller aircrafts and off-peak, ensuring more efficient use of existing capacity.[320]

Unlike the British experience, where competition between airports was considered only *ex-post*, two decades after the privatisation took place, other jurisdictions (such as Australia, Mexico and Brazil) implemented an *ex-ante* approach in this regard, limiting – but only to some extent – common ownership since the inception of the privatisation process. In practice, however, these initiatives had limited effects in promoting increased competition between airports.

Between 1997 and 2003, 22 Australian federal airports (including Sydney, Melbourne, Brisbane, Perth and Adelaide, the largest ones),[321] then owned and managed by the SOE Federal

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[319] *Ibid*. p. 3.

[320] *Ibid*. pp. 3-5.

[321] Brisbane, Melbourne and Perth airports were privatised in 1997; Adelaide, Alice Springs, Archerfield, Canberra, Darwin, Gold Coast (Coolangatta), Hobart, Jandakot, Launceston, Moorabbin, Mount Isa, Parafield, Tennant Creek and Townsville airports were privatised in 1998; Sydney airport was privatised in 2002; and Bankstown, Camden, and Hoxton Park airports were privatised in 2003 (COMMONWEALTH OF AUSTRALIA. *National Aviation Policy White Paper: Flight Path to the Future*. Canberra: Department of Infrastructure,

Airports Corporation, were privatised, aiming to improve the efficiency of airport investment and operations, as well as to facilitate innovative management. The privatisation took place by selling, through competitive tenders, long-term leases for the airports to private players.[322]

Although it was recognised the limited scope for competition between the airports, cross ownership between certain pairs of airports (namely, Sydney and Perth; Sydney and Brisbane; and Sydney and Melbourne) was restricted to 15% by the Australian Airports Act 1996, in order to encourage competition, as some airports could compete, at least to some extent, for international traffic and, especially, for freight transport.[323-324] As cross-ownership restrictions applied only to the largest airports, certain combinations between major and smaller airports have emerged.[325]

In 2002, Australia concluded that only four airports (i.e. Sydney, Melbourne, Brisbane and Perth) had substantial market power and three airports (i.e. Adelaide, Canberra and Darwin) had moderate market power, justifying economic regulation. Price regulation was replaced by a light-handed regulation for these seven airports, but Adelaide, Canberra and Darwin airports were later removed from this regime. The other airports were freed from any kind of regulatory control, remaining however subject to competition law. The Australian Competition and Consumer Commission (ACCC) monitors the prices, financial performance and service quality at the four airports under the light-handed regulation.[326]

Transport, Regional Development and Local Government, 2009. Available at: https://www.infrastructure.gov.au/sites/default/files/migrated/aviation/publications/files/Aviation_White_Paper_final.pdf. p. 154).

[322] ACCC. *Airport monitoring report: 2021-22*. pp. 15-16.

[323] As part of the privatisation of Sydney airport in 2002, the acquiring company was provided a right of first refusal to build and manage any second major airport in Sydney region within 100 kilometres of the Sydney airport (i.e. the same player would be able to manage both airports). However, the operator of Sydney airport declined its first option right in 2017 and the new Sydney airport (Western Sydney airport) is being developed and will be operated by an SOE (BLUMER, Clare. Badgerys Creek airport to be built by Federal Government as Sydney Airport declines first option. *ABC News*, 2 May 2017. Available at: https://www.abc.net.au/news/2017-05-02/federal-government-will-build-second-sydney-airport-at-badgerys/8488616; AUSTRALIAN GOVERNMENT. *Airport Operator*. 2023. Available at: https://www.westernsydneyairport.gov.au/airport-operator).

[324] PRODUCTIVITY COMMISSION. *Inquiry Report: Economic Regulation of Airport Services*. p. 212; PRODUCTIVITY COMMISSION. *Price Regulation of Airport Services, Inquiry Report No. 19*. Canberra: Productivity Commission, 2002. Available at: https://www.pc.gov.au/__data/assets/pdf_file/0004/19714/airports.pdf. pp. xix, xxiv, 126.

[325] FORSYTH, Peter. *Airport Policy in Australia and New Zealand: Privatisation, Light Handed Regulation and Performance*. Paper for Conference "Comparative Political Economy and Infrastructure Performance: the Case of Airports", Fundación Rafael del Pino, Madrid, September 18-19, 2006. Available at: https://www.researchgate.net/publication/228670208_Airport_Policy_in_Australia_and_New_Zealand_Privatisation_Light_Handed_Regulation_and_Performance. p. 10; HOOPER, Paul; CAIN, Robert CAIN; WHITE, Sandy. The privatisation of Australia's airports. *Transportation Research*, Part E, v. 36, n. 3, 2000. Available at: https://www.sciencedirect.com/science/article/pii/S1366554599000320. pp. 194-195.

[326] ACCC. *Airport monitoring report: 2021-22*. pp. 15-20.

Over the years, the Productivity Commission has carried out four inquiries into the economic regulation of Australian airports. In general, these inquiries have concluded that the monitoring approach should be maintained rather than replaced by price controls, since the monitored airports have not systematically exercised their market power in commercial negotiations, aeronautical services or car parks. Nevertheless, the Productivity Commission has identified some performance indicators that could raise concerns about the exercise of market power, but the available data was insufficient to achieve a firm conclusion in this regard. The Productivity Commission, therefore, recommended that the ACCC should strengthen the current monitoring regime to increase transparency over airports' operations and more easily identify the exercise of market power.[327] These conclusions indicate that the monitored airports still have substantial market power and face little competition, even if they are owned and managed by independent firms.

More recently, in 2021, the ACCC assessed the acquisition of Sydney Airport by a consortium of investment funds with several infrastructure assets, including shareholdings in other Australian airports (e.g. the acquiring company held 25.17% in Melbourne airport, 20.01% in Brisbane airport, 12.08% in Adelaide airport and 3.2% in Perth airport). The ACCC decided not to oppose the transaction as the acquisition in question was unlikely to substantially lessen competition in any relevant market in Australia. According to the ACCC, there was very little, if any, competition between airports in Australia. In particular, the authority analysed whether the cross ownership that the members of the consortium would have in Australian airports, such as Sydney, Melbourne, Brisbane, Perth and Adelaide, would reduce competition. The ACCC asserted that the shareholdings were unlikely to give any member of the consortium control at an Australian airport. Likewise, in light of the reduced competition between airports, potential information sharing between the airports at stake would not be able to substantially restrict competition. While recognising that there was minimal potential for competition between airports as regards some aeronautical services (such as for international airlines entering the Australian market or concerning airports located close to each other), potential restriction on competition would not be substantial. In sum, the ACCC concluded that the transaction would not change the fact that the major Australian airports already had substantial

[327] PRODUCTIVITY COMMISSION. *Economic Regulation of Airports, Inquiry Report No. 92*. Canberra: Productivity Commission, 2019. Available at: https://www.pc.gov.au/inquiries/completed/airports-2019/report/airports-2019.pdf; ACCC. *Airport monitoring report: 2021-22*. pp. 15-20.

market power and that the monitoring regime in place did not prevent such airports from exercising this power.[328]

The ACCC's decision and the conclusions from the Productivity Commission inquiries mentioned above suggest that common ownership is not a very relevant issue in Australia, given the limited scope for competition between airports in the country.

The privatisation of Mexican airports started in 1998, aiming to modernise and expand the Mexican airports network, improving security, service quality and efficiency, including by promoting more competition. At the time, 35 airports – then operated by the SOE *Aeropuertos y Servicios Auxiliares* (ASA) – were divided into 4 clusters, each of them with a major airport.[329] Each cluster was incorporated into a company to which a 50-year concession was awarded. In a first phase, between 1998 and 2000, a 15% stake in each concessionaire was sold, through a public tender, to private strategic partners, which had to prove technical experience, administrative and financial capacity, as well as international recognition as airport operator. In a second phase, between 2000 and 2006, the remaining 85% stakes were sold through public offerings in the stock exchange market. The strategic partners were prevented from holding a stake in the other airport operators.[330] Although the operator of the Mexico City International Airport (AICM) was originally intended to be privatised, social and political issues prevented this transition, and the airport remains state-owned to this day.[331]

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[328] ACCC. *Sydney Aviation Alliance's proposed acquisition of Sydney Airport not opposed*. 9 December 2021. Available at: https://www.accc.gov.au/media-release/sydney-aviation-alliances-proposed-acquisition-of-sydney-airport-not-opposed; ACCC. *Sydney Aviation Alliance - Sydney Airport*. 2021. Available at: https://www.accc.gov.au/public-registers/mergers-registers/public-informal-merger-reviews/sydney-aviation-alliance-sydney-airport.

[329] Airport Group of Mexico City (GACM): Mexico City International airport (AICM); Centre North Airport Group (GACN): Monterrey plus 12 other airports (Acapulco, Mazatlán, Zihuatanejo, Zacatecas, Culiacán, Ciudad Juárez, Chihuahua, San Luis Potosí, Durango, Torreón, Tampico and Reynosa); Pacific Airport Group (GAP): Guadalajara plus 11 other airports (Puerto Vallarta, Tijuana, San José del Cabo, Bajío, Morelia, Hermosillo, La Paz, Aguascalientes, Los Mochis, Mexicali and Manzanillo); and Southeast Airport Group (ASUR): Cancún plus 8 other airports (Mérida, Villahermosa, Cozumel, Oaxaca, Huatulco, Minatitlán, Tapachula and Veracruz).

[330] DOF. *Lineamientos generales para la apertura a la inversión en el Sistema Aeroportuario Mexicano*, 9 February 1998. Available at: https://www.dof.gob.mx/nota_detalle.php?codigo=4865076&fecha=09/02/1998#gsc.tab=0; TORRES-LANDA, Juan Francisco. Mexico: Opening to Private Investment of the Mexican Airports Network System. *The International Lawyer*, v. 32, n. 2, 1998. Available at: https://scholar.smu.edu/cgi/viewcontent.cgi?article=1823&context=til. pp. 406-409; CFC. *Oficio PRES-10-096-2007-182*, 1 October 2007. Available at: https://www.cofece.mx/cfcresoluciones/Docs/Mercados%20Regulados/V2/7/1382537.pdf. pp. 5-8.

[331] GALEANA, Oscar Armando Rico. The privatisation of Mexican airports. *Journal of Air Transport Management*, v. 14, n. 6, 2008. Available at: https://www.sciencedirect.com/science/article/pii/S0969699708001038. p. 321; DE LA ROSA, Alejandro. El GACM tomará el control de nuevo sistema aeroportuario. *El Economista*, 26 October 2020. Available at: https://www.eleconomista.com.mx/empresas/El-GACM-tomara-el-control-de-nuevo-sistema-aeroportuario-20201026-0012.html; DE LA ROSA, Alejandro. Es oficial: el AICM y el GACM pasan al control de la Secretaría

In 2007, the former Federal Competition Commission – CFC (succeeded in 2013 by the Federal Economic Competition Commission – COFECE) carried out a market study of the airport sector in Mexico. The CFC concluded that there was no reasonable competition for the services provided by the SOE operating AICM, since it was submitted to a different regulatory regime compared to the 34 privatised airports. Indeed, only the airports under private control were subject to economic regulation of aeronautical services (price-cap regulation). The CFC recommended that the same rules should apply to AICM.[332]

The CFC also assessed the Metropolitan Airport System (i.e. the airports serving the greater Mexico City), at the time composed of Mexico City International Airport, as well as Toluca, Puebla, Queretaro and Cuernavaca airports – all in which the federal government held shares.[333] The CFC pointed out that the participation of the federal government in all those airports, as well as the absence of economic regulation could produce anti-competitive effects. In this regard, the CFC recommended that, in the medium term, such airports should be operated by different market players, effectively competing in the greater Mexico City, which could lead to more economic efficiency, lower prices and better service quality to users. In addition, the CFC recommended that the awarding of future concessions should be pro-competitive, preventing horizontal concentration between airports.[334]

The CFC recommendation to ensure that the airports serving the greater Mexico City are operated by different players has never been properly implemented. Today, the Metropolitan Airports System is co-ordinated and managed by an SOE (GACM), and although each airport is operated by specific SOEs, all of them have the participation of the Mexican federal government.[335]

Moreover, in the context of a public tender for awarding the concession to build and operate a new airport in Tulum in 2011, the CFC issued an opinion indicating the existence of significant scope for competition between Tulum and Cancun airports, located 130 kilometres apart from each other, with considerable overlapping catchment areas serving the Riviera Maya

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de Marina. *El Economista,* 8 August 2023. Available at: https://www.eleconomista.com.mx/empresas/Es-oficial-el-AICM-y-el-GACM-pasan-al-control-de-la-Secretaria-de-Marina-20230808-0031.html.

[332] CFC. *op. cit.* pp. 20, 31.

[333] In addition, a new airport within the Metropolitan Airport System was inaugurated in 2022: Felipe Ángeles International Airport (AIFA), which is managed by an SOE controlled by the Mexican federal government.

[334] CFC. *op. cit.* pp. 24-25, 31-32.

[335] DOF. *Acuerdo por el que se aprueba el Programa Institucional de Grupo Aeroportuario de la Ciudad de México, S.A. de C.V. 2020-2024*. 14 December 2020. Available at: https://www.gacm.gob.mx/doc/fs_programa_institucional_gacm.pdf; MARES, Fernando. Federal Government Hands Over AICM's Control to SEMAR. *Mexico Business News,* 8 September 2023. Available at: https://mexicobusiness.news/infrastructure/news/federal-government-hands-over-aicms-control-semar.

region. According to the CFC, this would enable passengers and airlines to choose airports based on the prices and quality offered by each of them. Therefore, the CFC warned that awarding the concession to the operator of Cancun airport (ASUR) would result in a high market concentration for airport services, distorting competition and impacting service quality and prices.[336] After more than a decade, the construction of the Tulum airport has finally started in 2021 by the Mexican government and it is expected to start operating in 2024. The airport will be managed by an SOE, controlled by the Mexican federal government.[337]

2.5.2 Cross-ownership limitations in Brazil

In Brazil, besides the need for more investments in airport infrastructure to enhance capacity and service quality, as well as addressing public budget constraints, the introduction of private sector participation in the provision of airport services also aimed at boosting competition between airports. In fact, the government has identified the existence of scope for potential and/or actual competition between some of the airports being awarded to private players.[338]

Therefore, drawing from international experiences, especially from Australia, Mexico and the United Kingdom, the Brazilian government decided to impose restrictions on common ownership between airports in the initial concession rounds, in order to foster competition and encourage the entry of a greater number of players in the airport sector. According to the policy maker, regulation should not ignore or prevent the development of competition. Indeed, instead of replacing competition, regulation should be an instrument to facilitate it.[339]

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[336] MEXICO. *Competition for-the-market – Contribution from Mexico*. OECD Global Forum on Competition, 2019. Available at: https://one.oecd.org/document/DAF/COMP/GF/WD(2019)62/en/pdf. p. 8.

[337] CARRILLO, Emmanuel. Así será el nuevo aeropuerto de Tulum, la alternativa para la saturación de vuelos a Cancún. *Forbes Mexico*, 21 February 2023. Available at: https://www.forbes.com.mx/asi-sera-el-nuevo-aeropuerto-de-tulum-la-alternativa-para-la-saturacion-de-vuelos-a-cancun/.

[338] SAC-PR. *Nota Técnica nº 33/DERC/SPR/SAC-PR*, of 20 September 2013; SAC-PR. *Nota Técnica nº 21/DERC/SPR/SAC-PR*, of 10 November 2015.

[339] SAC-PR. *Nota Técnica nº 33/DERC/SPR/SAC-PR*, of 20 September 2013; SAC-PR. *Nota Técnica nº 21/DERC/SPR/SAC-PR*, of 10 November 2015; SEAE. *Nota Técnica nº 23/2017-COGCR/SUCON/SEAE/MF*, of 22 February 2017. As mentioned in section 2.2.2, in the second and third concession rounds, the government required Infraero held a mandatory 49% share in all winning consortia, intending to allow the transfer of knowledge from private firms to the SOE. Nonetheless, by giving Infraero stakes in different airports (some of them potential or actual competitors) this model is likely to limit competition, as minority shareholding can facilitate co-ordination between competitors. The mandatory 49% share of Infraero was abolished since the fourth concession round (SILVEIRA, Paulo Burnier da. *Hybrid governance structure between public company and private partners: the case of Infraero in the Brazilian airline sector*; OECD. *OECD Competition Assessment Reviews: Brazil.* pp. 51-52).

Moreover, the existence of different players providing similar activities enables the implementation of the so-called yardstick competition, through which the regulator can better monitor the performance of regulated firms by comparing the metrics of the various operators, including investments, costs and service quality levels. This regulatory instrument, based on comparisons, can improve the efficiency of regulation by boosting the regulator's expertise and reducing the information asymmetry it faces. Yardstick competition can also create incentives for firms to increase efficiency and welfare. For instance, the performance of the airport vis-à-vis other similar airports is considered when the Factor X is determined within the economic regulation of aeronautical services.[340]

The efforts of the Brazilian government to create a diversified market – including by introducing rules to restrict cross ownership in the first rounds, as described below – seem to have been effective. Indeed, across the concession rounds, various players, from different nationalities and with diverse experiences, have entered the Brazilian market, as summarised in the table below:

Table 2. Concessionaires of Brazilian airports

Concession round	Airport(s)	Concessionaire	
		Shareholder(s)	Nationality
First round (2011)	NAT	Corporación America (100%)	Argentina
Second round (2012)	BSB	Corporación America (51%)	Argentina
		Infraero (49%)	Brazil (SOE)
	GRU	Invepar (51%)	Brazil
		Infraero (49%)	Brazil (SOE)
	VCP	Egis (1,5%)	France
		Triunfo (35%)	Brazil
		UTC (14,5%)	Brazil
		Infraero (49%)	Brazil (SOE)
Third round (2013)	CNF	CCR (38,25%)	Brazil
		Zurich Airport (12,75%)	Switzerland
		Infraero (49%)	Brazil (SOE)
	GIG	Changi (51%)	Singapore
		Infraero (49%)	Brazil (SOE)
Fourth round (2017)	FLN	Zurich Airport (100%)	Switzerland
	FOR	Fraport (100%)	Germany
	SSA	Vinci Airports (100%)	France

[340] PEREIRA NETO, Caio Mário da Silva; CASAGRANDE, Paulo Leonardo; LANCIERI, Filippo Maria; MORAES, Joaquim Nogueira Porto. *op. cit.* p. 11; CANOY, Marcel; HINDRIKS, Frank; VOLLAARD, Ben. *Yardstick competition: Theory, design, and practice, Working paper No. 133*. The Hague: CPB Netherlands Bureau for Economic Policy Analysis, 2000. Available at: https://www.cpb.nl/sites/default/files/publicaties/download/yardstick-competition-theory-design-and-practice.pdf. p. 11; BOUF, Dominique; LÉVÊQUE, Julien. Yardstick Competition for Transport Infrastructure Services. In ECMT. *Transport Services: The Limits of (De)regulation, ECMT Round Tables, No. 129*. Paris: OECD Publishing, 2006. Available at: https://www.oecd-ilibrary.org/transport/transport-services_9789282123461-en. p. 75; BARROS, Clarissa Costa de. *Regulação de infraestrutura aeroportuária no Brasil: a efetividade da regulação por incentivos*. University of Brasilia, Master's Thesis, Faculty of Economics, Business and Accounting, 2020. Available at: https://repositorio.unb.br/handle/10482/39502. pp. 56-60.

	POA	Fraport (100%)	Germany
Fifth round (2019)	Northeastern block	Aena (100%)	Spain
	Midwestern block	Socicam (85%)	Brazil
		Sinart (15%)	Brazil
	Southeastern block	Zurich Airport (100%)	Switzerland
Sixth round (2021)	Southern block	CCR (100%)	Brazil
	Central block	CCR (100%)	Brazil
	Northern block I	Vinci Airports (100%)	France
Seventh round (2022)	General aviation block	XP (100%)	Brazil
	Northern block II	Dix (95%)	Brazil
		Socicam (5%)	Brazil
	SP-MS-PA-MG block	Aena (100%)	Spain
"Rebidding" (2023)	NAT	Zurich Airport (100%)	Switzerland

Source: ANAC, https://www.gov.br/anac/pt-br/assuntos/concessoes and concessionaires' websites.

In the second round, a single player – and its parent companies, subsidiaries and related companies –, either individually or in a consortium, could bid for all three airports, but could only be awarded one of them.[341]

The third round has also prohibited to award more than one airport to the same player – and its parent companies, subsidiaries and related companies –, either individually or in a consortium.[342] In addition, the concessionaires of the airports awarded in the second round – as well as their parent companies, subsidiaries and related companies – were prevented from participating in the auction, except in a consortium, with a maximum stake of 15% and without participation in corporate governance.[343]

In the fourth round, a single player – and its parent companies, subsidiaries and related companies –, either individually or in a consortium, could bid for all four airports, but could only be awarded one airport at each region (Porto Alegre or Florianópolis; Fortaleza or Salvador).[344] There were no restrictions concerning the participation of the concessionaire of Natal/São Gonçalo do Amaranto, awarded in the first round – and its parent companies, subsidiaries and related companies –, despite the scope for competition with some of the airports being awarded, particularly Fortaleza and Salvador.[345]

Since the fifth round, no restrictions on common ownership were established, either among the blocks of a same round or among a block and the airports or blocks awarded in the previous rounds, in spite of the existence of actual or potential competition among some of the

[341] Item 3.3 of the concession tender notice (second round).
[342] Item 3.3 of the concession tender notice (third round).
[343] Item 3.18, 3.19 and 3.20 of the concession tender notice (third round).
[344] Item 3.3 and 5.25 of the concession tender notice (fourth round).
[345] SAC-PR. *Nota Técnica nº 21/DERC/SPR/SAC-PR*, of 10 November 2015.

airports. For example, certain airports from the Northeastern Block (e.g. João Pessoa, Maceió and Recife, fifth round) could compete with airports awarded in the first and fourth rounds (e.g. Natal/São Gonçalo do Amaranto, Fortaleza and Salvador). Likewise, some airports from the Southern Block (e.g. Curitiba and Navegantes, sixth round) could compete with airports awarded in the fourth round (e.g. Florianópolis and Porto Alegre). Even more evident is the scope for competition between São Paulo/Congonhas (SP-MS-PA-MG block, seventh round) and São Paulo/Guarulhos (second round), as both serve São Paulo metropolitan area and therefore compete, at least for some passengers.[346]

The Brazilian government understood that cross-ownership restrictions were not necessary anymore. First, since the fifth round the concession programme aims at awarding a set of airports, both profitable and unprofitable, with a cross-subsidisation approach. In this context, there would be no significant scope for competition between the blocks being awarded or between them and the airports already awarded in previous rounds. Restricting the participation of an airport operator due to the fact that it could compete with a specific airport of the block would be disproportionate as the limitation would apply to all other airports of the block, reducing significantly competition in the auction (i.e. competition for the market). Furthermore, as described above, the Brazilian airport sector would already be sufficiently diversified, which was the objective of the government when the concession programme was initiated and cross-ownership restrictions were introduced.[347]

Although the argument of more competitive auctions may sound appealing, especially in the short-term – as it would assure the effective continuation of the concession programme – it does not dismiss the fact that having different players operating competing airports is always a better outcome and therefore should be promoted. In any case, despite the absence of rules limiting cross ownership, in practice almost all airports among which there is scope for competition are currently managed by different players, as per the table above.

Nevertheless, ensuring different ownership of competing airports should be considered in future concessions, especially when the current concession contracts expire. After all, as competition between airports is limited by nature, all potential opportunities to foster it should be seized. This is even more important in multi-airport systems, as discussed in the next section.

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[346] ARAÚJO, Gilvandro Vasconcelos Coelho de; GUIMARÃES, Marcelo Cesar. *Competitividade na Infraestrutura de Transportes federais: Teoria e Prática*. Curitiba: Juruá, 2023. pp. 128-129.

[347] ANAC. *Exposição de Motivos, Audiência Pública Nº 11/2018*. 2018. Available at: https://www.gov.br/anac/pt-br/assuntos/concessoes/processo-licitatorio-5-rodada/02-audiencia-publica/5r-exp-motivos.pdf. pp. 8-9.

2.6 Competition between airports in the same metropolitan area

Certain cities are served by more than one commercial airport, forming the so-called multi-airport systems. Competition issues emerge as regards two elements – often interconnected – of multi-airport systems: (i) whether some of the airports of a multi-airport system are limited to specific services; and (ii) whether the airports of a multi-airport system are managed by the same player, as already discussed in section 2.5.

The following section will provide an overview of multi-airport systems, including relevant examples from Brazil. Then, a related discussion regarding competition between commercial and non-commercial (business) airports in the same metropolitan area will be presented.

2.6.1 Commercial v. commercial airports (multi-airport systems)

A multi-airport system refers to a set of airports that serve commercial traffic in a metropolitan region. This definition focuses on commercial transport and therefore excludes military bases, as well as general aviation airports. A multi-airport system is usually composed of at least one primary airport (i.e. airports serving a significant part of the total passenger traffic in the system, say more than 20%) and one or more secondary airports (i.e. airports serving a less relevant share of total passengers in the system, say less than 20%).[348]

Multi-airport systems are a relevant segment of the airport industry, accounting for over 80% of worldwide traffic. There are more than 70 multi-airport systems worldwide, comprising more than 160 airports. Examples of multi-airport systems include Chicago (O'Hare and Midway), New York (JFK, Newark, LaGuardia, MacArthur, Westchester, Stewart and Trenton–Mercer), Paris (Beauvais, CDG and Orly) and London (Heathrow, Gatwick, Stansted, London City and Luton). In Brazil, there are (at least in theory) three multi-airport systems: Belo Horizonte (Confins and Pampulhas), Rio de Janeiro (Galeão and Santos Dumont) and São Paulo (Congonhas, Guarulhos and Campinas/Viracopos).[349]

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[348] BONNEFOY, Philippe A.; NEUFVILLE, Richard de; HANSMAN, R. John. Evolution and Development of Multi-Airport Systems: A Worldwide Perspective. *Journal of Transportation Engineering*, v. 136, n. 11, 2010. Available at: https://doi.org/10.1061/(ASCE)0733-947X(2010)136:11(1021). p. 1022; NEUFVILLE, Richard de; ODONI, Amedeo; BELOBABA, Peter; REYNOLDS, Tom. *Airport Systems: Planning, Design, and Management*. New York: McGraw Hill Education, 2013. pp. 110-111.

[349] BONNEFOY, Philippe A.; NEUFVILLE, Richard de; HANSMAN, R. John. *op. cit*. p. 1022; NEUFVILLE, Richard de; ODONI, Amedeo; BELOBABA, Peter; REYNOLDS, Tom. *op. cit.* p. 111.

A multi-airport system may originate either from the construction of a new airport or from the emergence of a secondary airport by using existing infrastructures. The former is more common in the Middle-East, Latin America and Asia Pacific, while the latter is predominant in Europe and North America.[350]

Different elements help explain the emergence of multi-airport systems, including the availability of existing airport infrastructure; the entry of low-cost carriers at under-used airports; and regulatory and political factors. For instance, as North America and Europe have a high density of airports, the construction of greenfield airports is more limited. On the contrary, in Asia-Pacific and Latin America there is a low density of airports, which justified the predominant trend of building new airports. Moreover, the entry of a new airline (especially an LCC) can be linked to the emergence of a secondary airport, thereby changing the dynamics of the market, including by motivating other air carriers to also operate at that airport. Finally, regulatory and political factors contribute to the evolution of multi-airport systems, as governments commonly design multi-airport systems and intervene in its functioning, for example by forcing the distribution of traffic.[351]

On the one hand, multi-airport systems may have some drawbacks, such as limited economies of scale for airlines due to dilution of operation at different airports, as well as restrictions on opportunities for passengers to connect between flights at the various airports within the metropolitan region. On the other hand, multi-airport systems have several benefits. For instance, they alleviate congestion at primary airports and increase capacity of the regional air transport system. They also provide the inhabitants of the metropolitan region with more travel options. In addition, they can minimise monopolistic effects arising from single-airport systems, depending on whether the airports are managed by different players.[352]

Successful multi-airport systems rely on the use, to a relevant extent, of the various airports by airlines and passengers. Systems where the secondary airport is underused vis-à-vis its cost is considered a failure as a transport investment. Metropolitan regions with a high level of airline and passenger traffic are more prone to have thriving multi-airport systems, even though a high level of passenger traffic alone is not enough to ensure a successful multi-airport system.[353]

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[350] BONNEFOY, Philippe A.; NEUFVILLE, Richard de; HANSMAN, R. John. *op. cit.* pp. 1024-1025.
[351] *Ibid.* pp. 1025-1026.
[352] *Ibid.* p. 1028.
[353] NEUFVILLE, Richard de. Management of multi-airport systems: A development strategy. *Journal of Air Transport Management*, v. 2, n. 2, 1995. Available at: https://www.sciencedirect.com/science/article/pii/0969699795000356. p. 100.

Some authors suggest that there exists a threshold of passengers at a given metropolitan region above which the establishment of a multi-airport system would be viable. More commonly, this threshold concerns only originating traffic (i.e. passengers beginning or ending their trips in the metropolitan area), thus excluding transfer traffic, since these passengers only seek convenient connections to their subsequent flights and prefer to be at a single airport. The minimum level of passengers that would justify the establishment or maintenance of a second airport within a metropolitan region has increased over time, since aircraft grew in size, allowing airlines to handle more passengers while maintaining the same flight frequency. In 2012, for instance, some authors suggested that this threshold was 15 million annual originating passengers for the metropolitan region in question.[354] Others indicate the threshold for multi-airport systems based on the total number of passengers (and not only originating passengers) at a given metropolitan region, for instance, 20 to 25 million annual passengers.[355]

Nonetheless, metropolitan regions with less than the threshold amount of traffic may still maintain a multi-airport system for technical or political reasons, although it is more challenging to sustain two airports. For example, the primary airport may not be technically able to handle long-haul aircraft but closing such airport and transforming the secondary airport into the primary airport may not be politically possible.[356]

Governments commonly intervene to ensure that multi-airport systems work well, for example by forcing the distribution of traffic. Specific roles can be assigned to different airports, for instance, one airport may be mainly responsible for international flights while the other for domestic flights. This is the case when the new airport is located farther away from the city centre than the original primary airport and therefore a lack of intervention would make the new airport less attractive for airlines and create competition and market access issues.[357]

Nevertheless, although assigning specific traffic to each airport at a multi-airport system may lead to operational and/or economic gains, the segregation of traffic restricts the scope for competition. One of the main arguments to justify splitting traffic in a multi-airport system rests on the assumption that competition would lead to a lack of co-ordination between airports in terms of investment and other operational aspects. Accordingly, decentralised decision-making

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[354] NEUFVILLE, Richard de; ODONI, Amedeo; BELOBABA, Peter; REYNOLDS, Tom. *op. cit.* pp. 111-112, 127. The authors recognise, however, that sometimes it may be difficult to determine the number of locally generated traffic, as airports and airlines do not always release data on the number of their transfer passengers.
[355] TROYA, Ana Gómez. Multi-Airports Systems – Keys to Success. *ALG*, 13 September 2023. Available at: https://alg-global.com/multi-airports-systems-keys-to-success.
[356] NEUFVILLE, Richard de; ODONI, Amedeo; BELOBABA, Peter; REYNOLDS, Tom. *op. cit.* pp. 113, 118.
[357] BONNEFOY, Philippe A.; NEUFVILLE, Richard de; HANSMAN, R. John. *op. cit.* p. 1026; NEUFVILLE, Richard de. *op. cit.* p. 101; FORSYTH, Peter. Airport Competition: A Perspective and Synthesis. p. 432.

by independent airports could result in an inefficient distribution of airport investments within a city or region, leading to either under or oversupply capacity.[358]

However, this argument is challenged for several reasons. For example, it assumes that maximising welfare is the main goal of airport operators, while in practice a privately owned airport operator seeks to maximise profits. In addition, profit-maximising firms are incentivised to make excessive investments to prevent competitors from entering the market. As investments in airports usually have a long-term horizon, competing airports would be aware of their competitors' plans and could take them into account when deciding on their own investments. Furthermore, relevant investments at airports are commonly subject to review by governments, which restrict the freedom of airports to invest as they wish. This means that governments can – and often do – co-ordinate investment plans for airports in a city or region.[359]

Moreover, the efforts of governments to force traffic shifts between airports have not been successful, and in practice market dynamics ultimately prevail.[360] Airlines tend to concentrate their operations at specific airports in order to avoid giving their competitors a decisive advantage in the market. In fact, the market share achieved by an airline is disproportionate to the total flights it offers in a market, i.e. the airline with the greater frequency of services gets more passengers than its market share. This is due to the behaviour of passengers, who are more likely to choose the airline providing more flights to a given destination. In addition, when deciding whether to include flights at secondary airports, airlines consider not only their ability to achieve competitive load factors in the secondary market, but also if there is enough additional traffic to offset the airline's market share loss in the primary market. Thus, in practice, airlines tend to allocate flights at secondary airports when the primary airport is heavily congested or when they have such a high frequency that there is little penalty to allocate a flight to another location (e.g. when the primary airport already has high levels of traffic). More commonly, secondary airports serve specialised operations in markets distinct from those of the primary airports, such as low-cost carriers.[361]

In this context, planners are not able to effectively change the market dynamics. In practice, forcing traffic to use a specific airport rarely works, since passengers and airlines can evade the spirit of the restrictions by avoiding that airport via intermediate stops. For instance, when the Canadian government tried to force international traffic to use Montreal/Mirabel

[358] FORSYTH, Peter. Airport Competition: A Perspective and Synthesis. p. 432.
[359] *Ibid.* pp. 432-433.
[360] NEUFVILLE, Richard de; ODONI, Amedeo; BELOBABA, Peter; REYNOLDS, Tom. *op. cit.* pp. 120-121.
[361] *Ibid.* pp. 120-121, 124-126; NEUFVILLE, Richard de. *op. cit.* p. 101.

airport during the 1970s, passengers bypassed the restrictions imposed by the government by taking flights to Toronto and then proceeding on to Montreal/Trudeau, the most convenient airport.[362]

Therefore, rather than segregated by the government, the traffic should be freely allocated to the different airports of the multi-airport system, following market dynamics.[363] This means that the market itself leads to an economically efficient traffic distribution and connectivity outcome, instead of a given "optimal" traffic distribution artificially established by the government. This can be further facilitated in a market where the different airports are managed by different players, ensuring that they can effectively compete.[364] The UK experience regarding London airports illustrates this outcome, as described in section 2.5.1.

As mentioned above, Brazil has three multi-airport systems: Belo Horizonte (Confins and Pampulha), Rio de Janeiro (Galeão and Santos Dumont) and São Paulo (Congonhas, Guarulhos and Campinas/Viracopos), which will be further discussed below.[365] It should be noted that over the years, Belo Horizonte and Rio de Janeiro multi-airport systems have been subject to lengthy discussions regarding whether some of the airports should be restricted to specific services and whether they should be managed by the same economic player.

2.6.1.1 São Paulo

São Paulo is the most populous city in Brazil and its economic capital, with the greatest air transport traffic. São Paulo/Guarulhos is a major international airport and a relevant hub, being the busiest airport in South America. São Paulo/Congonhas is located in the city centre and it the most congested airport in Brazil. Campinas/Viracopos is located over 80 km northwest of São Paulo, being an important hub and cargo airport. In 2019, the three airports of São Paulo multi-airport system handled over 74 million passengers (almost one third of total passengers handled in Brazilian airports): around 42 million at São Paulo/Guarulhos, 22 million at São Paulo/Congonhas and 10 million at Campinas/Viracopos.[366] These airports are not subject to any operating restriction (although both Congonhas and Guarulhos have congestion

[362] NEUFVILLE, Richard de; ODONI, Amedeo; BELOBABA, Peter; REYNOLDS, Tom. *op. cit.* p. 119.
[363] CFC. *op. cit*. p. 25.
[364] BURGHOUWT, Guillaume. *op. cit*. p. 22.
[365] As previously noted, multi-airport systems comprise only airports providing commercial air transport services. Therefore, other airports (such as business or general aviation airports) are not considered here but rather in section 2.6.2.
[366] ANAC. *Painel de Demanda e Oferta*. 2023. Available at: https://www.gov.br/anac/pt-br/assuntos/dados-e-estatisticas/mercado-do-transporte-aereo/demanda-e-oferta.

issues, being co-ordinated airports, as discussed in section 3.1) and are currently managed by different operators.

2.6.1.2 Belo Horizonte

Belo Horizonte is the third largest metropolitan region in Brazil, having two airports providing commercial air transport services: Pampulha, situated in the city centre, and Confins, which opened in 1984 and is located 40 km north of downtown Belo Horizonte. Until the early 2000s, Pampulha remained the primary airport in Belo Horizonte and faced severe operational congestion, while Confins was under-used, serving far fewer passengers than its capacity.[367]

In 2005, the government decided to intervene in the market, directing the majority of the traffic to Confins, while Pampulha was assigned to handle exclusively regional commercial flights and general aviation operations. In particular, the restrictions on commercial flights concerned the type of aircraft (only turboprops), aircraft size (less than 50 seats), as well as origin or destination (only non-capital metropolitan regions, cities with less than 1 million inhabitants and cities in neighbouring states, unless at least two stops were made, one of which had to be in the State of Minas Gerais or neighbouring states).[368]

In 2010, the decision to limit the operations at Pampulha was revoked by ANAC, as the restriction was not justified by civil aviation safety or operational capacity reasons. As per Article 48, paragraph 1, of Law No. 11.182/2005, these are the only circumstances in which ANAC could intervene in the market to impose restrictions on airport operations, while in the case of Pampulha the decision was political and economic.[369]

However, despite the abovementioned ANAC's decision, the operations at Pampulha remained low, since the airport manager was prevented from operating jet aircraft due to environmental and safety reasons. ANAC finally authorised Pampulha to operate jet aircraft in 2017, after the airport operator carried out improvement works.[370] Nonetheless, Pampulha

[367] KASARDA, John D. *A Study of Multiple Airport Metropolitan Regions Worldwide: Implications for AITN and Belo Horizonte*. 2008. Available at: https://dcr.lib.unc.edu/indexablecontent/uuid:9be2ea62-5a4b-4a0a-80b9-6f3c7a2ddc7d. pp. 1-2.

[368] Ordonnance DGAC No. 189/2005 of 8 March 2005, replaced by Ordonnance ANAC No. 993/2007 of 17 September 2007, which slightly eased the restrictions. The limitation on aircraft type was abolished, and the restrictions on origin or destination were relaxed, allowing operations to non-capital cities and cities in neighbouring States, unless at least one stop was made in the State of Minas Gerais or in non-capital cities in neighbouring States. Subsequently, according to Resolution CONAC No. 001/2017 and Ordonnance MPTA No. 376/2017, of 11 May 2017, operations at Pampulha were limited to direct flights to or from airports handling less than 600 thousand passengers per year.

[369] Decision ANAC No. 49/2010 of 17 March 2010.

[370] Decision ANAC No. 75/2017 of 18 May 2017.

remained limited to operating regional flights only, due to several decisions taken by other Brazilian government authorities, mainly to prevent creating competition vis-à-vis Confins, which has been under concession since 2014.[371] In other words, the policy aimed at safeguarding the functioning of Confins and protecting the integrity of the concession contract.[372]

In 2020, the Brazilian federal government decided to transfer the management of Pampulha airport (then operated by Infraero) to the state of Minas Gerais,[373] which conducted an auction in 2021 to award a concession to a private operator. The auction did not impose any restrictions on the participation of Confin's concessionaire, and a shareholder of that operator ultimately won the bid, becoming the concessionaire of Pampulha.[374]

Finally, since April 2022 Pampulha no longer faces any operating restrictions.[375] Nonetheless, the concessionaire does not appear to have any plans to introduce commercial operations at the airport, which is expected to continue focusing on business aviation.[376] In turn, Confins is currently one of the busiest airports in Brazil, having handled nearly 11 million passengers in 2019.[377] It seems, therefore, that the multi-airport system in Belo Horizonte will remain in the books only.

2.6.1.3 Rio de Janeiro

Rio de Janeiro is the second most populous city in Brazil, a prime tourist destination and the country's second-largest economy. The multi-airport system in Rio de Janeiro is

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[371] This was a long and complicated process, with several decisions revoking and then re-establishing operating restrictions at Pampulha. See, for instance: Resolution CONAC No. 001/2017 and Ordonnance MPTA No. 376/2017, of 11 May 2017; Resolution CONAC No. 002/2017 and Ordonnance MPTA No. 911/2017, of 24 October 2017; Interim measure issued by TCU on 27 December 2017 (TC 032.997/2017-5); Resolution CONAC No. 001/2018 and Ordonnance MPTA No. 35/2018, of 17 January 2018; Decision TCU No. 132/2018 Plenary of 24 January 2018; Decision TCU No. 464/2019, of 13 March 2019.

[372] See, for instance, SAC-MT. *Nota Técnica Conjunta nº 1/2017/DPE/SEAP-SAC/SAC-MT*. 2017. Available at: http://www.infraestrutura.mg.gov.br/images/documentos/pmi-aeroporto-pampulha/Nota-Tecnica-Conjunta-1-SEI-MT-0252756-Pampulha.pdf.

[373] Agreement No. 07/2020, of 17 June 2020, between the Ministry of Infrastructure and the State of Minas Gerais.

[374] SORIMA NETO, João; DOCA, Geralda. CCR vence leilão do Aeroporto da Pampulha, em BH, com lance de R$ 34 milhões e ágio de 245%. *O Globo*, 5 October 2021. Available at: https://oglobo.globo.com/economia/negocios/ccr-vence-leilao-do-aeroporto-da-pampulha-em-bh-com-lance-de-34-milhoes-agio-de-245-25225351.

[375] Resolution CONAC No. 2.051/2021, of 22 December 2021, coming into effect on 1st May 2022.

[376] MARTINS, Carlos. Um ano após fim das restrições, Pampulha não tem perspectiva de voos comerciais. *Aeroin*, 26 January 2023. Available at: https://aeroin.net/um-ano-apos-fim-das-restricoes-pampulha-nao-tem-perspectiva-de-voos-comerciais/.

[377] ANAC. *Painel de Demanda e Oferta*. 2023. Available at: https://www.gov.br/anac/pt-br/assuntos/dados-e-estatisticas/mercado-do-transporte-aereo/demanda-e-oferta.

composed of two airports: Santos Dumont and Galeão, which handled over 22.5 million passengers in 2019, accounting for nearly 10% of the total passengers handled in Brazil.[378]

Santos Dumont is located in the city centre, close to headquarters of large firms and financial institutions, providing convenient access to passengers, particularly those travelling on business.[379] The main service provided at the airport concerns air shuttle to and from São Paulo/Congonhas (the so-called "Ponte Aérea" or "Air Bridge"). Each day, around 105 flights are operated, with a duration of 40 to 45 minutes on a 380 km route and handling more than 26.5 thousand passengers.[380] In 2019, this was the fourth busiest route worldwide, with over 39.5 thousand flights during the year.[381] The airport faces congestion problems and is co-ordinated, as further discussed in section 3.1.

Located 20 km from downtown Rio de Janeiro, Galeão started its operations in the 1950s. Its construction was deemed necessary as Santos Dumont was unable to handle large aircraft and a growing number of passengers. Galeão then became the primary airport of Rio de Janeiro, being the second busiest Brazilian airport for international passengers, as well as a prominent hub for domestic flights, ranked as the fourth busiest Brazilian airport in 2019.[382]

In 2005, when the Brazilian government first imposed operating restrictions on Pampulha, it also limited operations at Santos Dumont. At the time, the rationale was that Santos Dumont should primarily be used to operate the "Air Bridge" (i.e. air shuttle to and from São Paulo/Congonhas), but also regional commercial flights (i.e. flights to cities in the state of Rio de Janeiro or neighbouring states), as well as general aviation flights. This would direct the main traffic (i.e. domestic and international commercial traffic, apart from the "Air Bridge") to Galeão, which could become a major hub. The limitations imposed on Santos Dumont were similar to those imposed on Pampulha: in addition to "Air Bridge" flights, the airport could only operate flights of a certain aircraft type and size (turboprops with less than 50 seats) and from or to specific locations (only non-capital metropolitan regions, cities with less than 1

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[378] ANAC. *Painel de Demanda e Oferta*. 2023. Available at: https://www.gov.br/anac/pt-br/assuntos/dados-e-estatisticas/mercado-do-transporte-aereo/demanda-e-oferta.

[379] BALAN, Bruno de Paula; CUNHA, Maria Claudia Ferreira da; CUNHA, Renan Cipriano da. *Multi-Airport Systems in Brazil: A Study of the Evolution of Supply and Demand on the São Paulo and Rio de Janeiro Systems*. Embry-Riddle Aeronautical University, Aviation Management Program. 2020. Available at: https://commons.erau.edu/cgi/viewcontent.cgi?article=1021&context=brazil-graduate-works. p. 26.

[380] BUONO, Marcel. Ponte aérea Rio-SP faz 60 anos com 26 mil paxs por dia. *Panrotas*, 5 July 2019. Available at: https://www.panrotas.com.br/aviacao/aeroportos/2019/07/ponte-aerea-rio-sp-faz-60-anos-com-26-mil-paxs-por-dia_165843.html.

[381] ROSEN, Eric. The 2019 List of Busiest Airline Routes in the World. *Forbes*, 2 April 2019. Available at: https://www.forbes.com/sites/ericrosen/2019/04/02/the-2019-list-of-busiest-airline-routes-in-the-world/.

[382] ANAC. *Painel de Demanda e Oferta*. 2023. Available at: https://www.gov.br/anac/pt-br/assuntos/dados-e-estatisticas/mercado-do-transporte-aereo/demanda-e-oferta.

million inhabitants and cities in neighbouring states, unless at least two stops were made, one of which had to be in the state of Rio de Janeiro or neighbouring states). The restrictions related to aircraft and origin/destination did not apply to "Air Bridge" flights.[383]

However, the objective to turn Galeão into a major hub was not achieved. For instance, between 2005 and 2007, the growth rate of passenger traffic with origin and/or destination in Rio de Janeiro was significantly lower than the national average. Moreover, international traffic remained at the same level. Also, the number of domestic flights to Rio de Janeiro did not increase.[384]

In 2009, ANAC revoked the decision to restrict the operations at Santos Dumont. The argument was the same used later to Pampulha: according to Article 48, paragraph 1, of Law No. 11.182/2005, any restrictions imposed on the operations of airports should be based on aviation safety or the operational capacity of the airport. This was not the case of Santos Dumont, where the limitations related to aircraft and origin/destination applied only to certain operations. Thus, since 2009, Santos Dumont can handle any operations within its capacity.[385]

In 2013, Galeão was awarded to a private operator under a concession contract, while Santos Dumont remained under the management of Infraero. Since 2014, the traffic of both airports has declined, following the 2014 Brazilian economic crisis. Galeão remained the primary airport in Rio de Janeiro, although Santos Dumont also handled a relevant part of the traffic (i.e. around one third of all passengers in Rio de Janeiro). However, during and after the Covid-19 crisis, the operations of Galeão worsened even further. For example, while Galeão handled nearly 17 million passengers in 2014, it handled less than 6 million passengers in 2022, which represents a reduction of 65% (or 11 million passengers) in eight years. On the other hand, the effects of the crises on Santos Dumont were less significant, especially after the Covid-19 pandemic, when the traffic at that airport increased, and it handled more passengers than Galeão. In 2022, for instance, Santos Dumont had over 10 million passengers, compared

[383] Ordonnance DGAC No. 187/2005 of 8 March 2005. It should be mentioned that, at the time, both airports were managed by Infraero, and therefore there were reduced incentives for the airport operator to fight against the restrictions imposed by the government. This would not be the case if the airports were operated by different players.

[384] ANAC. *Exposição de Motivos, Proposta de resolução que revoga as limitações e proibições operacionais impostas à Área de Controle Terminal (TMA) do Rio de Janeiro, estabelecidas na Portaria nº. 187/DGAC, de 8 de março de 2005*. 2008. Available at: https://www.gov.br/anac/pt-br/acesso-a-informacao/participacao-social/consultas-publicas/consultas-publicas-encerradas/2008/cons13/exposicaodemotivos_revogacaodaportaria187dgac.pdf. pp. 9-16.

[385] Resolution ANAC No. 75 of 3 March 2009.

with nearly 6 million passengers for Galeão (whose maximum capacity is 37 million passengers per year).[386]

Santos Dumont was planned to be auctioned by the federal government to a private operator through a concession contract in the seventh round in 2022. Santos Dumont would integrate a block alongside Uberlândia, Montes Claros, Uberaba and Rio de Janeiro/Jacarepaguá airports. There would be no traffic limitations at Santos Dumont and the concessionaire would be able to increase its capacity, including to operate international flights.[387]

According to certain stakeholders – including the local government of Rio de Janeiro and Galeão's concessionaire – this would distort competition against Galeão, which would be cannibalised by Santos Dumont, leading to a substantial reduction in its traffic, also undermining the local economy. Thus, they advocated for a co-ordinated operation of both airports, with operating restrictions being imposed on Santos Dumont, such as a maximum number of passengers or serving only specific origins and destinations.[388]

While refusing to establish any limitations on the operations of Santos Dumont, in January 2022 the federal government decided to auction the airport individually – rather than within a block with other airports –, to address the pressure received from the local government.[389]

Struggling to reach profitability and carrying a high level of debt, in February 2022, the concessionaire of Galeão decided to return the management of the airport to the government

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[386] ANAC. *Painel de Demanda e Oferta*. 2023. Available at: https://www.gov.br/anac/pt-br/assuntos/dados-e-estatisticas/mercado-do-transporte-aereo/demanda-e-oferta; GRUBERTT, Bruno; MADUREIRA, Lucas; CAPARELLI, Karol; ALVES, Raoni. Movimentação de passageiros no Aeroporto do Galeão caiu cerca de 65% nos últimos 8 anos; queda indica prejuízo para o RJ. *G1,* 7 April 2023. Available at: https://g1.globo.com/rj/rio-de-janeiro/noticia/2023/04/07/movimentacao-de-passageiros-no-aeroporto-do-galeao-caiu-cerca-de-65percent-nos-ultimos-8-anos-queda-indica-prejuizo-para-o-rj.ghtml; RODRIGUEZ, Diogo. Government announces BRL 300 million investment in Rio airport. *The Brazilian Report,* 3 October 2023. Available at: https://brazilian.report/liveblog/politics-insider/2023/10/03/government-investment-rio-de-janeiro-airport/.

[387] ALMEIDA, Pauline. Anac aprova edital para leilão dos aeroportos Santos Dumont e Congonhas. *CNN Brasil*, 21 December 2021. Available at: https://www.cnnbrasil.com.br/economia/anac-aprova-edital-para-leilao-dos-aeroportos-santos-dumont-rj-e-congonhas-sp/.

[388] ALERIGI JUNIOR, Alberto. Aeroporto Santos Dumont será leiloado isolado de restante de terminais da 7ª rodada. *UOL,* 31 January 2022. Available at: https://economia.uol.com.br/noticias/reuters/2022/01/31/aeroporto-de-santos-dumont-sera-leiloado-isolado-de-restante-de-terminais-da-7-rodada.htm; NEDER, Vinicius. RJ vê espaço para acordo sobre concessão do Santos Dumont, diz secretário. *Terra,* 3 February 2022. Available at: https://www.terra.com.br/economia/rj-ve-espaco-para-acordo-sobre-concessao-do-santos-dumont-diz-secretario,d407a9d7f7378d32f8d5a82c132bfc6e0u4y6fab.html.

[389] MINISTÉRIO DA INFRAESTRUTURA. *Sétima rodada de concessões aeroportuárias contará com quatro blocos de aeroportos*. 31 January 2022. Available at: https://www.gov.br/transportes/pt-br/assuntos/noticias/2022/01/setima-rodada-de-concessoes-aeroportuarias-contara-com-quatro-blocos-de-aeroportos; VIECELI, Leonardo. Governo rejeita restrição a voos no Santos Dumont, diz secretário. *Folha de São Paulo,* 4 February 2022. Available at: https://www1.folha.uol.com.br/mercado/2022/02/governo-rejeita-restricao-a-voos-no-santos-dumont-diz-secretario.shtml

before the end of the concession contract (so-called "rebidding" process, based on Law No. 13.448/2017). This decision was motivated by the low traffic volumes since the beginning of the concession contract, due to the 2014 Brazilian economic crisis and the Covid-19 pandemic.[390] The planned concession of Santos Dumont is also likely to have influenced this decision.

With the decision of Galeão's concessionaire to return the airport, the government chose to withdraw Santos Dumont from the seventh round, and to auction both airports together through a new concession, initially set to be held in 2023. This alternative aimed at setting aside the discussion on whether Galeão and Santos Dumont compete, as both airports would be under the control of the same player.[391]

Nevertheless, in 2023, the federal government imposed a set of restrictions on operations at Santos Dumont. First, the airport could not handle more than 10 million passengers per year.[392] Moreover, since January 2024, scheduled air transport operations at Santos Dumont would only be allowed to or from airports located within a maximum distance of 400 km and that not handled international flights.[393] In practice, only flights from or to São Paulo/Congonhas, Belo Horizonte/Pampulha[394] and other small airports would be allowed.[395]

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[390] RIOGALEÃO. *Atual concessionária continuará responsável pelo aeroporto até a definição de novo operador*. 10 February 2022. Available at: https://www.riogaleao.com/corporativo/releases/riogaleao-formaliza-pedido-para-nova-licitacao-do-aeroporto-internacional-tom.

[391] MINISTÉRIO DA INFRAESTRUTURA. *Governo Federal anuncia licitação conjunta do Galeão e Santos Dumont para 2023*. 10 February 2022. Available at: https://www.gov.br/transportes/pt-br/assuntos/noticias/2022/02/governo-federal-anuncia-licitacao-conjunta-do-galeao-e-santos-dumont-para-2023; TEIZEN, Beatrice. Galeão e Santos Dumont serão leiloados de forma conjunta. *Panrotas*, 10 February 2022. Available at: https://www.panrotas.com.br/aviacao/aeroportos/2022/02/galeao-e-santos-dumont-serao-leiloados-de-forma-conjunta_187398.html.

[392] GARÇON, Juliana. Começa neste domingo a transferência de voos do Aeroporto Santos Dumont para o Galeão, no Rio. *Estadão*, 1 October 2023. Available at: https://www.estadao.com.br/economia/aeroporto-santos-dumont-voos-reduzidos-a-partir-domingo-transferencia-galeao-rio-nprei/.

[393] Resolution CONAC-MPOR No. 1/2023, of 10 August 2023. In theory, such restrictions would remain in effect until the works necessary to improve the safety levels at the airport were completed. In October 2023, the legality of the Resolution CONAC-MPOR No. 1/2023 was challenged before the Federal Court of Accounts – TCU (AMORA, Dimmi. Secretaria do TCU sugere suspender resolução que limita voos do Santos Dumont, caracterizada como ilegal. *Agência Infra*, 11 October 2023. Available at: https://www.agenciainfra.com/blog/secretaria-do-tcu-sugere-suspender-resolucao-que-limita-voos-do-santos-dumont-caracterizada-como-ilegal/).

[394] As mentioned above, there are currently no commercial flights at Belo Horizonte/Pampulha. However, this government policy could give the airport operator incentives to change this situation.

[395] PLANALTO. *Governo Federal anuncia restrição de voos no Santos Dumont a partir de janeiro de 2024*. 10 August 2023. Available at: https://www.gov.br/planalto/pt-br/acompanhe-o-planalto/noticias/2023/08/governo-federal-anuncia-restricao-de-voos-no-santos-dumont-a-partir-de-janeiro-de-2024. In the meantime, Galeão's concessionaire has suggested that it might withdraw its request for returning the airport (CARREGOSA, Lais. Decisão do TCU sobre devolução de concessões de infraestrutura pode manter Galeão sob controle da Changi. *G1*, 2 August 2023. Available at: https://g1.globo.com/economia/noticia/2023/08/02/decisao-do-tcu-sobre-devolucao-de-concessoes-de-infraestrutura-pode-manter-galeao-sob-controle-da-changi.ghtml). Additionally, there is still no definition concerning the future of Santos Dumont (e.g. whether it will be auctioned to a private firm or remain under Infraero's management).

The official argument for the restrictions was that there were necessary works to be conducted at Santos Dumont in order to improve its safety levels. In practice, however, the main reason for limiting operations at Santos Dumont was to implement greater co-ordination between the multi-airport system in Rio de Janeiro, transferring more flights to Galeão in order to enable it to regain its capacity as an international hub.[396]

Indeed, as noted above, it is argued that Santos Dumont has been cannibalising Galeão. It is stated that, unlike São Paulo's multi-airport system, the demand in Rio de Janeiro is not high enough to allow the airports to operate without any co-ordination. In the absence of any intervention, the airports would not compete fairly, with one of them excessively concentrating traffic to the detriment of the other, as was already happening in practice. In particular, concentrating domestic flights at Santos Dumont would reduce the number of international flights at Galeão, as the latter needs to function as an active domestic hub, serving multiple destinations, in order to attract international flights. Additionally, it is argued that Santos Dumont is already operating at the limit of its capacity with reduced service quality, including frequent flight delays and an overcrowded terminal. Therefore, given a market failure, state intervention is deemed necessary to guarantee that the traffic is concentrated at Galeão. This approach would also be consistent with the strategy employed in Belo Horizonte's multi-airport system.[397]

However, this policy has been heavily criticised. It is asserted that the functioning of the civil aviation sector should be based on competition and market dynamics, and thus the decision on which destinations are served to and from Santos Dumont should follow passenger demand and airline supply. In fact, as mentioned above, only when there are safety or airport capacity issues the government should intervene in the market. By restricting the offer to and from

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[396] VIECELI, Leonardo. Entenda o que levou à restrição de voos no Santos Dumont. *Folha de São Paulo*, 15 June 2023. Available at: https://www1.folha.uol.com.br/mercado/2023/06/entenda-o-que-levou-a-restricao-de-voos-no-santos-dumont.shtml; AMORA, Dimmi. Alertas sobre impossibilidade de limite de voos no Santos Dumont vieram da Secretaria de Aviação Civil do ministério. *Agência Infra*, 20 August 2023. Available at: https://www.agenciainfra.com/blog/alertas-sobre-impossibilidade-de-limite-de-voos-no-santos-dumont-vieram-da-secretaria-de-aviacao-civil-do-ministerio/; RODRIGUEZ, Diogo. *op. cit.*

[397] PREFEITURA DO RIO DE JANEIRO. *Coordenação Aeroportuária no Rio: Diagnóstico e Propostas*. 2023. Available at: https://observatorioeconomico.rio/wp-content/uploads/sites/5/2023/04/Estudo-Aeroportos-SMDEIS.pdf; AMORIM, Daniela. Eduardo Paes: 'Não podemos permitir que o Galeão seja destruído'. *O Globo*, 8 April 2023. Available at: https://oglobo.globo.com/economia/negocios/noticia/2023/04/paes-nao-podemos-permitir-que-o-galeao-seja-destruido.ghtml; MALLERET, Constance. Rio authorities discusses measures to save international airport. *The Brazilian Report*, 24 April 2023. Available at: https://brazilian.report/liveblog/2023/04/24/rio-authorities-international-airport/; VIECELI, Leonardo. Entenda o que levou à restrição de voos no Santos Dumont; EDITORIAL. É bom sinal disposição do Planalto para reduzir voos no Santos Dumont. *O Globo*, 15 June 2023. Available at: https://oglobo.globo.com/opiniao/editorial/coluna/2023/06/e-bom-sinal-disposicao-do-planalto-para-reduzir-voos-no-santos-dumont.ghtml.

Santos Dumont, artificially reallocating the traffic to Galeão, the policy limits costumer options and might lead to higher prices, reducing consumer welfare.[398]

Moreover, the policy in question not only affects passengers and airlines using Santos Dumont, as well as the airport operator itself and its ground handlers and commercial firms, but also the entire aviation value chain. This is because the civil aviation sector is highly interconnected, and therefore the effects of limiting operations at Santos Dumont go beyond the flights at that airport, also impacting the route network of each airline, and passengers and airports across the country.[399]

Certain airports reported that the change would reduce their demand, which was likely to lead to requests for the re-establishment of the original economic and financial balance of their concession contracts in favour of the concessionaires. For instance, São Paulo/Guarulhos stated that following the policy the airport would lose 3.3 million passengers per year (or 7% of its total traffic).[400] Vitória also argued that it would be negatively impacted, as 28% of its traffic is from/to Santos Dumont. In addition, as a consequence of the policy, air fares from Vitória to Rio de Janeiro were already increasing.[401]

Furthermore, the artificial reallocation of flights aimed by the policy would not guarantee that the current traffic at Santos Dumont is fully transferred to Galeão. In practice, airlines could opt to transfer part of their operations to other cities instead of Galeão, which would further undermine connectivity issues in Rio de Janeiro.[402] As mentioned above, similar

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[398] IATA. *Restricting Destinations from Santos Dumont Airport Limits Customer Choice*. 15 August 2023. Available at: https://www.iata.org/contentassets/0b6d1c34ebb24fa390b6030be3327751/230815-sdu-airport-comment-eng-final.pdf; FARIAS, André Luiz de Albuquerque; VIANNA, Fernando Villela de Andrade. iNFRADebate: Jabuticaba regulatória – O caso das limitações regulatórias artificiais no Santos Dumont. *Agência Infra*, 2 October 2023. Available at: https://www.agenciainfra.com/blog/infradebate-jabuticaba-regulatoria-o-caso-das-limitacoes-regulatorias-artificiais-no-santos-dumont/; WEBADVOCACY. *Quando a regulação asfixia a concorrência: Será este o caso da decisão para os aeroportos do Rio de Janeiro?* 23 June 2023. Available at: https://webadvocacy.com.br/2023/06/23/quando-a-regulacao-asfixia-a-concorrencia/.

[399] IATA. *Restricting Destinations from Santos Dumont Airport Limits Customer Choice*; TIMM, Luciano Benetti. Mudança regulatória no setor de aeroportos: "chamem o síndico!". *Consultor Jurídico*, 15 September 2023. Available at: https://www.conjur.com.br/2023-set-15/luciano-timm-mudanca-regulatoria-setor-aeroportos; AMORA, Dimmi. Secretaria do TCU sugere suspender resolução que limita voos do Santos Dumont, caracterizada como ilegal; MOYSÉS, Mauricio Boudakian. Os efeitos jurídicos da intervenção no Aeroporto Santos Dumont. *Estadão*, 21 June 2023. Available at: https://www.estadao.com.br/politica/blog-do-fausto-macedo/os-efeitos-juridicos-da-intervencao-no-aeroporto-santos-dumont/.

[400] GIANOTTO, Juliano. Prefeito de Guarulhos busca apoio de vereadores contra restrição de voos entre o aeroporto da cidade e o Santos Dumont. *Aeroin*, 19 September 2023. Available at: https://aeroin.net/prefeito-de-guarulhos-busca-apoio-de-vereadores-contra-restricao-de-voos-entre-o-aeroporto-da-cidade-e-o-santos-dumont/.

[401] ANDRADE, Gustavo; GOMES, João Vitor. Especialistas temem o esvaziamento do aeroporto de Vitória. *A Tribuna*, 13 October 2023. Available at: https://tribunaonline.com.br/economia/especialistas-temem-o-esvaziamento-do-aeroporto-de-vitoria-152554.

[402] IATA. *Restricting Destinations from Santos Dumont Airport Limits Customer Choice*; WEBADVOCACY. *O aeroporto do Galeão como hub doméstico é uma boa solução? Os perigos das propostas que estão na mesa*. 12 June 2023. Available at: https://webadvocacy.com.br/2023/06/12/o-aeroporto-do-galeao-como-hub-domestico-e-uma-boa-solucao/.

policies were already implemented in other airports and jurisdictions (e.g. Washington, London and Montreal), but in most cases they have failed and market dynamics ultimately prevailed.[403]

It is also argued that the reduction of the traffic at Galeão has nothing to do with Santos Dumont. In fact, in the last decades, the city of Rio de Janeiro has experienced a socioeconomic decline and a growing urban violence (including in access routes to Galeão), which has diminished Galeão's attractiveness, both domestically and internationally. Other cities and regions, in turn, have further developed, attracting more passengers. This is particularly the case of São Paulo, where Guarulhos has consolidated as the major international Brazilian airport. In practice, São Paulo/Guarulhos is the actual competitor of Galeão, having attracted much of the traffic that was once handled at the latter.[404]

On the other hand, until 2019 Galeão and Santos Dumont have co-existed harmonically, each with its own demand. However, after the Covid-19 crisis, while Santos Dumont recovered to pre-pandemic levels, the traffic at Galeão remained very low. This means that a substantial part of the passengers that were handled at Galeão was not transferred to Santos Dumont, reflecting the economic decline of Rio de Janeiro, as mentioned above.[405]

Therefore, restricting operations at Santos Dumont does not address the real cause of the low number of passengers at Galeão. On the contrary, this public policy is likely to be ineffective, ultimately distorting competition and reducing consumer welfare.[406]

In November 2023, the federal government decided to lift the limitation of flights to or from airports located within a maximum distance of 400 km from Santos Dumont airport.[407] Nevertheless, it introduced a new cap of 6.5 million passengers per year from January 2024

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[403] NEUFVILLE, Richard de; ODONI, Amedeo; BELOBABA, Peter; REYNOLDS, Tom. *op. cit.* pp. 119-121.
[404] SANTO JUNIOR, Respicio A. Espirito. Entenda o que está por trás da crise do Galeão e a concorrência com o Santos Dumont. *Aero Maganize*, 15 June 2023. Available at: https://aeromagazine.uol.com.br/artigo/entenda-o-que-esta-por-tras-da-crise-do-galeao-e-a-concorrencia-com-o-santos-dumont.html; QUINTELLA, Marcus; SUCENA, Marcelo. Análise Científica da Situação dos Aeroportos Galeão e Santos Dumont. *FGV Transportes*, 28 April 2023. Available at: https://transportes.fgv.br/opinioes/analise-cientifica-da-situacao-dos-aeroportos-galeao-e-santos-dumont; WEBADVOCACY. *O aeroporto do Galeão como hub doméstico é uma boa solução? Os perigos das propostas que estão na mesa;* BRAFMAN, Luciana. Santos Dumont x Galeão não é Fla-Flu. *Veja*, 20 April 2023. Available at: https://vejario.abril.com.br/coluna/luciana-brafman/santos-dumont-x-galeao-nao-e-fla-flu.
[405] QUINTELLA, Marcus; SUCENA, Marcelo. *op. cit.*; ALVES, Raoni. Desequilíbrio entre os aeroportos Santos Dumont e Galeão gera prejuízo; autoridades debatem privatizações. *G1,* 8 April 2023. Available at: https://g1.globo.com/rj/rio-de-janeiro/noticia/2023/04/08/desequilibrio-entre-os-aeroportos-santos-dumont-e-galeao-gera-prejuizo-autoridades-debatem-privatizacoes.ghtml.
[406] In addition to the arguments presented above, it was also argued that Resolution CONAC-MPOR No. 1/2023 was tainted with procedural irregularities, including a lack of Regulatory Impact Assessment (RIA) and technical justifications (TIMM, Luciano Benetti. *op. cit.*; FARIAS, André Luiz de Albuquerque; VIANNA, Fernando Villela de Andrade. *op. cit.*; AMORA, Dimmi. Secretaria do TCU sugere suspender resolução que limita voos do Santos Dumont, caracterizada como ilegal).
[407] Resolution CONAC-MPOR No. 2/2023, of 8 November 2023.

(instead of 10 million, as previously established). While this measure was presented as being based on technical reasons, no proper justifications were provided in practice. The new limitation aims to ensure the highest level of service to the population in accordance with the operational capacity of the airport.[408] Yet, this decision was not made by ANAC, the civil aviation regulator and the competent authority – along with the air navigation regulator, DECEA – to determine the operational capacity of airports.

In sum, the Brazilian experiences with multi-airport systems in Belo Horizonte and Rio de Janeiro illustrate that tensions frequently arise from the interplay between regulation and competition. In both cases, the government intervened in the market with the aim of co-ordinating the functioning of the airports, either by limiting the operations of one of the airports and/or by subjecting them to common ownership. It remains uncertain whether such interventions are indeed successful, although very few similar international experiences have succeeded in this regard. In any case, restricting competition should always be an exceptional measure, duly justified by technical reasons.

2.6.2 Commercial v. non-commercial (business) airports

As mentioned above, the concept of multi-airport system relates to commercial airports, excluding airports dedicated to general aviation and air taxi (commonly called business airports). Nevertheless, in Brazil there exists a discussion related to competition between commercial and business airports, especially when they serve the same metropolitan region.

Under Brazilian law, airports must only be operated by the Federal Executive Branch, either directly (e.g. through an SOE, such as Infraero) or indirectly, through concessions or authorisations, as well as delegations to states and municipalities (which in turn may operate directly or through concessions).[409]

When operated by private firms, public airports[410] providing scheduled or non-scheduled services (so-called commercial airports) must be subject to a concession regime.

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[408] MINISTÉRIO DE PORTOS E AEROPORTOS. *Nota à Imprensa: MPor revoga resolução do Conselho Nacional de Aviação Civil (Conac) sobre o aeroporto Santos Dumont*. 8 November 2023. Available at: https://www.gov.br/portos-e-aeroportos/pt-br/assuntos/noticias/nota-a-imprensa-mpor-revoga-resolucao-do-conselho-nacional-de-aviacao-civil-conac-sobre-o-aeroporto-santos-dumont.

[409] Article 21, item XII, "c", of the Brazilian Constitution and Article 36 of Law No. 7.565/1986 (Brazilian Aeronautical Code).

[410] According to Article 37 of the Brazilian Aeronautical Code, public airports are those open to any aircraft, except in case of restrictions for certain types of aircraft or air services. Only public airports are allowed to have commercial purposes.

However, private airports[411] or public airports providing only general aviation and air taxi services may be operated under the authorisation regime.

A concession refers a grant to a private firm of the right to operate a given infrastructure service and to receive revenues deriving from it. While the ownership of the relevant assets typically remains with the government, the concessionaire assumes control of them and uses them to deliver the specified product or service in line with the contract terms – which may include, for instance, the duration of the concession, the specification of charges, investments, levels of service and fees to be paid to the government.[412] In Brazil, concessions are only awarded through open competitive tenders, in order to ensure competition for the market.[413]

Since 2012, anyone willing to operate a private airport or a public airport exclusively serving general aviation and air taxi (so-called business airport) may request authorisation from the government to do so.[414] An authorisation can be granted to anyone meeting the established criteria, namely a proof that he/she holds a right in land, in order to demonstrate that it is entitled to build and operate the airport.[415] There is no competitive tender to award an authorisation and it is granted with no expiration date, as it does not involve public assets. Moreover, unlike concessions, under the authorisation regime the government has no obligations (e.g. as regards the economic-financial equilibrium of the contract), and the private player operates the airport at its own cost and risk under a private law regime.

Operating airports through the authorisation regime in much simpler and cheaper than under a concession. For instance, airports under authorisation have much less obligations than airports under concession (which are subject, for instance, to mandatory investments, minimum service quality levels, payment of concession fees and more restrictive regulation). In particular, airports under authorisation are not subject to economic regulation regarding aeronautical services. Nevertheless, the airport operator can only impose the airport charges defined by

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[411] According to Article 30, paragraph 2, of the Brazilian Aeronautical Code, private airports are those for private use only, without commercial purposes.

[412] OECD. *Policy Brief: Competition Policy and Concessions*. Paris: OECD Publishing, 2007. Available at: https://www.oecd.org/daf/competition/sectors/38706036.pdf.

[413] Article 175 of the Brazilian Constitution.

[414] While the possibility of operating public airports through the authorisation regime was already mentioned in the Brazilian Constitution and the Brazilian Aeronautical Code, it lacked a proper regulation, which prevented its use in practice. Only with the enactment of Decree No. 7.871/2012 it was possible to implement the authorisation regime to provide general aviation and/or air taxi services.

[415] The authorisation does not exempt the requester from obtaining the relevant licences imposed by legislation in order to operate an airport (e.g. to prove the airport meets the safety and security requirements set by ANAC in its regulations).

ANAC (currently, those described in section 2.4.2), although their amounts can be freely established by the operator.[416]

The objective of the authorisation regime is to foster the airport sector in Brazil, permitting that private investors develop new airports, without the need for a public intervention. So far, the government has centralised the development of new airports (including when involving concessions), but the private sector could play a more active role in this regard, similar to what has been implemented in other transport sectors, like ports.

In addition, since there are already many private airports in Brazil, allowing their operation as public airports may ensure a better use of the airport infrastructure already in place. Until the introduction of the authorisation regime to the operation of public airports, a private airport was not allowed to charge for the use of the infrastructure.[417]

In 2019, Catarina airport, the first business airport under authorisation, was inaugurated in the state of São Paulo, providing general aviation and air taxi services. Since 2021, it is also allowed to operate international flights. More than 20 other business airports have been built across the country and around 10 are under construction or being planned.[418]

Although business airports operating under authorisation are currently limited to general aviation and air taxi services, the possibility of allowing these airports to provide scheduled and non-scheduled air transport has been under discussion for many years. Indeed, it has been argued that there should be a freedom to build and operate a commercial airport whenever there are interested investors, while respecting any environmental restrictions. Enabling business airports to expand their activities could reduce entry barriers – which are very high in the airport sector – and increase the number of airports providing scheduled and non-scheduled services in Brazil, allowing a greater number of passengers to fly within the country. Moreover, airports under authorisation would exert competitive pressure on airports under concession, especially when located in the same metropolitan area, potentially leading to lower prices, better services

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[416] Articles 14 and 15 of Decree No. 7.871/2012 and Article 7 of Resolution ANAC No. 330/2014.

[417] BENTO, Carlos Alberto de Mattos. *Concepção Sustentável: O Desafio dos Novos Aeroportos Privados Brasileiros*. IV Congreso de la Red Iberoamericana de Investigación en Transporte Aéreo, 2013. Available at: https://core.ac.uk/download/pdf/333884459.pdf. p. 108.

[418] SACONI, Alexandre. Luxo e sem fila de espera: Aeroporto executivo em SP busca milionários. *Uol*, 21 August 2022. Available at: https://economia.uol.com.br/todos-a-bordo/2022/08/21/fila-aeroporto-luxo-catarina-antares-polo-aeronautico-executivo-aerovale.htm; DOCA, Geralda. Governo quer voos regulares de aéreas em aeroportos que hoje só recebem jatinhos. *O Globo*, 26 August 2022. Available at: https://oglobo.globo.com/economia/noticia/2022/08/governo-quer-permitir-que-pequenos-aeroportos-privados-recebam-voos-regulares-e-fretados.ghtml. The list of the operating business airports is available at: https://www.gov.br/portos-e-aeroportos/pt-br/assuntos/transporte-aereo/outorgas-aerodromo/projetos-concluidos. The list of the ongoing projects is available at: https://www.gov.br/portos-e-aeroportos/pt-br/assuntos/transporte-aereo/outorgas-aerodromo/projetos-andamentoaviacao.

and more innovation. This would also help relieve congested airports, increasing competition between airlines (as discussed in section 3.1).[419]

Nevertheless, the proposal of liberalising airports under the authorisation regime to provide scheduled and non-scheduled air transport has been criticized by some policy makers and stakeholders, who state that this would distort the well-functioning of the existing airports under concession. In fact, the Brazilian Congress passed a law in 2015 allowing airports under the authorisation system to operate scheduled air transport, but this provision was vetoed by the Brazilian President on the grounds that it would damage the sectoral model of the exploitation of airport infrastructure, particularly by creating a competitive asymmetry in the provision of scheduled air transport between airports under concession and those under authorisation.[420]

In fact, as mentioned above, the concession and authorisation regimes have different characteristics, including as regards the applicable regulatory obligations. In case an airport under the authorisation regime competes with an airport under concession, the latter would be put at a competitive disadvantage, distorting the level playing field.

In addition, this would lead to disputes between concessionaires and the government. The abovementioned controversy between Galeão and Santos Dumont airports in Rio de Janeiro may give an idea of how intensively airports under concession would lobby to prevent the introduction of competition. Moreover, if airports under authorisation are permitted to provide commercial services, airport concessionaires will likely request the government to re-establish the economic and financial equilibrium of concession contracts.[421] However, it is worth noting that these contracts explicitly state that the non-fulfilment of the demand projected at the time the airports were auctioned – including due to the implementation of a new airport within or outside the airports' catchment area – is a risk to be borne by the concessionaire.[422]

The discussions on expanding the operations of airports under authorisation are still ongoing. In 2022, the Brazilian government suggested that this issue was being assessed, with a plan to allow airports under authorisation to operate more commercial flights. Initially (for instance, in the first two or five years), this would be applied only to non-scheduled air transport

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[419] PINTO, Victor Carvalho. *O Marco Regulatório da Aviação Civil: Elementos para a Reforma do Código Brasileiro de Aeronáutica*. Textos para Discussão No. 42. Brasília: Consultoria Legislativa do Senado Federal, 2008. Available at: https://www12.senado.leg.br/publicacoes/estudos-legislativos/tipos-de-estudos/textos-para-discussao/td-42-o-marco-regulatorio-da-aviacao-civil-elementos-para-a-reforma-do-codigo-brasileiro-de-aeronautica. p. 50.

[420] Veto message No. 21, of 19 January 2015, regarding Law No. 13.097/2015.

[421] DOCA, Geralda. *op. cit.*

[422] Item 5.4.3 of the concession contracts of the second, third and fourth rounds; item 5.5.3 of the concession contracts since the fifth round.

– including cargo transport – and extended to scheduled air transport at a later stage. This regulatory change would complement the so-called Simple Flight programme, including Law No. 14.368/2022, which modified the Brazilian Aeronautical Code and abolished the need for a prior authorisation from ANAC for the construction of airports.[423] In addition, this approach would follow the model introduced in the port sector in 1993 (Law No. 8.630/1993) and improved in 2013 (Law No. 12.815/2013) and in the rail sector in 2021 (Law No. 14.273/2021). Nevertheless, the suggested reform was not implemented, and there are no indications that the new government that took office in 2023 will do so.

As mentioned above, the airport market is characterised worldwide by high barriers to entry. For instance, governments often grant airport operators a monopoly by preventing other airports from being built and operated nearby. Moreover, the construction of a new airport is commonly subject to planning and environmental restrictions. While these limitations can be justified and welfare enhancing, this is not always the case. Sometimes, they result from lobbying activities of incumbent airports against the establishment of new ones.[424]

Assessing entry barriers in the airport sector is more and more relevant in the context where many airports worldwide are privately managed and face competition. Indeed, the airport industry has become more business-oriented and a market in airport business assets has emerged. Financial investors are increasingly looking for new profitable business opportunities. Thus, removing or relaxing entry barriers may allow a more competitive airport industry, with more competitors, and consequently lower costs and prices. Nonetheless, for this to happen, the market should have sufficient demand. As indicated in section 2.6.1, the literature usually suggests a threshold of passengers that a given area should have to accommodate a successful multi-airport system.[425] Otherwise, the incumbent operator benefits from economies of scale and scope, and the entry of a new player would increase the average cost of each airport, leading to unnecessary duplication of fixed costs.[426]

Therefore, although prohibiting airports under the authorisation regime from operating scheduled and non-scheduled air transport prevents new airports from entering the market, in

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[423] PRADO, Arthur Gimenes. Secretaria de Aviação Civil anseia decreto para voos regulares em aeroportos privados. *Aeroin*, 3 November 2022. Available at: https://aeroin.net/secretaria-de-aviacao-civil-anseia-decreto-para-voos-regulares-em-aeroportos-privados/.

[424] MÜLLER-ROSTIN, Christiane; EHMER, Hansjochen; HANNAK, Ignaz; IVANOVA, Plamena; NIEMEIER, Hans-Martin; MÜLLER, Jürgen. *op. cit.* pp. 32-33.

[425] For instance, 15 million annual originating passengers (NEUFVILLE, Richard de; ODONI, Amedeo; BELOBABA, Peter; REYNOLDS, Tom. *op. cit.* pp. 111-112).

[426] MÜLLER-ROSTIN, Christiane; EHMER, Hansjochen; HANNAK, Ignaz; IVANOVA, Plamena; NIEMEIER, Hans-Martin; MÜLLER, Jürgen. *op. cit.* pp. 28-29, 34.

some circumstances such limitations may be legitimate. This is especially the case when there is already an airport operating in the same catchment area, and the demand of the region is not high enough to justify the existence of two airports. Despite the fact that competition between airports may also involve other markets (e.g. for cargo and connecting traffic), such airports are more likely to be relevant for serving a local market, since they are usually smaller and designed to be secondary airports.

Thus, opening the market for airports, without any previous study and objective methodology to assess whether there is scope for new airports, might be problematic and indeed distort the well-functioning of the market. After all, as mentioned above, there may be reasoned justifications for limiting the construction of new airports, for instance to ensure the economic viability of an airport's operation or for environmental reasons.

However, in more developed markets, with a substantial demand and more scope for competition, allowing airports under authorisation to operate scheduled and non-scheduled air transport may be beneficial, increasing contestability and enabling consumers to reap the benefits of competition. In these cases, instead of reproducing the outcomes of the competitive process through regulation, the regulator should incentivise the creation of a competitive environment between airports, which could result in no need for economic regulation for the competing airports (including those under concession).[427]

2.7 Conclusion of Chapter 2

Airports were traditionally regarded as natural monopolies, being passive service providers that could not influence demand for airlines and passengers. However, since the late 1980s airports are increasingly facing competition from other airports. This shift can be explained by the liberalisation and deregulation reforms of air transport, as well as the introduction of private capital into airport infrastructure, with many airports being privatised.

In this context, airports become complex and multi-sided business engaged in commercial relationships with airlines and passengers, but also other stakeholders, such as cargo shippers and forwarders, ground handling suppliers and commercial service providers.

[427] RESENDE, Caio Cordeiro de; FONSECA, Ricardo Sampaio da Silva; CALDEIRA, Thiago Costa Monteiro. *op. cit.* p. 35. Likewise, where there are no public airports, permitting the private sector to build and operate commercial airports can be a way of developing the market and increasing the number of destinations served by air transport in Brazil. As these airports are usually unprofitable, it is unlikely that private companies will be interested in building and operating airports at their own cost and risk. Nonetheless, where private airports already exist, allowing them to offer scheduled and non-scheduled air transport can be a powerful way of developing the civil aviation market in Brazil.

Airports are progressively subject to competitive forces, being constrained by airlines and passengers to offer lower prices and better services. Additionally, more and more non-aeronautical revenues are important to airports' finances, complementing revenues from aeronautical activities.

Against this backdrop, airports face increasing competition for different services and market segments, including for local and connecting passengers, cargo and airline services. However, the extent and intensity of such competition vary substantially according to the economic and legal context in question and need to be established on a case-by-case approach.

Most airports are subject to economic regulation, as they are still considered to hold a dominant position that cannot be sufficiently addressed by competition law. Given that aeronautical services are the core business of airports, where they are more likely to engage in abusive behaviour, airport charges are typically subject to price control. Nonetheless, in light of the increasing relevance of non-aeronautical revenues and the greater scope for competition between airports, less stringent regulatory methods or even the absence of regulation can be envisaged, as already implemented in some jurisdictions.

Moreover, in the context of enhanced competition between airports and their privatisation, an important element to be considered concerns common ownership. In fact, ensuring that competing airports are managed by independent players can allow users to reap the benefits of competition. This can be done when designing privatisation processes, impeding competing airports from being collectively sold to a single owner, or when assessing mergers or alliances between competing airports, in order to prevent anti-competitive consolidation.

Furthermore, regulation often seeks to restrict competition between airports serving the same metropolitan area with the aim of influencing the distribution of traffic. Yet, in practice artificial distribution of traffic is seldom successful, market dynamics ultimately prevailing as passengers and airlines can bypass the restrictions by using intermediate stops. This suggests that governments should allow the traffic to be freely allocated to the different airports within a metropolitan region, resulting in an economically efficient traffic distribution and connectivity outcome. Nevertheless, a regulatory framework with different obligations and rights for commercial and business airports can, under certain conditions, be justified to maintain a level playing field.

The issues explored in this chapter underline the complexity of competition between airports, which rely on specific features of each particular market. While airport regulation enhances competition on some occasions, it can also unduly limit it. Given the dynamic and

evolving nature of these markets, which vary in time and space, the interplay between competition law and sector regulation needs to be regularly reassessed in order to establish a more pro-competitive regulatory approach in the airport sector.

3. COMPETITION WITHIN AIRPORTS

In addition to the competitive dynamics between airports, a number of competition issues also emerge within an airport. This chapter delves into such topics, focusing particularly on: airport slots (section 3.1); ground handling services (section 3.2); on-airport jet fuel supply (section 3.3); and airport commercial services (section 3.4).

3.1 Airport slots

Perhaps the clearest illustration in the civil aviation sector of the practical interactions between competition law and sector regulation relates to the system of allocation of airport slots. This is a complex relationship, where tensions often emerge. This section analyses the topic, in particular the rationale for the airport slots regulation, its anti-competitive effects, as well as potential regulatory alternatives.

3.1.1 Overview of airport slots regulation

The number of take-offs and landings allowed in any given period of time is defined by the airport capacity, according to the configuration of runways, the size of the apron and terminal infrastructure. Thus, it is possible – and also common – that an airport is not able to afford all requests for take-offs and landings.[428]

Increasing airport capacity can address these restrictions, for example by building new facilities. Nevertheless, as this requires costly, long-term investments and may be unavailable due to geographical, environmental or socio-economic limitations, demand-management strategies are typically the alternative to ease capacity restrictions with little investment and in a short period. Such strategies refer to any administrative or market-based mechanisms limiting airport access to airlines and other aircraft operators.[429]

The most common solution to address capacity restrictions is the so-called slot allocation, an administrative system promoted by the trade association of the world's airlines

[428] PELLEGRINI, Paola; CASTELLI, Lorenzo; PESENTI, Raffaele. Secondary trading of airport slots as a combinatorial exchange. *Transportation Research*, v. 48, Part E, 2012. Available at: https://www.sciencedirect.com/science/article/pii/S13665545. p. 1009.

[429] VAZE, Vikrant; BARNHART, Cynthia. Modeling Airline Frequency Competition for Airport Congestion Mitigation. *Transportation Science*, v. 46, n. 4, 2012. pp. 439-546. Available at: https://www.jstor.org/stable/23362878.

(IATA) and adopted by most jurisdictions. Indeed, IATA has developed the Worldwide Slot Guidelines, a non-binding instrument providing global standards for the management of airport slots at co-ordinated airports and of planned operations at facilitated airports, as explained below. Each jurisdiction can develop its own local rules for allocating slots and complement the Guidelines with additional rules addressing local specificities.[430]

In 2020, IATA started working together with ACI (an association representing world's airports) and the Worldwide Airport Co-ordinators Group (WWACG, an association representing airport slot co-ordinators and schedules facilitators around the World) in the elaboration of the Guidelines, since then called Worldwide Airport Slot Guidelines (WASG).[431]

The mechanism provided in the WASG aims to allocate scarce capacity in the most efficient possible way, with slots being allocated to those airlines that can use them to the greatest benefit of aviation users. The WASG approach can ease congestion and, if carefully designed and implemented, result in substantial welfare gains for aviation users. In fact, it is argued that the WASG offer a mechanism to balance the advantages of both slot concentration and competition, reflecting current industry consensus.[432]

According to the WASG, an airport slot is defined as "a permission given by a co-ordinator for a planned operation to use the full range of airport infrastructure necessary to arrive or depart at a Level 3 airport on a specific date and time".[433]

Airports are classified by the WASG into three groups: (i) Non-coordinated (Level 1) airports, where the infrastructure capacity is adequate to meet the demands of airport users at all times; (ii) Schedules facilitated (Level 2) airports, where there is potential for congestion during some periods of the day, week, or season, requiring schedule adjustments mutually agreed between the airlines and the facilitator; and (iii) Co-ordinated (Level 3) airports, where "demand for airport infrastructure [such as runways, aprons and terminals] significantly exceeds the airport's capacity during the relevant period", "expansion of airport infrastructure to meet demand is not possible in the short term", and "attempts to resolve the problem through

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[430] EGELANDI, Jagoda; SMALE, Paul. *Capacity Building through Efficient Use of Existing Airport Infrastructure - Summary and Conclusions*. Discussion Paper 2017/27, Summary Report of the Roundtable on Capacity Building through Efficient Use of Existing Airport Infrastructure (9-10 March 2017, Querétaro). Paris: OECD Publishing, 2017. Available at: https://www.itf-oecd.org/sites/default/files/docs/capacity-building-efficient-use-existing-airport-infrastructure.pdf. p. 26.

[431] ACI; IATA; WWACG. *Worldwide Airport Slot Guidelines (WASG)*. Montreal; Geneva: ACI, IATA; WWACG, 2022. Available at: https://www.iata.org/contentassets/4ede2aabfcc14a55919e468054d714fe/wasg-edition-2-english-version.pdf.

[432] EGELANDI, Jagoda; SMALE, Paul. *op. cit*. p. 26.

[433] ACI; IATA; WWACG. *op. cit.* p. 10.

voluntary schedule adjustments have failed or are ineffective".[434] To land or take off at a co-ordinated airport, airlines and other aircraft operators must have a slot allocated by the local airport co-ordinator.

Currently, there are more 200 slot co-ordinated airports worldwide, accounting for over 1.5 billion passengers (around 43% of global traffic). This number is expected to grow substantially further, in light of the lack of infrastructure expansion at airports to meet growing demand.[435]

Although most jurisdictions implement the WASG slot allocation mechanism to address capacity limitations, it should be noted that in the United States only three airports follow such system (New York/JFK, New York/LaGuardia and Washington/Ronald Reagan). At all other airports, airlines can usually schedule flights as they wish, working in co-ordination with airport operators. It is argued that the marginal costs of delays at airports dominated by an airline or an alliance are often overstated, as such costs would be internalised by the airline or alliance. However, in practice it is unlikely that all flights at Level 2 airports, such as Chicago O'Hare, Los Angeles, San Francisco, and Newark Liberty, are completely freely scheduled by airlines, since they are expected to seek and get schedule approval from the Federal Aviation Administration (FAA). Otherwise, if the airport becomes Level 3, the airline will not receive priority for any of the non-approved flights.[436]

At a Level 3 airport, there are three main players in the slot-allocation process: (i) the airport operator, which establishes the supply-side inputs (i.e. the airport capacity for the given period or the available slots per hour); (ii) the airlines and other aircraft operators, which set the demand side, seeking to obtain slots to operate at the airport; and (iii) the slot co-ordinator, an independent authority responsible for allocating the slots according to WASG rules.[437]

Slots are generally allocated for a six-month "season" (Summer or Winter season).[438] Requests typically refer to a set of demands for the same time, normally on the same day of the week and for at least five weeks. First, the co-ordination parameters are set, including the

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[434] *Ibid*. p. 20.
[435] IATA. *Worldwide Airport Slots*. 2023. Available at: www.iata.org/en/policy/slots/#tab-8.
[436] EGELANDI, Jagoda; SMALE, Paul. *op. cit*. p. 25.
[437] JIANG, Yu; ZOGRAFOS, Konstantinos G. A decision making framework for incorporating fairness in allocating slots at capacity-constrained airports. *Transportation Research*, v. 126, Part C, 2021. Available at: https://www.sciencedirect.com/science/article/pii/S0968090X. p. 2.
[438] According to the WASG, equivalent seasons are "consecutive summer seasons (two summers) or consecutive winter seasons (two winters) as opposed to two consecutive seasons (a summer and a winter season)" (ACI; IATA; WWACG. *op. cit*. p. 62).

maximum capacity available for allocation at each airport.[439] Then, the co-ordinator presents an initial allocation of slots to airlines based on their requests, which is followed by a biannual IATA slot conference,[440] where airlines meet to discuss schedule adjustments with co-ordinators. At such conferences, airlines may also trade slots, through bilateral agreements. After the slot conference, slots can be allocated until the start of the season, either for new requests or modification or exclusion of existing ones.[441]

The main criterion for slot allocation is the principle of historic precedence, the so-called grandfather clause. Accordingly, the WASG state that "an airline is entitled to retain a series of slots for the next equivalent season if they were operated at least 80% of the time during the period for which they were allocated".[442] This means that slots are first allocated to airlines having the corresponding series of slots in the preceding season, provided that they complied with the "use it or lose it" rule, referring to a minimum slot usage of at least 80%. Incumbent airlines may also ask for a change in the time of a slot. Slots are only allocated to new entrants (i.e. those airlines without significant presence at the airport – according to the WASG, those airlines holding fewer than 7 slots on any day) after accommodating the requests for slot allocation from incumbent airlines.[443]

After the initial allocation of historical slots to those airlines having grandfather rights, the co-ordinator establishes a slot pool, including the remaining slots and any newly created ones. According to the WASG, 50% of the slots from the slot pool should be allocated to new entrants and the other 50% should be allocated to non-new-entrant requests, unless the latter are less than 50%.[444]

If slots cannot be allocated following these criteria, co-ordinators should take into account a number of factors to determine which of the competing requests should be allocated

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[439] There are different ways of determining an airport's capacity. In some cases (e.g. in Mexico and Germany), it is established by legislation. Alternatively, this can be made by the government (e.g. in the Toronto International Airport). In most cases, the airport operator is entitled to declare its own capacity (OECD. *Review of the Regulation of Freight Transport in Mexico*. Paris: OECD Publishing, 2017. Available at: https://www.oecd.org/gov/review-of-the-regulation-of-freight-transport-in-mexico-9789264268364-en.htm. p. 109).

[440] These conferences, held in June and November (to address the following Winter and Summer seasons, respectively), have been taking place since 1948 and attract over 1 100 delegates, with representatives of more than 200 slot co-ordinated airports and more than 215 airlines. They represent a forum for the co-ordination of planned operation at Level 2 and Level 3 airports (IATA. *Slot Conference*. 2023. Available at: https://www.iata.org/en/programs/ops-infra/slots/conference/).

[441] FAIRBROTHER, Jamie; ZOGRAFOS, Konstantinos G.; GLAZEBROOKA, Kevin D. A Slot-Scheduling Mechanism at Congested Airports that Incorporates Efficiency, Fairness, and Airline Preferences. *Transportation Science*, v. 54, n. 1, 2020. Available at: https://pubsonline.informs.org/doi/abs/10.1287/trsc.2019.0926. p. 116.

[442] ACI; IATA; WWACG. *op. cit.* p. 33.

[443] FAIRBROTHER, Jamie; ZOGRAFOS, Konstantinos G.; GLAZEBROOKA, Kevin D. *op. cit.* p. 116; ACI; IATA; WWACG. *op. cit*. p. 63.

[444] ACI; IATA; WWACG. *op. cit.* p. 34.

a slot, including the effective period of operation, operation factors, time spent on waitlist, type of consumer service and market, connectivity, competition and environment. Local guidelines can also be developed to determine how to allocate the remaining slots.[445]

The WASG do not prohibit "slot mobility", either through the swap of slots or in a secondary process of transfer of slots between airlines, whether for compensation or free of charge. Nevertheless, mobility of newly allocated slots (i.e. slots other than historic slots or changed historic slots) should be carefully analysed to prevent airlines taking advantage of an enhanced priority to obtain slots simply to transfer them to another airline. In addition, the WASG recognise that national regulations can prohibit slot swaps for compensation or consideration and slot transfers between airlines, whether or not for compensation or consideration.[446]

No slots are allocated at schedules-facilitated (Level 2) airports, and the grandfather principle is not used to define the operations at these airports. In fact, Level 2 airports follow a process of schedule adjustments mutually agreed between airlines and the facilitator to avoid exceeding the airport's co-ordination parameters. Facilitators must be independent and act in a neutral, transparent, and non-discriminatory way. The WASG suggest that facilitators should consider and apply some priorities when identifying the schedule adjustments, such as services from the previous equivalent season, introduction of year-round operations and effective period of operation.[447]

In Brazil, the allocation of slots at congested airports follows the WASG mechanism, as established in Resolution ANAC No. 682/2022. ANAC determines which airports are co-ordinated and schedules facilitated, also being the slot co-ordinator. There are currently five co-ordinated airports: Belo Horizonte/Pampulha, São Paulo/Congonhas, São Paulo/Guarulhos, Recife and Rio de Janeiro/Santos Dumont.[448]

Slot allocation in Brazil is also based on historic precedence and the "use it or lose it" rule. Resolution ANAC No. 682/2022 does not specify the percentage of the slots from the pool

[445] *Ibid*. pp. 35-36.
[446] *Ibid*. pp. 39-40.
[447] *Ibid*. pp. 30-31.
[448] Another eight airports are designated as schedules facilitated, where the airport operator itself is responsible for allocating its infrastructure to airlines: Belo Horizonte/Confins, Brasília, Florianópolis, Fortaleza, Porto Alegre, Rio de Janeiro/Galeão, Salvador and Campinas/Viracopos. Nevertheless, as mentioned above, the WASG provide that the facilitator should be an independent agent, which is not the case of airport operators. The allocation of flights at schedules facilitated airports should follow the historic precedence. That is, airlines that have operated a flight on a given time in the previous equivalent season is entitled to operate on the same time of the following season. The airport operator is free to set the criteria for the allocation of new flights, but such criteria must be published before the initial allocation.

that must be allocated to new entrants. This is determined on a case-by-case basis when ANAC designates an airport as co-ordinated. Currently, this percentage is set at 50%,[449] except at São Paulo/Congonhas (the most congested airport in Brazil), in which the percentage is 100%,[450] as explained further below.

Similarly, the criterium for defining new entrants is established on a case-by-case basis when ANAC designates an airport as co-ordinated. At present, an airline must hold a maximum of six slots on a specific day at a co-ordinated airport to be considered a new entrant.[451] Once again, a distinct regime was introduced for São Paulo/Congonhas, where an airline is deemed to be a new entrant if it holds at most 18 slots on a specific day.[452]

In the event of a tie or conflicts during the allocation of slots, Resolution ANAC No. 682/2022 provides subsidiary criteria to be followed, without any order of priority: (i) better environmental performance; (ii) longer series of slots (operational period); (iii) larger aircraft; (iv) greater promotion of competition at the airport; or (v) higher operational efficiency.[453]

3.1.2 Anti-competitive effects of airport slots regulation

While the WASG mechanism intends to ease congestion, reduce delays and increase the efficient use of airport infrastructure, it raises several competition concerns. In fact, the slot allocation system is often indicated as a regulatory mechanism that substantially lessen competition in the civil aviation sector.

The main focus of the criticism rests on the grandfather clause, which grants incumbent airlines more favourable treatment, preventing – or at least limiting – new entry. The need for slots is indeed the most critical barrier deterring new entry into congested airports, especially on certain routes, as in such cases most of (if not all) slots are already allocated to incumbent airlines.[454] This is confirmed by the fact that incumbent carriers are the leading players at the largest co-ordinated airports in Europe (e.g. Amsterdam/Schiphol, Barcelona/El Prat, Frankfurt, Istanbul, London/Heathrow, London/Gatwick, Moscow/Sheremetyevo, Munich, Paris/CDG,

[449] Decisions ANAC No. 534, 537, 536 and 535, of 7 July 2022.
[450] Decision ANAC No. 533, of 7 July 2022
[451] Decisions ANAC No. 534, 537, 536 and 535, of 7 July 2022.
[452] Decision ANAC No. 533, of 7 July 2022
[453] Article 35 of Resolution ANAC No. 682/2022.
[454] OECD. *Roundtable on Airline Mergers and Alliances, Roundtables on Competition Policy*. Paris: OECD Publishing, 1999. Available at: www.oecd.org/daf/competition/mergers/2379233.pdf. p. 11; OECD. *Airline Competition, OECD Competition Policy Roundtable Background Note*. Paris: OECD Publishing, 2014. Available at: https://one.oecd.org/document/DAF/COMP(2014)14/en/pdf. p. 15; EGELANDI, Jagoda; SMALE, Paul. *op. cit*. p. 26.

Rome/Fiumicino) and in the United States (New York/JFK, New York/LaGuardia and Washington/Ronald Reagan). In such airports, the incumbent airlines control the majority of slots (in some cases up to 80%).[455]

Moreover, the managers of airlines from the European Union and the European Free Trade Association states have indicated that the non-availability of slots at major airports was seen as the most severe entry barrier to aviation markets, according to a 2013 study.[456] Another research from 2018 reached the same conclusion, stating that the grandfather principle reinforces incumbency and restricts entry. This effect is strengthened by the suspension of the "use it or lose it" rule in times of sharp demand declines, such as after 9/11 and in the post-2008 economic downturn.[457-458]

In light of the current slot allocation mechanism, slot mobility is limited at most congested airports. For example, according to a 2011 study commissioned by the European Commission, only one of the most congested airports in the European Union (London/Gatwick, which was part of the EU at the time of the study) had experienced a substantial change in slot holdings in the previous five years.[459]

The present system also leads to a low market contestability, as the new-entrant rule fragments schedules by allocating – when there are available slots to be distributed following

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[455] ATRS. *op. cit.*

[456] KAPPES, Jan Willem; MERKERT, Rico. Barriers to entry into European aviation markets revisited: A review and analysis of managerial perceptions. *Transportation Research*, v. 57, Part E, 2013. Available at: https://www.sciencedirect.com/science/article/pii/S1366554513000161. p. 62.

[457] GUIOMARD, Cathal. Airport slots: Can regulation be coordinated with competition? Evidence from Dublin airport. *Transportation Research*, v. 114, Part A, 2018. Available at: https://www.sciencedirect.com/science/article/pii/S0965856416304104. p. 132.

[458] This also happened during the Covid-19 pandemic, when most countries around the world introduced waivers of the rules on the use of airport slots, providing flexibility to flight schedules and ensuring that airlines did not have to operate flights at least 80% of the time to keep the historic precedence. In Brazil, for instance, ANAC put in place a conditional waiver for historic slots. To keep the grandfather right, airlines had to return slots not intended to be used up to four weeks before operation for international flights. For domestic flights, the waiver only applied if the cancellation was made for the entire series of historic slots, provided that these slots were returned within 7 days after the release of the baseline reference. The cancellation of new allocated slots did not receive alleviation. New slots and slots not returned/cancelled had to comply with a regularity threshold of 70% of slot usage to keep the historic precedence. Since the Northern Winter 2022 season, only slots related to international flights received alleviation, and no waiver was applied to domestic flights. Furthermore, after a full slot waiver in the first months of the Covid-19 pandemic, for the Northern Winter 2022 season the European Union was requiring a 75% (instead of the usual 80%) to retain historic rights for future seasons, with a return to the 80% requirement for the summer scheduling period 2023. In addition, the "justified non-use of slots" exception, protecting airlines' historic rights to slots when state-imposed Covid-19 related measures severely impeded passengers' ability to travel, has also been extended. See https://www.iata.org/en/policy/slots/covid-19-slots/ for further information.

[459] STEER DAVIES GLEAVE. *European Commission Impact assessment of revisions to Regulation 95/93, Final report (sections 1-12)*. London: Steer Davies Gleave, 2011. Available at: https://transport.ec.europa.eu/system/files/2016-09/2011-03-impact-assessment-revisions-regulation-95-93.pdf. p. 123.

the historic precedence slot allocation – few slots to many airlines, usually without enough presence at the airport to impose competitive pressure on the dominant air carriers.[460] Conversely, mid-sized incumbents already holding a set of slots tend to be a stronger competitive threat to dominant airlines than smaller new entrants, with no or few slots.[461]

Evidence of this is the fact that many slots allocated to new entrants are given back to the pool after just one season. Moreover, less than 50% of slots were allocated following the new entrant-rule at most airports in the European Union, in part because there were no requests that met the requirements.[462]

The current system is also likely to incentivise sub-optimal or undesirable mergers and acquisitions, which may increase market concentration, as all slots formerly held by the merging airlines are consolidated within a single player. Despite possible synergies, mergers and acquisitions may be just a strategy to obtain slots, with no further competition benefits. Although competition authorities can impose remedies, including the sale of some of the acquired slots, the remaining slots can still be used by the post-merger airline in its own rout portfolio.[463]

In addition to contributing to market concentration, the current slot allocation approach is also reputed to be inefficient from an economic perspective. The system may prevent airlines from making the best use of available airport infrastructure since the regulation allows incumbent airlines to systematically cancel unprofitable flights, while maintaining their power to deter potential competitors from entering congested airports.[464] As airlines are unlikely to cede slots out of fear of rival entry, the "use it or lose it" rule may not be sufficient to guarantee the effective use of the infrastructure.[465]

Indeed, "slot hoarding" behaviour (also called "slot babysitting") is a common practice worldwide, in which airlines use slots sub-optimally by operating low load factors or small

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[460] STEER DAVIES GLEAVE. *European Commission Impact assessment of revisions to Regulation 95/93*. p. 196.
[461] HAYLEN, Andre; BUTCHER, Louise. *Airport slots, House of Commons Library Briefing Paper No. CBP 488*. London: UK House of Commons Library, 2017. Available at: https://researchbriefings.files.parliament.uk/documents/SN00488/SN00488.pdf. p. 13.
[462] STEER DAVIES GLEAVE. *European Commission Impact assessment of revisions to Regulation 95/93.* p. 5.
[463] GILLEN, David; STARKIE, David. *Congested Hubs, the EU Slot Regulation and Incentives to Invest*. 2015. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2592449. p. 8.
[464] MIRANDA, Victor A. P.; OLIVEIRA, Alessandro V. M. Airport slots and the internalization of congestion by airlines: An empirical model of integrated flight disruption management in Brazil. *Transportation Research*, v. 116, Part A, 2018. Available at: https://www.sciencedirect.com/science/article/pii/S096585641830051X. p. 201.
[465] AVENALI, Alessandro; D'ALFONSO, Tiziana; LEPORELLI, Claudio; MATTEUCCI, Giorgio; NASTASI, Alberto; REVERBERI, Pierfrancesco. An incentive pricing mechanism for efficient airport slot allocation in Europe. Journal of Air Transport Management, v. 42, 2015. Available at: https://www.sciencedirect.com/science/article/pii/S0969699714001094. p. 27.

aircrafts at highly congested airports to protect their slots, restricting the total number of passengers carried and ultimately resulting in higher fares.[466]

For example, the abovementioned study commissioned by the European Union identified that, at some airports where demand for slots was substantially higher than supply, over 10% of the granted slots were not used. It also showed that the number of transported passengers at congested airports could increase, and fares could be reduced, if larger aircrafts were utilised.[467] Similarly, a research on two co-ordinated airports in the United States (New York/LaGuardia and Chicago/O'Hare[468]) demonstrated that their slot allocation system was also vulnerable to "slot hoarding" behaviour by airlines, notably the dominant ones.[469]

It should be noted that in addition to loosing historic precedence for future slot allocation, proven intentional slot misuse[470] can also be sanctioned with fines. However, before imposing any enforcement actions for intentional slot misuse – including the loss of historic precedence and financial sanctions –, the slot co-ordinator must engage in a dialogue with the airline, requesting an explanation for the discrepancy in the use of slots, as well as providing the carrier with the opportunity to propose corrective actions.[471] In this context, imposing financial sanctions for slot misuse is not a common practice, although may occur in exceptional cases.[472]

Additionally, "slot hoarding" may also characterise an anti-competitive infringement, although proving such abusive behaviour can be particularly challenging. For example, in 1994, the Italian Competition Authority ruled that Alitalia – Italy's national carrier – had abused its dominant position through "slot hoarding" behaviour. Accordingly, the airline had retained slots that would otherwise have been made available to other air carriers by scheduling flights and then routinely cancelling them. The authority highlighted that weather conditions and other

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[466] HAYLEN, Andre; BUTCHER, Louise. *op. cit*. p. 12.
[467] STEER DAVIES GLEAVE. *European Commission Impact assessment of revisions to Regulation 95/93.* p. 5.
[468] According to the FAA, Chicago/O'Hare is currently a Level 2 airport (https://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/systemops/perf_analysis/slot_administration/slot_administration_schedule_facilitation/level-2-airports/).
[469] FUKUI, Hideki. Do carriers abuse the slot system to inhibit airport capacity usage? Evidence from the US experience. *Journal of Air Transport Management*, v. 24, 2012. Available at: https://www.sciencedirect.com/science/article/pii/S0969699712000725.
[470] For instance, operating a flight at a significantly different time from the allocated slot; operating a flight in a significantly different way to the allocated slot; holding slots that the airline does not intend to operate, transfer, swap or use in a shared operation; holding slots for an operation other than that planned with the purpose of denying capacity to another airline or aircraft operator; and requesting new slots that the airline does not intend to operate (ACI; IATA; WWACG. *op. cit*. p. 45).
[471] ACI; IATA; WWACG. *op. cit*. pp. 47-48.
[472] For example, in December 2021, ANAC sanctioned the Brazilian airline GOL with fines of BRL 2.3 million for misuse of slots, which involved the operation of flights at a significantly different time from the allocated slots (Administrative Proceeding ANAC No. 00058.131272/2015-80).

circumstances beyond the control of the firm were the causes of only a few numbers of flight cancellations.[473]

Furthermore, inefficiencies may also arise from the use of slots in unproductive ways. This is the case, for instance, of airlines operating small aircrafts and/or low load factors, as well as closely scheduling several flights to the same destination. Nevertheless, while such operations may be regarded as inefficient, serving only as a strategy for airlines to comply with the "use it or lose it" rule, there may be competition reasons for this behaviour, especially related to business travellers' demands.[474]

The current slot-allocation mechanism is also insulated from market forces.[475] As airports are not allowed to charge market-clearing prices for slots, incumbents may pay less than a potential market price, earning economic rents and preventing the airlines with the highest willingness to pay from doing so.[476] This hinders efficient outcomes, including the potential for more creative use of slots and new business models.[477]

Moreover, slot allocation can lead to higher fares for consumers.[478] A 2014 study, for example, identified that routes involving co-ordinated airports had airfares 7% higher on non-stop routes and 4.3% higher on one-stop routes, reflecting the scarcity value of slots.[479]

However, some argue that the main goal of slot allocation is not to reduce average fares, but rather to guarantee that the airport infrastructure and the downstream airline markets operate efficiently. Accordingly, Valdes and Gillen examined a major slot reallocation at Mexico City International Airport in 2010, after the bankruptcy of a large incumbent airline (Mexicana). The reallocation allowed several low-cost carriers to enter the market. Nonetheless, the major Mexican airline (Aeromexico) retained the largest market share at the airport – accounting for around 50% of all slots –, which resulted in an increase of fares on most routes. Against this background, the authors estimated the consumer welfare changes (i.e. fares, route entries and route frequency changes) that would result if more slots had been reallocated to the LCCs. Three counterfactual scenarios were assessed, each with different slot reallocation – but in all

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[473] OECD. *Roundtable on Airline Mergers and Alliances*. p. 55; OECD. *Airline Competition*. p. 17.
[474] BALL, Michael O.; BERARDINO, Frank; HANSEN, Mark. The use of auctions for allocating airport access rights. *Transportation Research*, v. 114, Part A, 2018. Available at: https://www.sciencedirect.com/science/article/pii/S0965856416303287. p. 191.
[475] *Ibid*. p. 190.
[476] HAYLEN, Andre; BUTCHER, Louise. *op. cit*. p. 12.
[477] BALL, Michael O.; BERARDINO, Frank; HANSEN, Mark. *op. cit*. p. 193.
[478] *Ibid*. p. 190.
[479] ZOU, Bo; HANSEN, Mark. Flight delay impact on airfare and flight frequency: A comprehensive assessment. *Transportation Research*, v. 69, Part E, 2014. Available at: https://www.sciencedirect.com/science/article/pii/S1366554514000933. p. 63.

of them 450 slots per month would be withdrawn from Aeromexico and reallocated to low-cost carriers. In the three scenarios, the overall consumer welfare would have been reduced, suggesting that reallocating slots to smaller airlines does not necessarily benefit consumers. Indeed, according to the abovementioned authors, it all depends on the current distribution of slots, which routes lose services, which routes gain services from which airlines, as well as how market power is exercised at the route level.[480]

3.1.3 Pro-competitive alternatives to airport slots regulation

Some regulatory alternatives have been proposed – primarily by the academic literature – to address the deficiencies arising from the WASG system, implemented by most jurisdictions. The proposed solutions can be categorised into two broad groups: (i) improvements to the current slot allocation system and (ii) market-based mechanisms to either replace or complement the present system.

3.1.3.1 Improvements to the current airport slot allocation system

Although the WASG mechanism is deemed to be the best solution for airport capacity restrictions – and therefore should be maintained –, specific changes could be introduced to improve the system and promote more competition in the market.

For example, some propose making the grandfather rule more flexible, e.g. by increasing the minimum slot usage percentage beyond 80%. Nevertheless, it is also pointed out the need to avoid raising the "use it or lose it" threshold too much as this would lead to slot withdrawals for reasons outside air carriers' direct control.[481]

Establishing a percentage higher than 50% of slots from the pool to be allocated to new entrants is another potential measure to be adopted. [482] For example, since 2019 ANAC

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[480] VALDES, Victor; GILLEN, David. The consumer welfare effects of slot concentration and reallocation: A study of Mexico City International Airport. *Transportation Research*, v. 114, Part A, 2018. Available at: https://www.sciencedirect.com/science/article/pii/S0965856417303944. p. 257.

[481] STEER DAVIES GLEAVE. *European Commission Impact assessment of revisions to Regulation 95/93.* p. 12.

[482] The former SEAE, for instance, proposed that 100% of slots from the pool should be firstly allocated to new entrants in all co-ordinated Brazilian airports (SEAE. *PARECER SEI Nº 20496/2021/ME*. 2021. Available at: https://www.gov.br/economia/pt-br/acesso-a-informacao/reg/advocacia-da-concorrencia/2020-2021/agencia-nacional-de-aviacao-civil-anac/parecer-20496.pdf/view).

established that 100% of slots from the pool must be first allocated to new entrants at São Paulo/Congonhas airport, the most congested airport in Brazil.[483]

A cap of slots per airline may also promote more competition, fostering market contestability. Under this rule, all slots from an air carrier exceeding the maximum number of slots allowed would be returned to the pool and reallocated to other airlines. For instance, the new Brazilian regulation governing slot allocation (Resolution ANAC No. 682/2022) sets out that when defining the co-ordination parameters for slot allocation at co-ordinated airports, ANAC may introduce a slot cap for each airline (i.e. a maximum number of slots an airline can hold at the airport, unless no other carriers are interested in obtaining those slots). The cap also applies to slots acquired through trading and mergers. So far, such a cap has been used at São Paulo/Congonhas airport, where an airline cannot hold more than 45% of the total slots.[484]

Additionally, setting expiry dates on grandfather rights would ensure a rotation of airlines, since after the fixed time period the slot would be returned to the pool and then reallocated to other air carriers.[485] To determine the right length of time, it would be necessary to take into account the time required for investment return, considering, for example, start-up and marketing costs.

Reviewing the definition of new entrants may also enhance the efficiency of slot allocation. As noted above, the present regime leads to fragmentation of schedules at congested airports, without enabling a more aggressive competition in the market. In this sense, an airline could be considered a new entrant if it holds less than 10% of slots at the airport, taking into account the entire airline owning group and even any joint venture partners. This would allow some airline owning groups to build up a significant slot holding enabling them to compete more efficiently with large dominant airlines.[486] Otherwise, an airline holding a small percentage of the total slots at the airport (e.g. 7 slots on any day, according to the WASG) would be classified as a non-new entrant, and it would be given the same treatment that dominant airlines undergo regarding the allocation of slots from the pool. In this case, a small

[483] ANAC's decisions No. 109 of 25 July 2019 and No. 533 of 7 June 2022.
[484] ANAC's decision No. 533 of 7 June 2022.
[485] SAC. *Nota Técnica nº 8/2020/DPR/SAC*. 2020. Available at: https://sei.anac.gov.br/sei/modulos/pesquisa/md_pesq_documento_consulta_externa.php?9LibXMqGnN7gSpLFOOgUQFziRouBJ5VnVL5b7-UrE5SVJYgA6aZWrbYZEdJOsnutq61Q48ADIYo0U00jgrePMl7JSiDfrCN2qP1e8nZnrZaTq5tRog.
[486] STEER DAVIES GLEAVE. *European Commission Impact assessment of revisions to Regulation 95/93.* p. 11.

airline would hold only few grandfather rights, making it even more challenging to strengthen its market share at the airport.[487]

In addition, the most efficient slot use depends on the number of available slots set through the capacity declaration. If the declared capacity is determined below the level of economic capacity, it may result in extra scarcity rents. Especially in the past, incumbent dominant airlines played a major role in fixing the total number of slots, raising concerns about the exercise of a dominant position to prevent competition. Thus, an efficient use of slots requires a neutral and transparent determination of the airport capacity.[488]

The academic literature indicates that there is significant room for improvement in the current practice of determining declared capacity, which is at the heart of optimising the allocation and use of scarce airport resources.[489] Under this perspective, changes in the procedure for setting declared capacity, as well as the implementation of new techniques for increasing declared capacity may enhance efficiency of slot allocation.

In Brazil, the declared capacity is determined by the airport operator, in accordance with DECEA, which is responsible for controlling Brazilian airspace. It should be noted that since 2019 DECEA has been reviewing the capacity declaration for most Brazilian airports, refining the methodology for the determination of the runway system capacity. This has resulted in an increased capacity for many airports, including some co-ordinated ones.[490]

Furthermore, developing technical innovations to improve utilisation of available airport capacity may promote more efficient use of existing airport infrastructure, especially by

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[487] In 2019, when Avianca Brasil (then the fourth largest Brazilian airline) went bankrupt, ANAC temporarily re-defined the co-ordination parameters for slot allocation at São Paulo/Congonhas airport, in which the carrier held the third largest market share. It was decided that instead of a maximum of 5 daily slots, an airline would be considered a new entrant if it held up to 54 daily slots, which represented 10% of the airport's total slots. This aimed to prevent LATAM and GOL (the two largest Brazilian airlines, at the time with 236 and 234 slots, respectively) from receiving the same treatment as Azul (the third largest airline in Brazil but which held only 26 slots at the airport), therefore avoiding an increase in the market share of the two dominant airlines (ANAC's decision No. 109 of 25 July 2019). In 2022, after approving Resolution ANAC No. 682/2022, ANAC re-established the parameters for slot co-ordination at São Paulo/Congonhas airport. The new level for an airline to be considered a new entrant was set at up to 18 daily slots (ANAC's decision No. 533 of 7 June 2022). In the other four Brazilian co-ordinated airports, an airline must not hold more than 6 daily slots to be considered a new entrant (ANAC's decision No. 534, No. 535, No. 536 and No. 537, of 7 June 2022).

[488] DE WIT, Jaap.; BURGHOUWT, Guillaume. Slot allocation and use at hub airports, perspectives for secondary trading. *European Journal of Transport and Infrastructure Research*, v. 8, n. 2, 2008. Available at: https://dare.uva.nl/search?identifier=68121533-2ad5-42d5-bfd8-166f23c3a255. p. 55; OECD. *Roundtable on Airline Mergers and Alliances*. p. 153.

[489] ZOGRAFOS, Konstantinos G.; MADAS, Michael A.; ANDROUTSOPOULOS, Konstantinos N. Increasing airport capacity utilisation through optimum slot scheduling: review of current developments and identification of future needs. *Journal of Scheduling*, v. 20, 2017. Available at: https://link.springer.com/article/10.1007/s10951-016-0496-7. p. 21.

[490] EUROCONTROL; DECEA. *Brazil/Europe Comparison of Operational ANS Performance*. 2021. Available at: https://ansperformance.eu/global/brazil/bra-eur/. pp. 19-20.

reducing the need for policy restrictions that constrain capacity to reduce the adverse impacts of aviation activity (particularly in terms of noise and air pollution). Thus, there may be room for relaxing policy constraints on airport capacity in view of technological advancements enabling production of quieter, more environmentally friendly aircraft. Technological advancements to improve efficiency of airports could also be considered, such as collaborative decision making, co-ordinated arrival departure management, implementation of time-based separation rather than distance-based separation and better airside and landside co-ordination through simulation modelling.[491]

Introducing traffic distribution rules (TDRs) is also suggested as a means to improve the slot allocation mechanism. Banning specific types of aviation (such as general or military) from congested airports may have positive impacts on air connectivity. For example, London/Heathrow airport banned general aviation flights completely and freight-only flights at peak times. Paris/Le Bourget airport serves general aviation and business jets, freeing up some capacity at CDG and Orly for additional scheduled passenger services.[492]

Nevertheless, since segregating traffic may lead to poor efficiency and air connectivity outcomes, if TDRs are introduced, they should be non-discriminatory and easily understandable, with interventions targeted and proportionate, implemented in a transparent manner with independent and impartial overseers. Additionally, if TDRs are introduced to incentivise the use of larger aircraft by airlines, the airport's charging policies imposing higher charges for bigger aircraft should be reviewed.[493]

3.1.3.2 Market-based mechanism for allocating airport slots

Given the pitfalls of the WASG system, several authors and some policy makers have been proposing market-based mechanisms to replace or at least complement the current mechanism. Nevertheless, such proposals are controversial, as they are also likely to result in

[491] EGELANDI, Jagoda; SMALE, Paul. *op. cit*. pp. 20-24.
[492] *Ibid*. pp. 26-27. A similar alternative was suggested by the former SEAE for Brazilian airports (SEAE. *PARECER SEI Nº 20496/2021/ME*). Although Resolution ANAC No. 682/2022 has not expressly introduced such conditions, it provides that specific regulation can be issued to address local shortcomings. Accordingly, when ANAC re-established the parameters for slot co-ordination at São Paulo/Congonhas airport in 2022, it introduced minimum criteria for obtaining slots, involving previous experience and a minimum fleet size or effective market share. This aims at ensuring that only firms that can provide effective competition remain in the market, as well as preventing inefficient use of airport infrastructure – which, for instance, has occurred in the past, where smaller airlines obtained slots to operate low-capacity aircraft (ANAC's decision No. 533 of 7 June 2022).
[493] EGELANDI, Jagoda; SMALE, Paul. *op. cit*. pp. 27, 29.

anti-competitive outcomes. The following sections will discuss the most common market-based alternatives, namely (i) congestion pricing; (ii) slot auctioning; and (iii) slot trading.

a. Congestion pricing

Through congestion pricing, instead of slots, fees would be set on flight operations, varying throughout the day. By charging higher prices during congested periods, airlines would be encouraged to operate flights in less congested period and/or to reduce their overall number of flights.[494]

This system would ensure that air fares reflect the commercial value of the slots they are associated with and therefore could lead to a more efficient use of them. However, the competitive equilibrium of prices only exists when slots are (perfect) substitutes for all airlines. In reality, some combinations of slots are complementary for some carriers, while substitutes for others. Thus, this system may produce two suboptimal results: if the price is set too low, it fails to shift demand between peak and off-peak; if the price is set too high, airlines withdraw from a given airport.[495]

Incentivising flights to spread across the day may also dampen hub connectivity. Further, implementing congestion pricing may be difficult, since the difference between peak and off-peaks prices needs to be very large for airlines to accept the operational inconvenience of using the airport at off-peak times.[496]

b. Slot auctions

Auctioning slots seeks to allocate scarce airport capacity to airlines that value it most or are most willing to pay, which in turn can provide more innovative and competitive services.[497] If properly conceived and conducted, auctions may be able to allocate slots in a way that raises

[494] BALL, Michael O.; BERARDINO, Frank; HANSEN, Mark. *op. cit*. p. 186.
[495] KOCIUBIŃSKI, Jakub. Regulatory challenges of airport slot allocation in the European Union. *Wroclaw Review of Law, Administration & Economics*, v. 3, n. 1, 2013. Available at: https://repozytorium.uni.wroc.pl/dlibra/publication/edition/131254/content. p. 45.
[496] EGELANDI, Jagoda; SMALE, Paul. *op. cit*. p. 29.
[497] *Ibid*. p 27; BICHLER, Martin; CRAMTON, Peter; GRITZMANN, Peter; OCKENFELS, Axel. It is time to auction slots at congested airports. *VoxEU*, 10 January 2021. Available at: https://voxeu.org/article/it-time-auction-slots-congested-airports.

efficiency and incentivises competition between airlines, as this may reduce barriers to entry, increase regulatory stringency and limit the possibility of windfall profits.[498]

At least in theory, slot auctioning would improve overall system performance, including the extent of service options between city pair markets, the daily flight delays and financial considerations for both passengers and airlines.[499] Auctioning slots could also raise funds for developing new infrastructures, where expansion is feasible, therefore reducing scarce airport capacity.[500]

Auctioning slots may completely or partially replace the WASG slot allocation system. Auctions may cover all slots, eliminating the grandfather clause, or just selected ones (e.g. slots from the pool, slots withdrawn from incumbents or newly created slots), keeping the remaining slots under the grandfather clause. Nonetheless, designing smart slot auctions is challenging. Auctions need to be allocatively efficient to maximise the value of the allocation and incentive compatible, giving air carriers the necessary incentives to participate and report their valuation honestly. Auctions must also allow airlines to develop a strategy to schedule take-offs and landings, and must be transparent, understandable and easily implementable.[501-502]

The academic literature notes that auction markets have been successfully used worldwide in similarly challenging environments. In addition, recent advances in economic modelling, computation and algorithms are indicated as factors that could improve the auction design and, as a consequence, allocative efficiency. This is the case, for instance, of the research of the 2020 Nobel Prise recipients in economics, Robert Wilson and Paul Milgrom, focusing on auction theory and design, including inventions of new auction formats.[503]

However, unless slots are regularly reallocated, the same result of the current slot allocation model would be reproduced, since auctioning unrestricted allocated slot ownership would lead to a new *status quo*. Thus, for the system to work and produce a more competitive

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[498] EGELANDI, Jagoda; SMALE, Paul. *op. cit.* p. 27; PERTUISET, Thomas; SANTOS, Georgina. Primary auction of slots at European airports. *Research in Transportation Economics*, v. 45, 2014. Available at: https://www.sciencedirect.com/science/article/pii/S0739885914000304. p. 67.
[499] BALL, Michael O.; BERARDINO, Frank; HANSEN, Mark. *op. cit.* p. 187.
[500] EGELANDI, Jagoda; SMALE, Paul. *op. cit*. p. 27.
[501] PERTUISET, Thomas; SANTOS, Georgina. *op. cit*. p. 67.
[502] Different approaches to designing slot auctions are suggested by the academic literature. For example, a Vickrey-Clarke-Groves auction mechanism could be used, which would result in a division of the set of the auctioned slots across several bidders, maximising the seller's income (PERTUISET, Thomas; SANTOS, Georgina. *op. cit.*).
[503] BICHLER, Martin; CRAMTON, Peter; GRITZMANN, Peter; OCKENFELS, Axel. *op. cit*.

environment, it would be necessary to ensure regular slot reallocation through auctions, ensuring that new or growing airlines would obtain slots at congested airports.[504]

A study used an economic model to investigate the effectiveness of airport slot auctions and indicated that a slot-auction mechanism would be more effective than alternative allocations by a regulator in case of substantial demand uncertainty, improving social welfare. Nevertheless, the paper recongnised that the marginal effect of allocating slots through auctions may decrease quickly. For that reason, the number of slots to be auctioned should be carefully selected, as the acquisition of slots from the current users is likely to cause operational disruption and increase transaction costs.[505]

Studies also highlight many potential drawbacks of slot auctions. The main objection rests on the fact that market power rather than the social value of slots would be reflected in bids in a slot auction. Indeed, an auction is usually determined by bidders' profits, which do not consider consumer welfare – and expected consumer surplus would hardly be established beforehand in any case. Moreover, it is argued that bidders' valuations is determined by the market structure (e.g. the degree of competitiveness of the market) and the auction's design, including factors like the number of available slots, how bids can be made, and incentives to collude.[506]

Furthermore, airlines might manipulate the auction to gain market power, given the significant complementarity between slots in origin and destination. Accordingly, the literature has shown that auctions can behave in problematic ways when they sell several complementarity objects that will subsequently be used by winning bidders to compete against each other in downstream markets, such as rights for electricity and gas transmission, mobile licences and airport slots.[507]

In those cases, valuations made by bidders for the multiple auction objects are interdependent, and allocations to one bidder produce negative externalities for others. Significant conflicts may arise between the auction's many objectives, particularly between

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[504] BICHLER, Martin; CRAMTON, Peter; GRITZMANN, Peter; OCKENFELS, Axel. *op. cit.*; BALL, Michael O.; BERARDINO, Frank; HANSEN, Mark. *op. cit.* p. 192.

[505] SHENG, Dian; LI, Zhi-Chun; XIAO, Yi-bin; FU, Xiaowen. Slot auction in an airport network with demand uncertainty. *Transportation Research*, v. 82, Part E, 2015. Available at: https://www.sciencedirect.com/science/article/pii/S1366554515001507.

[506] AVENALI, Alessandro; D'ALFONSO, Tiziana; LEPORELLI, Claudio; MATTEUCCI, Giorgio; NASTASI, Alberto; REVERBERI, Pierfrancesco. *op. cit.* pp. 32-33; SHENG, Dian; LI, Zhi-Chun; XIAO, Yi-bin; FU, Xiaowen. *op. cit*. p. 82.

[507] JEHIEL, Philippe; MOLDOVANU, Benny; OTTAVIANI, Marco; PROPPER, Carol. An economic perspective on auctions. *Economic Policy*, v. 18, n. 36, 2003. Available at: www.jstor.org/stable/1344658.

revenue maximisation and efficient allocation. Thus, auctioning slots could result in rents to dominant airlines at the expense of passengers.[508]

From a political standpoint, implementing slot auctions may also be challenging. As incumbent airlines holding slots have substantial vested interests against change, they may lobby to prevent auctions from being introduced or at least to require compensation for losing grandfather rights.[509] Moreover, the airline market is also likely to be severely disrupted if slots are withdrawn from incumbents, in particular for airlines' route scheduling and for airports that depend on long-term airline partners for their business – which helps explain why airports are usually against auctioning slots. The commercial values of airlines are also likely to be negatively impacted by such a mechanism.[510]

In practice, there are very few experiences in auctioning slots across the world. For the first time in 2015, China used a market-based mechanism to allocate 50% of newly created slots for domestic flights at Guangzhou Baiyun and Shanghai Pudong airports, while the new slots for international flights continued to be allocated through the traditional model. At Guangzhou Baiyun, nine pairs of slots were auctioned for a three-year period. Although some privately owned airlines participated in the proceeding, the four largest, state-owned Chinese carriers won the bids. At Shanghai Pudong airport, a lottery ("lucky draw plus charge" model) was used for allocating the available slots. Six Chinese airlines, including some small carriers, obtained the slots. Winners at both airports were permitted to transfer, lease and sell the slots throughout the allocation period.[511] While there is no further information on how the Chinese market has evolved afterwards – including whether auctions were used again –, this experience seems to illustrate that slot auctions do not necessarily lead to pro-competitive outcomes.[512]

In 2020, the European Commission approved, within the state aid control regime, a recapitalisation measure granted by Germany to Lufthansa during the Covid-19 pandemic. The European Commission subjected the bailout package to several commitments, including a

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[508] SHENG, Dian; LI, Zhi-Chun; XIAO, Yi-bin; FU, Xiaowen. *op. cit*. p. 82.
[509] BALL, Michael O.; BERARDINO, Frank; HANSEN, Mark. *op. cit*. p. 201.
[510] EGELANDI, Jagoda; SMALE, Paul. *op. cit*. p. 28.
[511] WEN, Wang. Big airlines dominate first airport slot auction. *China Daily*, 31 December 2015. Available at: www.chinadaily.com.cn/business/2015-12/31/content_22877753.htm; BALLANTYNE, Tom. China ignores IATA's reservations about its new slot auctions. *Orient Aviation*, 1st February 2016. Available at: www.orientaviation.com/articles/1703/china-ignores-iata%E2%80%99s-reservations-about-its-new-slot-auctions; CIVIL AVIATION ADMINISTRATION OF CHINE. *Pilot Auctioning of Time Slots of Guangzhou Baiyun International Airport*. 2016. Available at: www.caac.gov.cn/en/XWZX/201601/t20160115_26630.html; CIVIL AVIATION ADMINISTRATION OF CHINE. *Results of Pilot Lottery for Market-based Allocation of Time Slots at Pudong Airport Come Out*. 2016. Available at: www.caac.gov.cn/en/XWZX/201602/t20160218_28439.html.
[512] OECD. *OECD Competition Assessment Reviews: Brazil.* p. 107.

divestiture of up to 24 slots per day at Frankfurt and Munich airports. The structural measure aimed to enable a viable entry or expansion of activities by competing airlines at these airports to the benefit of consumers and effective competition. Therefore, Lufthansa committed to sell slots via a competitive bidding process, conducted by a trustee. Although limited, this example shows that auctioning slots can be a useful way of promoting more competition at co-ordinated airports.[513]

In other jurisdictions, attempts to auction slots were carried out, but ultimately proved unsuccessful, demonstrating the difficulty of introducing this market-based mechanism in practice.

For instance, in 2008 the FAA sought to auction 10% of the slots at New York's three major airports (JFK, LaGuardia and Newark, at the time all Level 3 airports). Strong opposition was expressed against this proposal, notably by IATA, incumbent airlines and the airports' operator, who claimed that the auction would have a negative impact on airline services and airport operations. The proposition was challenged before the US Court of Appeals for the District of Columbia Circuit and ultimately abandoned.[514]

Another example concerns Mexico, where the 2010 Airports Law established that airport slots should be auctioned in two circumstances: (i) when slots became available due to non-use or under-use and (ii) every three years, if the airport remained congested. In the latter case, the airport manager was required to remove 10% of slots from each air carrier and auction them. However, in practice, slots were never auctioned.[515]

In 2017, COFECE conducted a market investigation on slot allocation at the Mexico City International Airport, concluding that landing and take-off services, as well as the use and control of platforms by airlines at that airport were an essential facility. COFECE also indicated that the rules to access the airport produced systemic impacts on the daily scheduling of slots, such as cancelations and delays of flights, which affected competition and led to high market

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[513] EUROPEAN COMMISSION. *State Aid SA.57153 (2020/N) – Germany – COVID-19 - Aid to Lufthansa*. 2020. Available at: https://ec.europa.eu/competition/state_aid/cases1/202044/286587_2201652_220_2.pdf. Nevertheless, this decision was annulled by the General Court of the European Union in May 2023. According to the General Court, the Commission committed several errors, notably by assuming that Lufthansa could not secure financing for all its needs on the markets, by not establishing a mechanism to encourage Lufthansa to promptly repurchase Germany's shares, by rejecting that Lufthansa had substantial market power at specific airports, and by approving several commitments that do not guarantee the preservation of effective competition on the market (judgment of the General Court of 10 May 2023 in Ryanair v. European Commission, Joined Cases T-34/21 – Ryanair v. European Commission and T-87/21 – Condor Flugdienst v. Commission). The annulment decision of the General Court is currently under appeal at the European Union Court of Justice.

[514] AVENALI, Alessandro; D'ALFONSO, Tiziana; LEPORELLI, Claudio; MATTEUCCI, Giorgio; NASTASI, Alberto; REVERBERI, Pierfrancesco. *op. cit*. p. 28; SHENG, Dian; LI, Zhi-Chun; XIAO, Yi-bin; FU, Xiaowen. *op. cit*. p. 81.

[515] OECD. *Review of the Regulation of Freight Transport in Mexico.* p. 115.

concentration and prices. Among other measures, COFECE determined Mexico City International Airport to auction slots following the Airports Law.[516] Nevertheless, few months after COFECE's decision, the regulatory framework on slot allocation was amended, and the provisions determining slot auctioning were revoked.[517] Later on, the Mexican Courts ruled that COFECE's powers to regulate access to essential facilities were limited in the presence of a sectorial regulator.[518]

c. Secondary slot trading

Secondary slot trading refers to the commercialisation of slots after the primary allocation (which could follow the traditional WASG model or alternative mechanisms, such as auctions). In other words, slot trading can be implemented regardless of the primary allocation, meaning that it can be an additional feature to the WASG system. It is argued that slot trading could improve slot allocation at congested airports by exerting market pressure to alleviate inefficient slot use and increase economic efficiency, as airlines valuing slots the most would be able to purchase them even if the slots were not obtained through the primary allocation.[519]

This would incentivise long-haul over short-haul services and larger over smaller aircraft, expanding the average number of passengers per slot, which according to the academic literature reflects a more efficient use of slots. For instance, this outcome was observed at London/Heathrow airport, where commercial transfer of slots has led to an increase of around 80% in the average aircraft size, from 139 to 250 seats per slot. At the same airport, airlines operating short-haul routes have tended to sell slots either to the dominant airline or to other carriers operating long-haul routes.[520]

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[516] COFECE. *DATOS relevantes de la Resolución emitida en el expediente IEBC-001-2015 por el Pleno de la Comisión Federal de Competencia Económica*. 2017. Available at: https://dof.gob.mx/nota_detalle.php?codigo=5490456&fecha=17/07/2017.

[517] COFECE. *COFECE Filed a Constitutional Dispute against the Decree to Reform the Regulations of the Airports Law and the General Principles to Allocate Take-off and Landing Slots at Saturated Airports*. 2017. Available at: https://www.cofece.mx/wp-content/uploads/2018/02/COFECE-054-2017.pdf.

[518] PRIETO, Alejandra Palacios. Are market investigations a suitable tool for the analysis of digital markets? *Concurrences*, n. 1-2021, Art. N° 98391, 2021. Available at: https://www.concurrences.com/en/review/issues/no-1-2021/foreword/98391. p. 2.

[519] HAYLEN, Andre; BUTCHER, Louise. *op. cit*. p. 18; EGELANDI, Jagoda; SMALE, Paul. *op. cit*. p. 28.

[520] DE WIT, Jaap.; BURGHOUWT, Guillaume. *op. cit.* p. 154; MOTT MACDONALD. *Study on the Impact of the Introduction of Secondary Trading at Community Airports, Volume I - Report*. Croydon: Mott MacDonald, 2006. Available at: https://www.euaca.org/up/files/DocsEUROPE/EU_REGULATION_95_93_AS_AMENDED_Slot_Regulation/2006_slots_final_report.pdf_211108_054651.pdf. p. 1-11.

Moreover, implementing a secondary market for slot trading allows airlines to consider the opportunity cost of slots (including the cost of keeping slots in low-value uses), which could facilitate new entry into the market and the expansion of smaller airlines – therefore increasing slot mobility.[521]

Authorising slot trading is also likely to prevent mergers and acquisitions with the unique objective of obtaining slots from a third airline, without any further efficiency. Indeed, as previously described, merger and acquisitions are a common strategy to bypass the prohibition of trading slots in jurisdictions where the secondary market is not allowed, which was the case of Brazil until recently.

Furthermore, since a secondary-slot market would allow airlines to include slots valuations as assets on their financial statements, carriers' equity values would be likely to increase. This could also permit the collateralisation of slots, facilitating airlines' access to debt markets, which is particularly relevant to airlines facing financial difficulties.[522] Nevertheless, such an outcome might ultimately benefit incumbent airlines, which already control most slots, further increasing their market power.

In fact, there are many concerns whether slot trading would indeed achieve a more efficient and competitive distribution of slots. Some indicate that the secondary slot market is unlikely to increase contestability, since airlines may refuse to cede relevant slots to rivals, even if there is a direct financial cost of keeping slots in low-value uses. Dominant airlines could also engage in predatory bidding for slots to prevent new entry and to increase their dominance at co-ordinated airports.[523-524]

Moreover, even if airlines do not currently need all their slots, they tend to keep them, because holding slots provides air carriers with flexibility for future network developments. Airlines may also be discouraged to sell slots in light of uncertainty on the stability of the slot-

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[521] GUIOMARD, Cathal. *op. cit.* p. 132.
[522] MOTT MACDONALD. *op. cit.*
[523] HAYLEN, Andre; BUTCHER, Louise. *op. cit*. p. 18; STARKIE, David. The economics of secondary markets for airport slots. In BOYFIELD, Keith (ed.). *A Market in Airport Slots*. London: The Institute of Economic Affairs, 2003. p. 59; EGELANDI, Jagoda; SMALE, Paul. *op. cit*. p. 28.
[524] Nonetheless, according to the UK Office of Fair Trading, consolidation would only occur when the airline already has a strong position before the secondary trading. In other words, consolidation would not be the result from slot trading itself (OFT. *Competition issues associated with the trading of airport slots*: A paper prepared for DG TREN by the UK Office of Fair Trading and Civil Aviation Authority. Norwich: The Stationery Office, 2005. Available at: https://docplayer.net/1440660-Competition-issues-associated-with-the-trading-of-airport-slots.html).

management system. Additionally, due to information asymmetry and lack of transparency, potential buyers and sellers may not meet each other.[525]

Therefore, although slot trading can be a useful tool to complement the WASG model, notably by increasing efficiency and competition, conditions should be imposed to guarantee the well-functioning of the mechanism, preventing abusive behaviours that could circumvent its rationale.

For example, establishing a slot cap for each airline at a given co-ordinated airport could ensure that slot trading would not be a mechanism to increase market power of dominant carriers. In practice, this would restrict airlines from buying slots at a given congested airport if they already held a large number of slots at that airport.[526] Nonetheless, this restrictive measure might ultimately prevent a more efficient allocation of slots, which is the main goal of the secondary slot trading in the first place. Other remedial measures could be the use of auctions, congestion or peak-load pricing to sell slots, as well as trading through a clearing house.[527] Prohibiting or limiting new entrants from selling their slots to incumbent airlines could be another useful condition to foster competition.

As previously noted, the WASG system does not prohibit the implementation of slot trading, although it recognises the need to introduce conditions to prevent abuses.[528] In this regard, some jurisdictions have implemented secondary slot trading, which has nevertheless resulted in mixed outcomes.

For example, in the United States, secondary slot trading led to a more fluid and dynamic market, as co-ordinated airports' capacity was used more efficiently, increasing slot mobility. Additionally, slot trading transformed slots into valuable assets, which can be particularly important during economic downturns. However, trading slots also resulted in consolidation and market concentration, in particular at Chicago/O'Hare airport, the hub of United Airlines and American Airlines. It is argued that slots have not been used efficiently at that airport, as they have served the operation of regional jets in the two carriers' hub-and-spoke systems, rather than being employed for long-haul flights with larger aircrafts. In any case, given the airport's economic orientation to be a national hub for two US major airlines, Chicago/O'Hare continued to be used to reginal flights with smaller aircrafts, enabling United Airlines and American Airlines to benefit from network economies and enhancing the efficient use of the

[525] AVENALI, Alessandro; D'ALFONSO, Tiziana; LEPORELLI, Claudio; MATTEUCCI, Giorgio; NASTASI, Alberto; REVERBERI, Pierfrancesco. *op. cit.* p. 33.
[526] SAC. *Nota Técnica nº 8/2020/DPR/SAC*.
[527] OECD. *Airline Competition.* p. 17.
[528] ACI; IATA; WWACG. *op. cit.* pp. 39-40.

airport. [529] This may indicate that the airport's characteristics should also be considered when analysing the outcomes of slot usage, suggesting that using slots for short-haul flights with smaller aircrafts may not necessarily mean less efficiency. Moreover, it is questioned whether concentration at congested airports was linked to secondary slot trading, arguing that other elements were more relevant, notably the consolidation in the US airline industry.[530]

In the European Union, slot trading is not expressly banned by EU legislation, in particular Council Regulation (EEC) No. 95/93 of 18 January 1993 on common rules for the allocation of slots at Community airports. Financial compensation for slot trading used to be considered illegal until 1999, when UK courts decided that it was legal and compliant with Regulation No. 95/93.[531] A clarification of Regulation No. 95/93 was issued by the European Commission in 2008, affirming that the UK model was in line with EU law.[532]

While a market of secondary slot trading and monetary exchange has emerged, especially at London/Heathrow and London/Gatwick airports (until recently within the EU), it seems that this has not occurred in other EU airports, although this conclusion may be – at least in part – due to lack of transparency in slot trading.[533]

According to the CAA, the secondary market for slot trading enables air carriers to increase their presence at co-ordinated airports because those airports are running at full capacity and there are only a very limited number of slots from the pool that are available for allocation. At London/Heathrow, for example, while the pool had only 22 slots to be allocated in 2016, 224 slots were traded in the secondary market. In fact, slot trading has substantially increased over the years at that airport, while conversely the number of pool slots has significantly declined.[534]

As for the prices paid by air carriers in the secondary market, they vary considerably, by time and day. For instance, in 2012 slot-pair prices at London Heathrow were reported to be around GBP 15 million in the early morning, GBP 10 million at midday and GBP 5 million in

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[529] On the other hand, New York/LaGuardia experienced an increase in the aircraft size following the introduction of slot trading. This is explained by the airport's economic orientation towards a domestic airport, serving many US airlines (DE WIT, Jaap; BURGHOUWT, Guillaume. *The impact of secondary slot trading at Amsterdam Airport Schiphol*, SEO Economic Research. Report 957, 2007. Available at: www.researchgate.net/publication/254896479_The_impact_of_secondary_slot_trading_at_Amsterdam_Airport_Schiphol. pp. 52-53).

[530] DE WIT, Jaap; BURGHOUWT, Guillaume. *The impact of secondary slot trading at Amsterdam Airport Schiphol.* pp. 48, 52-53.

[531] GUIOMARD, Cathal. *op. cit.* p. 130.

[532] PERTUISET, Thomas; SANTOS, Georgina. *op. cit*. p. 67.

[533] STEER DAVIES GLEAVE. *European Commission Impact assessment of revisions to Regulation 95/93.* pp. 84-85.

[534] HAYLEN, Andre; BUTCHER, Louise. *op. cit*. pp. 6-7.

the evening. In addition, airlines have already paid a record value of USD 75 million for a pair of slots at London Heathrow. However, the accuracy of this information may be limited since many transactions are not publicly reported.[535]

Evidence from London/Heathrow airport demonstrates that the secondary slot trading market allowed dominant airlines (such as British Airways) to raise their market share at the airport. Nevertheless, the secondary market also helped strong second-tier airlines (such as Virgin Atlantic) to emerge and compete more effectively with dominant air carriers. Slot trading also led to a more efficient use of airport capacity, as traded slots were employed for flights with larger aircrafts, increasing the total number of passengers carried.[536]

The European Commission has been studying the effects of the secondary slot trading market for years, with the aim of implementing changes in the EU slot-allocation regulation. Such studies have indicated substantial gains from the introduction of market-based mechanisms for slot allocation.

In 2006, for instance, a study examined eight co-ordinated airports within the EU and concluded that slot trading would increase consumer welfare by up to EUR 31 billion annually and produced welfare by up to EUR 1 billion annually – at 2006 rates. The mechanism would also improve finances of major airports by around 7% and produce relevant benefits for economies around such airports. Nevertheless, the study estimated that dominant airlines would raise the share of slots from 47% to 49%, which was likely to increase competition between major European hubs. In addition, long-haul flights would be more competitive than intra-EU flights. A slight increase in diversity of users at airports was expected on the different route types, while effects on routes to distant locations were anticipated to be negative, unless they were protected since they could be forced out of co-ordinated airports and into secondary airports. The study suggested actions to mitigate some of these anti-competitive outcomes, such as prohibiting restrictive covenants in slot-exchange contracts that forbid using slots in competition with the seller; active oversight of the slot market by competition authorities; and implementing "blind" slot trading, preventing participants from knowing from whom they are purchasing available slots.[537]

Another study suggested benefits from market-based mechanisms in general, including secondary slot trading, higher runway charges, slot auctions or a combination of these.

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[535] *Ibid*. p. 7.
[536] AVENALI, Alessandro; D'ALFONSO, Tiziana; LEPORELLI, Claudio; MATTEUCCI, Giorgio; NASTASI, Alberto; REVERBERI, Pierfrancesco. *op. cit.* p. 33; DE WIT, Jaap; BURGHOUWT, Guillaume. *The impact of secondary slot trading at Amsterdam Airport Schiphol.* pp. 51-52.
[537] MOTT MACDONALD. *op. cit.*

Accordingly, these mechanisms would lead to a more efficient use of slots and an increase in passenger number at congested airports of about 7% (i.e. around 52 million additional passengers per year).[538]

Moreover, the Impact Assessment accompanying the Proposal for a Regulation of the European Parliament and of the Council on common rules for the allocation of slots at European Union airports (Recast) estimated that slot trading would increase 1.6% (i.e. 23.8 million) the number of passengers carried in the EU, with a net economic benefit of EUR 5.3 billion EUR and 62 000 additional full-time jobs.[539]

The legislative proposal to review Regulation No. 95/93 was published in December 2011, aiming to ensure optimal slot allocation and use of slots in congested airports, as well as to increase competition between airlines. In October 2012, the Council adopted its general approach and in December 2012 the European Parliament adopted its first reading position. At present, the proposal awaits the Council's first reading position and remains blocked there. A new proposal on the Revision of Regulation No. 95/93 was expected to be published in 2023 under the priority "An Economy that Works for People", according to the 2023 Commission work programme.[540]

Until 2022, the Brazilian slot regulation prohibited slot trading. However, Resolution ANAC No. 682/2022 permitted airlines to transfer slots to other airlines, including for compensation, subject to ANAC approval. Only slots operated for three equivalent seasons can be traded. In addition, if an airline transfers its slots, in the following three equivalent seasons it can only obtain new slots from the slot pool if no other airlines express interest in obtaining them. These restrictions intend to prevent misuse of slot trading, notably the creation of a speculative market. While slot trading has not yet been used in Brazil, it is expected that this will occur shortly.[541]

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[538] NERA. *Study to Assess the Effects of Different Slot Allocation Schemes, A Report for the European Commission*, DG TREN. 2004. Available at: www.nera.com/content/dam/nera/publications/archive1/PUB_SlotAllocationSchemes_NPL.pdf.

[539] EUROPEAN COMMISSION. *Commission Staff Working Paper - Impact Assessment Accompanying the document Proposal for a Regulation of the European Parliament and of the Council on common rules for the allocation of slots at European Union airports (Recast)*. SEC(2011) 1443 final. Brussels, 1 December 2011. Available at: https://ec.europa.eu/transparency/documents-register/detail?ref=COM(2011)827&lang=en.

[540] EUROPEAN PARLIAMENT. Allocation of Slots at EU Airports: Common Rules - Recast. *European Parliament*, 15 December 2023. Available at: https://www.europarl.europa.eu/legislative-train/theme-transport-and-tourism-tran/file-allocation-of-slots-at-eu-airports-common-rules-recast.

[541] FAVARO, Cristian. Mercado Secundário deve acirrar disputa por slots da MAP. *Valor*, 25 January 2023. Available at: https://valor.globo.com/empresas/noticia/2023/01/25/mercado-secundario-deve-acirrar-disputa-por-slots-da-map.ghtml.

3.2 Ground handling services

Ground handling services are an important component of aeronautical activities and comprise the services required for an aircraft's arrival at and departure from an airport other than air traffic services. Ground handling services are usually classified into ramp handling (handling services on the apron or ramp, such as loading and unloading of aircraft, transport of passengers and baggage between aircraft and terminal buildings, and aircraft fuelling) and traffic handling (handling services provided within the passenger or cargo buildings, such as ticketing, check-in, boarding supervision, and cargo and mail handling). There are four main methods for providing ground handling services: (i) directly by the airport operator; (ii) by the airline itself (so-called self-handling); (iii) by another airline; and (iv) by third-party, independent ground handling companies which are not airlines (sometimes referred to as fixed-base operators). These are non-exclusionary methods, and sometimes more than one type co-exists at a given airport. Nevertheless, 75% of ground handling services worldwide are provided by third-party handlers.[542]

The provision of ground handling services has raised relevant competition concerns, in particular as regards market access. In the past, this sector was subject to high barriers to entry and the services were provided by local based airlines or airport operators. However, in the last decades the market has been liberalised in many jurisdictions, with the aim of fostering competition and providing airlines with a greater choice of suppliers, improving efficiency, reducing operating costs and increasing quality of service.[543]

The experience of the European Union is a good illustration of this discussion and served as an inspiration to the Brazilian framework. Both are explored in the following sections.

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[542] ICAO. *Annex 6 to the Convention on International Civil Aviation, Operation of Aircraft, Part I – International Commercial Air Transport – Aeroplanes;* ICAO. *Manual on Ground Handling, Doc 10121*; NEUFVILLE, Richard de; ODONI, Amedeo; BELOBABA, Peter; REYNOLDS, Tom. *op. cit.* pp. 226-227, 240-241.

[543] NEUFVILLE, Richard de; ODONI, Amedeo; BELOBABA, Peter; REYNOLDS, Tom. *op. cit.* pp. 242; MEERSMAN, Hilde; PAUWELS, Tom; STRUYF, Els; VOORDE, Eddy Van de; VANELSLANDER, Thierry. Ground handling in a changing market. The case of Brussels Airport. Re*search in Transportation Business & Management*, v. 1, n. 1, 2011. Available at: https://www.sciencedirect.com/science/article/pii/S2210539511000101. p. 128; SCHMIDBERGER, Stephan; BALS, Lydia; HARTMANN, Evi; JAHNS, Christopher. Ground handling services at European hub airports: Development of a performance measurement system for benchmarking. *International Journal of Production Economics*, v. 117, n. 1, 2009. Available at: https://www.sciencedirect.com/science/article/pii/S0925527308003174. pp. 104-105.

3.2.1 Opening-up of ground handling services in Europe

Until the mid-1990s, the provision of ground handling services was a monopoly in most EU Member States, either held by public airport operators (e.g. in Germany) or by national flag carriers (e.g. Iberia in Spain). In 1996, the European Union issued Council Directive 96/67/EC in order to liberalise the ground handling market at EU airports on the assumption that competition and market dynamics would enhance quality levels and lower prices.[544]

However, the industry, particularly incumbent ground handling providers (i.e. airport operators and national flag carriers), argued that the market had several constraints, for instance related to capacity (available space), security, safety, technical feasibility (e.g. to allow shared use of facilities) and investment costs (typically necessary to reduce other constraints). These restrictions would vary according to the airport and would limit the scope for opening up ground handling services to competition, at least at some airports. The European Union took into account these concerns, and Council Directive 96/67/EC adopted a differentiated approach to the liberalisation in light of the type of the ground handling service and the size of the airport.[545]

As a general principle, the Directive ensures the freedom of access to the market, for both third-party handlers and self-handling airlines. Nonetheless, the Directive allows Member States to limit the number of providers and even introduce exemptions for some categories of ground handling services at airports with objective practical constraints to liberalisation.[546]

In fact, the full liberalisation applies only to services with some sort of interaction with users or subject to minor restrictions of cost, safety, security, available capacity and space. These include ground handling administration and supervision, flight operations and crew administration, and passenger handling. Other services (e.g. ramp, baggage, fuel and oil, as well

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[544] FUHR, Johannes. Liberalisation of the European Ramp-handling Market: A Transaction Cost Assessment. *Journal of Transport Economics and Policy*, v. 43, Part 1, 2009. Available at: https://www.jstor.org/stable/20466770. p. 106; MEERSMAN, Hilde; PAUWELS, Tom; STRUYF, Els; VOORDE, Eddy Van de; VANELSLANDER, Thierry. *op. cit.* p. 128; OECD. C*ompetition Enforcement and Regulatory Alternatives.* p. 25; SOAMES, Trevor. Ground handling liberalization. *Journal of Air Transport Management*, v. 3, n. 2, 1997. Available at: https://www.sciencedirect.com/science/article/pii/S0969699797000082. p. 85; BURGHOUWT, Guillaume; POORT, Joost; RITSEMA, Hendriena. Lessons learnt from the market for air freight ground handling at Amsterdam Airport Schiphol. *Journal of Air Transport Management*, v. 41, 2014. Available at: https://www.sciencedirect.com/science/article/pii/S0969699714000908. p. 56.

[545] SOAMES, Trevor. *op. cit*. p. 85.

[546] CAA. *Access to the ground handling market at UK airports: a review of the CAA's approach*. Request for information, CAP 1409. 2016. Available at: https://publicapps.caa.co.uk/docs/33/CAP%201409%20MAY16.pdf. p. 11; SOAMES, Trevor. *op. cit.* p. 85. The Directive also provided for a gradual opening-up of the ground handling market until the end of 2002, in light of the size of the airport.

as freight and mail handling) are only partially liberalised, with a minimum number of suppliers (i.e. two) being able to enter the market.[547]

The most relevant change introduced by the Directive is the opening-up of the market to third-party ground handling providers, since self-handling is seldom considered an economically viable alternative for an airline. To ensure that air carriers have greater choice of suppliers it was necessary to allow and encourage new third-party ground handlers to enter the market.[548] However, as mentioned above, the Directive does not fully liberalise ramp, baggage, fuel and oil, as well as freight and mail handling services. Accordingly, it authorises Member States to restrict, without further justification, the provision of such services by two players for each category of activity. In the latter case, at least one of the providers must be fully independent both from the airport operator and the airlines with more than 25% of the traffic (either passenger or freight) at the airport.[549]

The Directive also opens up the market for self-handling services.[550] Similarly to third-party ground handling, the liberalisation of self-handling of ramp, baggage, fuel and oil, as well as freight and mail handling services is limited. Member States can restrict the number of airlines that are entitled to self-handle these services without the need for justification, but at least two airlines must hold this right. In such a case, the two airlines with the right to self-handle must be chosen on the basis of relevant, objective, transparent and non-discriminatory criteria.[551]

Furthermore, the Directive provides for an exemption procedure through which Member States can further restrict the number of third-party suppliers for ramp, baggage, fuel and oil, and/or freight and mail handling services, therefore reserving to one supplier (monopoly) one

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[547] SOAMES, Trevor. *op. cit*. p. 85.

[548] According to Articles 1(1)(c) and 6 of the Directive, Member States were required to ensure free access for third-party ground handlers by 1 January 1999 for all EU airports with annual traffic greater than (i) 3 million passenger movements or 75 thousand tonnes of freight or (ii) 2 million passenger movements or 50 thousand tonnes of freight during the six-month period prior to 1 April or 1 October (summer or winter season, respectively) of the preceding year. Airports with annual traffic greater than 2 million passenger movements or 50 thousand tonnes of freight were required to open the ground handling market by 1 January 2001, while airports not achieving these thresholds were not affected by the Directive as regards third-party ground handling providers, as per Article 1(2).

[549] Article 6 of Council Directive 96/67/EC; SOAMES, Trevor. *op. cit*. p. 86; STEER DAVIES GLEAVE. *Study on airport ownership and management and the ground handling market in selected non-EU countries.* p. 34.

[550] According to Article 1(1)(a) of the Directive, Member States were required to ensure that airlines can self-handle at any EU airport regardless of its volume of traffic by 1 January 1998. However, the liberalisation of self-handling of ramp, baggage, fuel and oil, and freight and mail handling services was only imposed on airports with annual traffic greater than 1 million passenger movements or 25 thousand tonnes of freight, as per Article 1(1)(b) of the Directive. The liberalisation of self-handling was implemented one year earlier than the liberalisation of third-party ground handling, as the EU understood that the latter would produce a greater impact on the existing providers and therefore a longer transition period was deemed necessary (SOAMES, Trevor. *op. cit*. p. 86-87).

[551] Article 7 of Council Directive 96/67/EC.

or more categories of services. Likewise, Member States can prohibit self-handling of ramp, baggage, fuel and oil, and/or freight and mail handling services or can restrict it to a single airline. It is also possible to establish restrictions on the number of third-party suppliers for the other segments of the ground handling market, but there should be at least two providers, one of which being fully independent both from the airport operator and the airlines with more than 25% of the traffic (either passenger or freight) at the airport. Additionally, Member States can reserve self-handling of these other segments of the ground handling market to no fewer than two airlines, as long as they are selected based on relevant, objective, transparent and non-discriminatory criteria.[552]

For all cases of exemptions, Member States must prove that exceptional circumstances at a given airport justify the restrictive measure. This occurs where, at a given airport, specific constraints related to available space or capacity, arising in particular from congestion and the rate of use at relevant facilities, make it impossible to open up the market for third-party handlers or to implement self-handling. Member States must also develop a plan with appropriate measures to be implemented in order to overcome the constraints. The European Commission needs to authorise the restrictions adopted by Member States, after conducting a public consultation. Exemptions should not exceed three years, except for those reserving to a single third-party supplier the provision of ramp, baggage, fuel and oil, and/or freight and mail handling services, which should not exceed two years.[553]

However, establishing how many ground handling service providers should be allowed to operate at a given airport is not straightforward. There are several elements that must be considered, including the level of demand for ground handling services, the cost of providing such services in a specific setting and the existence of economies of scale and scope in ground handling at the airport (e.g. due to substantial indivisible fixed costs).[554]

If the number of third-party ground handlers is limited for any categories of ground handling services, the suppliers must be selected based on relevant, objective, transparent and non-discriminatory criteria. The airport operator must open an invitation to tender, to which

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[552] Article 9(1) of Council Directive 96/67/EC.

[553] Article 9(2) to (6) of Council Directive 96/67/EC; SOAMES, Trevor. *op. cit*. pp. 87-88.

[554] MEERSMAN, Hilde; PAUWELS, Tom; STRUYF, Els; VOORDE, Eddy Van de; VANELSLANDER, Thierry. *op. cit.* p. 129. For instance, Neufville et al. suggest that a volume between 4 and 5 million passengers per year would be necessary for a ground handler providing a full range of services to have a commercially viable operation (NEUFVILLE, Richard de; ODONI, Amedeo; BELOBABA, Peter; REYNOLDS, Tom. *op. cit.* pp. 242). Meersman et al. developed a methodology to assess the ideal number of ground handlers at an airport. They also applied the methodology to Brussels airport, concluding that there was no evidence justifying the restriction of the number of market players in the ground handling market at that airport (MEERSMAN, Hilde; PAUWELS, Tom; STRUYF, Els; VOORDE, Eddy Van de; VANELSLANDER, Thierry. *op. cit.* p. 128).

any interested ground handler can reply. Nonetheless, when the airport operator provides similar ground handling services, has direct or indirect control over any firm providing such services, or has involvement in any such firm, the selection procedure should be carried out by a competent authority of the Member State which is independent of the airport operator, since the latter would likely have conflicts of interest. In this case, the airport operator (or its parent companies, subsidiaries and related companies) automatically qualifies as one of the handlers and is not required to participate of the selection procedure. This means that airport operators are given a significant advantage over their competitors,[555] since the latter need to participate in a competitive tender to ensure the right to provide their services at the airport.[556]

When the number of suppliers of ground handling services is limited, handlers should be selected for a maximum period of seven years, in order to ensure competition for the market.[557] Nonetheless, this period is considered too short to guarantee fully amortisation and recovery of the cost of capital expenditure, especially vis-à-vis airport operators, which are not subject to any time limitation. This is indicated as a major drawback of the process of liberalising the ground handling market, resulting in underinvestment by new entrants and inferior economic performance, which would not be able to offer effective competition to incumbent handlers.[558]

The Directive also establishes that Member States must guarantee that ground handlers and airlines wishing to self-handle have access to the airport facilities necessary to conduct their operations. Any conditions imposed on entry (e.g. fees) must be relevant, objective, transparent and non-discriminatory. In addition, the space available for ground handling operations at a given airport must be split among all suppliers, including new entrants, to ensure effective and fair competition. This aims at preventing the use of grandfathering clauses, requiring that space made available to incumbents is adjusted to guarantee new entry.[559] Nevertheless, the implementation of this requirement may be challenging, for example in light of existing property agreements with incumbents. Ultimately, this may result in new entrants being allocated the worst facilities, creating a cost disadvantage and reducing their competitiveness.[560]

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[555] Including national airlines that at the time had a monopoly in the provision of ground handling services at some airports.
[556] Article 11 of Council Directive 96/67/EC; SOAMES, Trevor. *op. cit.* pp. 87, 89.
[557] Article 11(1)(d) of Council Directive 96/67/EC; FUHR, Johannes. *op. cit.* p. 113.
[558] SOAMES, Trevor. *op. cit*. p. 89; FUHR, Johannes. *op. cit.* pp. 113-114.
[559] SOAMES, Trevor. *op. cit*. pp. 88, 90.
[560] CASTRO, Pedro. EU airport ground handling directive or when discretion interferes with public duty: A proposal on how to save Portugal's transposition from discretion. *Case Studies on Transport Policy*, v. 10, n. 3, 2022. Available at: https://www.sciencedirect.com/science/article/pii/S2213624X22001110. pp. 1476-1477.

Indeed, ground handlers need space for staff, facilities and equipment storage. With the opening-up of the market, space allocation became a competitive advantage, since better allocations (e.g. closer to the terminal building or the apron) influence services' efficiency. For many airlines, the facility allocation impacts their commercial choice for a supplier, as this affects the carriers' turnaround times and on-time performance. In this regard, it is said that space is to ground handlers what slots represent to airlines at co-ordinated airports. [561]

Furthermore, the Directive establishes that Member States may reserve for the airport operator or another entity the management of the centralised infrastructures used for the supply of ground handling services whose complexity, cost or environmental impact prevents their division or duplication (e.g. de-icing, water purification and fuel-distribution systems). In these cases, any third-party handler or self-handling airlines must use these infrastructures. Additionally, the management of these infrastructures must be transparent, objective and non-discriminatory, and ground handling suppliers should be ensured access to centralised infrastructures accordingly.[562]

In many EU airports, the provision of several ground handling services has been declared as centralised infrastructures, although the number and nature of these facilities vary among airports. Examples of centralised infrastructures include baggage handling systems, passenger boarding bridges, fixed power installations, fuel and oil stations, check-in desks, bus transportation on the airside and PRM (passengers with reduced mobility) services.[563]

Unlike the instances in which the number of third-party handlers or self-handling airlines is limited, requiring the operation of certain ground handling services through centralised infrastructures does not necessarily impact competition on the ground handling market, provided that all handlers have access to these infrastructures on reasonable and non-discriminatory terms (including as regards fees charged to users).[564]

In practice, however, centralised infrastructures may raise competition concerns, especially regarding the use of such facilities.[565] For example, it is argued that the costs for using centralised infrastructures are high and not always compliant with transparent and non-

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[561] CASTRO, Pedro. *op. cit.* p. 1476.
[562] Article 8 of Council Directive 96/67/EC; CAA. *Access to the ground handling market at UK airports: a review of the CAA's approach.* p. 49.
[563] AIRPORT RESEARCH CENTER. *Study on the Impact of Directive 96/67/EC on Ground Handling Services 1996-2007 – Final Report*. Aachen: Airport Research Center, 2009. Available at: https://transport.ec.europa.eu/system/files/2016-09/2009_02_ground_handling.pdf. pp. 112-116.
[564] Article 8 of Council Directive 96/67/EC; CAA. *Access to the ground handling market at UK airports: a review of the CAA's approach.* p. 49.
[565] MEERSMAN, Hilde; PAUWELS, Tom; STRUYF, Els; VOORDE, Eddy Van de; VANELSLANDER, Thierry. *op. cit.* p. 129.

discriminatory conditions. This is despite the insufficient quality of the facilities coupled with capacity and space constraints, resulting in congested storage areas and lower quality of ground handling services.[566] Airlines are also concerned that they may end up paying twice for infrastructure through centralised infrastructure fees and airport landing charges. Moreover, the dual role of airport operators, serving as both infrastructure providers and ground handlers, may give rise to conflicts of interest, potentially leading to cross-subsidisation and/or discrimination against their competitors.[567]

Although Council Directive 96/67/EC has overall contributed to the liberalisation of ground handling markets in the EU, it was implemented in different ways by different Member States. On the one hand, some Member States have fully liberalised the access to ground handling markets, with every ground handler being allowed to provide its services at an airport without the need to participate in a tender procedure or to be subject to a limited term licence. On the other hand, other Member States have imposed limitations on all or certain categories of ground handling services (i.e. ramp, baggage, fuel and oil, and freight and mail handling services), and therefore a tender is required to select providers, which are granted access for a period of seven years. Other Member States have opened up access only at some airports. In any case, according to an assessment carried out in 2009, the number of third-party handlers and self-handling airlines has risen, especially at airports where the airport operator held a monopoly previous to the introduction of the Directive. The number of ground handlers has increased particularly in ramp, baggage and freight and mail handling services, whilst there has been little change in the number of fuel and oil handlers. Prices of ground handling services have also reduced after the implementation of the Directive and increased competition, in particular at airports with a former monopoly in the provision of ground handling services.[568]

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[566] For instance, the provision of centralised infrastructures, such as the baggage handling system, is indicated as one of the main drivers of the massive disruptions experienced at European airports during Summer 2022 (PA CONSULTING. *Final Report – Support Study for the Department for Transport's Review of UK Ground Handling*. London: PA Consulting, 2022. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1140098/study-for-dft-review-uk-ground-handling.pdf. p 69; EUROCONTROL. *CODA Digest - All-Causes Delays to Air Transport in Europe Annual 2022*. Brussels: Eurocontrol, 2023. Available at: https://www.eurocontrol.int/publication/all-causes-delays-air-transport-europe-annual-2022. p. 4).

[567] AIRPORT RESEARCH CENTER. *op. cit.* pp. 116-118; STEER DAVIES GLEAVE. *Possible revision of Directive 96/67/EC on access to the groundhandling market at Community airports - Framework Contract for impact assessment and evaluations (TREN/A1/143-2007) - Final Report*. London: Steer Davies Gleave, 2010. Available at: https://transport.ec.europa.eu/system/files/2016-09/2010-revision-groundhandling-report.pdf. pp. 81-82.

[568] AIRPORT RESEARCH CENTER. *op. cit.* pp. 16-18; STEER DAVIES GLEAVE. *Study on airport ownership and management and the ground handling market in selected non-EU countries.* p. 1; MEERSMAN, Hilde; PAUWELS, Tom; STRUYF, Els; VOORDE, Eddy Van de; VANELSLANDER, Thierry. *op. cit.* p. 129.

Nevertheless, several challenges remain, preventing the ground handling market from being more competitive. For example, there are still barriers to entry, such as the limited size of contestable markets and the dominance of airport operators in the ground handling market at some locations.[569]

In 2011, the European Commission adopted the so-called "Airport Package", which included a proposal for a Regulation on ground handling services, to repeal Council Directive 96/67/EC. This aimed at further liberalising the market at larger airports, increasing efficiencies and quality of ground handling services. In particular, the initiative intended to ensure that airlines have more choice of ground handling suppliers, as well as to guarantee a level playing field at airport level between ground handling suppliers operating under different regulatory regimes.[570] However, this proposal was withdrawn by the European Commission in 2015, since its final adoption seemed unlikely. One topic of disagreement related to the number of third-party handlers at each airport.[571]

In 2019, within its "Aviation Strategy for Europe", the European Commission highlighted the importance of competitive ground handling for the EU aviation sector and indicated that it would continue to work towards the effective implementation of Council Directive 96/67/EC, focusing on ensuring market access for ground handling services at EU airports and guaranteeing competition between ground handlers. The Commission also stated that it would undertake an evaluation of the Directive in 2017 to decide whether its review is necessary.[572] The related evolution roadmap was published in February 2019, mentioning that the assessment would examine whether the specific objectives of the Directive (i.e. improved quality and efficiency of ground handling services through market opening) have been

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[569] STEER DAVIES GLEAVE. *Possible revision of Directive 96/67/EC on access to the groundhandling market at Community airports - Framework Contract for impact assessment and evaluations (TREN/A1/143-2007) - Final Report.* p. 113.

[570] EUROPEAN COMMISSION. *Proposal for a Regulation of the European Parliament and of the Council on Groundhandling Services at Union Airports and Repealing Council Directive 96/67/EC*. COM(2011), 824 final, 2011/0397 (COD). Brussels, 1 December 2011. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52011PC0824.

[571] EUROPEAN PARLIAMENT. *Withdrawn by the European Commission, Groundhandling Services in Airports, "Deeper and fairer internal market with a strengthened industrial base / Services including transport"*. 20 November 2019. Available at: https://www.europarl.europa.eu/legislative-train/theme-deeper-and-fairer-internal-market-with-a-strengthened-industrial-base-services-including-transport/file-groundhandling-services-in-airports.

[572] EUROPEAN COMMISSION. *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, An Aviation Strategy for Europe*. COM(2015) 598 final. Brussels, 7 December 2015. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52015DC0598.

achieved.[573] The conclusion of this analysis was planned for the end of 2022, but by October 2023 it had not yet been published.[574]

3.2.2 Ground handling services in Brazil

In Brazil, the provision of ground handling services was liberalised in 2009, through Resolution ANAC No. 116/2009. Since then, ground handling service providers and airlines do not need an authorisation from the regulator to operate[575] and there are no significant regulatory entry barriers.[576]

Indeed, to operate at an airport a ground handling service provider must comply with airport regulations and the airport's operations manual, including as regards aviation safety and security. The provider also needs to furnish insurance covering any potential damage to individuals and goods resulting from its activities. Moreover, the firm's staff must possess the relevant qualifications for their assigned tasks and carry an airport identification card.[577]

To have access to the airport and offer services to airlines, a ground handling provider is not required to hold a space at the airport, but only a contract with an airline.[578] However, in practice, holding space at an airport, through a leasing agreement, is very relevant for being competitive, and most ground handling providers enter into contracts with the airport operator. This is because, in the absence of a leasing contract, ground handling providers will be charged a fee each time they access the airport facilities, making such operations economically unviable, as they end up being much more expensive than when holding a leasing contract.[579]

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[573] EUROPEAN COMMISSION. *Evaluation Roadmap, Evaluation - Groundhandling services at airports*. 2019. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=PI_COM:Ares(2019)854669&rid=2.
[574] EUROPEAN COMMISSION. *Ground handling services at EU airports — evaluation (2010-18)*. Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/2081-Ground-handling-services-at-EU-airports-evaluation-2010-18-_en. Accessed on 25 October 2023.
[575] Except for aviation fuel supply, to which a provider must obtain an authorisation from the regulator of the oil, natural gas and biofuels sectors (Brazilian National Agency of Petroleum, Natural Gas and Biofuels – ANP), as per Resolution ANP No. 935/2023 and Resolution ANP No. 936/2023.
[576] OECD. *OECD Competition Assessment Reviews: Brazil.* p. 77. According to the OECD, there are two regulatory restrictions related to the provision of ground handling services in Brazil: (i) the prohibition that an air carrier provides ground handling services to other airlines (unless they operate codeshare flights) and (ii) the requirement that the corporate purpose of third-party handlers is limited to the provision of ground handling services, except for the supply of aviation fuel. However, these barriers are not relevant and in practice do not limit entry (OECD. *OECD Competition Assessment Reviews: Brazil.* pp. 77-79).
[577] Resolution ANAC No. 116/2009.
[578] In this case, the ground handling service provider will operate in the spaces allocated to the airline in question (Article 8 of Resolution ANAC No. 302/2014).
[579] OECD. *OECD Competition Assessment Reviews: Brazil.* pp. 74, 77.

The cost for leasing an airport space is not determined by regulation, but rather subject to private law. Indeed, the airport operator is free to negotiate prices and other conditions with suppliers, including ground handling service providers. Conflicts between airport operators and suppliers can be mediated by ANAC. ANAC may also monitor prices at the airport vis-à-vis market practices, for instance by comparing prices with those for analogous spaces at national and foreign airports and by conducting cost analysis. If ANAC identifies that the airport operator is engaging in abusive and discriminatory practices, it may at any time establish price regulation for leasing airport spaces (e.g. price cap, revenue cap or any other regulatory mechanisms).[580]

Since the fourth airport concession round, concession contracts specify that, when setting prices for leasing an airport space, airport operators are required to follow objective criteria, for instance service level, available facilities and investment forecasts.[581] Moreover, the establishment and adjustment of prices for leasing an airport space must be subject to consultation with users.[582] These measures intend to further prevent airport operators from abusing their position in the downstream market, ensuring more competition in the provision of ground handling services.

Airport operators are not required to open a competitive tender for allocating airport space to ground handling providers.[583] In fact, aiming at increasing competition, the regulation allows that any player willing to enter the market will be able to do so.[584]

The location and size of the area to be allocated to each player is determined by the airport operator.[585] Airport operators have discretionary powers to allocate airport space, since there is no regulation for guiding such a process. This means that airport operators may discriminate against some players, which may be particularly problematic when airport managers also provide ground handling services (although this is rare in Brazil), as less attractive spaces could be allocated to their competitors.[586] Incumbent ground handling providers may also get a more favourable treatment, as the best areas may already be allocated to them, leaving only less attractive spaces to newcomers. As mentioned above, allocation of

[580] Article 11 of Resolution ANAC No. 302/2014.
[581] Item 11.7.1 of the concession contracts of the fourth round; item 11.6.1 of the concession contracts since the fifth round.
[582] Item 11.8 of the concession contracts of the fourth round; item 11.7 of the concession contracts since the fifth round.
[583] Article 40, paragraph 5, of the Brazilian Aeronautical Code.
[584] OECD. *OECD Competition Assessment Reviews: Brazil.* p. 72.
[585] Article 2, paragraph 2, of Resolution ANAC No. 302/2014.
[586] OECD. *OECD Competition Assessment Reviews: Brazil.* p. 73.

airport space is a relevant element of the ground handling market and represents a competitive advantage (or disadvantage), which may distort competition if a transparent and non-discriminatory procedure is not in place.

Airport operators can only limit access in case of shortage of physical spaces, preventing allocation to all ground handling providers. In such circumstances, airport operators must explain to ANAC why the restrictions were implemented, along with potential measures to mitigate the constraints. The justification presented by airport operators should also be made available to the public on ANAC's website.[587-588]

Airport concession contracts introduced additional rules to guarantee a more competitive ground handling market. Accordingly, when there is no sufficient airport space to accommodate all ground handling service providers, airport operators are required to request ANAC authorisation to limit the number of players at the airport. ANAC may determine a minimum number of providers in light of the circumstances of the specific case, to ensure that there will be competition in the market.[589]

Concession contracts also recognise that there may be economic (e.g. economies of scale and/or scope) or environmental reasons to justify the provision of some ground handling services in an exclusive manner. In such cases, the provision of the service by more than one player would not be possible or, if possible, would be very costly, either from an environmental or economic perspective. ANAC must authorise that the services in question are provided by a single player, which should occur only in very exceptional circumstances.[590]

This provision seems to be inspired on Article 8 of Council Directive 96/67/EC, concerning centralised infrastructures. Nevertheless, unlike the EU regime, the Brazilian framework does not impose the possibility for other handlers to use the infrastructures, nor that the management of such facilities must follow transparent, objective and non-discriminatory criteria. In fact, although the Brazilian regulator used the wording of the European provision concerning centralised infrastructures, it apparently sought to address the issue of restricting the provision of ground handling services to a single firm.

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[587] Article 9, paragraphs 1 and 2, of Resolution ANAC No. 302/2014. In addition, as mentioned above, even if a ground handling provider does not hold an airport space, it can still operate at the airport as long as it has a contract with an airline.

[588] These requirements seem to be inspired on those set out by Article 9 of Council Directive 96/67/EC.

[589] Items 11.7.1 and 11.7.2 of the concession contracts of the second round; items 11.9 and 11.9.1 of the concession contracts of the third round; items 11.13.1 and 11.13.2 of the concession contracts of the fourth round; items 11.11.1 and 11.11.2 of the concession contracts since the fifth round.

[590] Item 11.7.3 of the concession contracts of the second round; item 11.10 of the concession contracts of the third round; item 11.13.3 of the concession contracts of the fourth round; item 11.11.3 of the concession contracts since the fifth round.

Finally, concession contracts state that concessionaires must maintain distinct accounts as regards their airport management operations and the provision of ground handling services.[591] This intends to facilitate the oversight of the provision of ground handling services by airport operators, thereby preventing them from engaging in discriminatory behaviour against their competitors in the downstream market. Nevertheless, concessionaires have not engaged in the provision of ground handling services so far.[592]

Therefore, unlike the approach adopted by the EU during the 1990s, in Brazil the regulation of ground handling services has been more limited and until recently there were no clear measures to foster competition in the sector.[593] Only with the airport concession process, new provisions have been introduced seeking to increase competition in this market. These provisions, however, are simpler than those in Europe. For example, there is no obligation for airport operators to carry out a competitive tender when the number of ground handlers is limited. Additionally, in the latter case, the selected ground handlers can operate for up to 25 years (or even longer, if authorised by the Ministry of Ports and Airports).[594]

This approach can be explained by the fact that historically Brazilian airports did not offer ground handling services, and such activities were provided either directly by the airlines (self-handling) or by third-party handlers. In other words, the airport operator only provided the infrastructure and did not compete in the downstream market, leaving to the airlines the decision to choose their providers. In such a scenario, rules to open the market were perhaps not necessary, although issues related to space allocation and limitation of the number of providers existed and could have benefited from a more interventionist regulation.

The introduction of new rules seems coherent within the process of airport concessions, since it changed the structure and functioning of the market. The historical monopolist (Infraero) no longer manages most of the airports, and new airport operators (concessionaires) can start operating in the downstream ground handling market – although this has not occurred yet in practice –, requiring clear rules to prevent abusive practices.

In any case, ground handling services constitute, in general, a competitive market in Brazil. Airport operators do not provide ground handling services and only one airline self-

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[591] Item 4.13 of the concession contracts of the second and fourth rounds; item 4.11 of the concession contracts since the fifth round. This provision is clearly inspired on Article 4 of Council Directive 96/67/EC.
[592] STEER DAVIES GLEAVE. *Study on airport ownership and management and the ground handling market in selected non-EU countries.* pp. 48-49.
[593] ABESATA. *1° Anuário Brasileiro De Serviços Auxiliares De Transporte Aéreo*. São Paulo: ABESATA, 2014. Available at: https://www.abesata.org/br/wp-content/uploads/2017/01/Anuario_ABESATA-vers%C3%A3o-out.2014.compressed-ilovepdf-compressed.pdf. p. 21.
[594] Article 14 of Resolution ANAC No. 302/2014.

handle part of its operations. Most ground handling services are provided by third parties and, at least in the most relevant airports, airlines can choose among several providers, both domestic and foreign.[595]

Nonetheless, one major exception concerns jet fuel supply, which is a very concentrated market in Brazil, with significant barriers to entry. This will be further analysed in the next section.

3.3 On-airport jet fuel supply

As mentioned above, the supply of aviation fuel falls under the category of ground handling services, referring to the delivery of fuel into aircraft fuel tanks. Aviation fuel is the main input for air transport and represents one of the largest operating cost of airlines. For instance, fuel expenses accounted for around 28% of operating costs worldwide in 2023.[596]

There are two more common types of aviation fuel: jet fuel (typically used in larger commercial aircraft)[597] and aviation gasoline (Avgas, used in smaller private aircraft), although sustainable aviation fuels (SAF) have also been developed more recently to help the civil aviation industry in achieving its net-zero carbon emissions target by 2050. Jet fuel accounts for over 97% of the overall volume of aviation fuel sold worldwide.[598]

The supply chain of jet fuel is complex, involving several activities (outside and inside an airport), infrastructures, players and regulators. In general terms, this process occurs as

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[595] STEER DAVIES GLEAVE. *Study on airport ownership and management and the ground handling market in selected non-EU countries.* pp. 48-49; ABESATA. Panorama dos serviços auxiliares do transporte aéreo no Brasil. São Paulo: ABESATA, 2016. Available at: https://www.abesata.org/br/panorama-2016/. p. 39.

[596] IATA. *Fuel - Fact Sheet.* 2023. Available at: https://www.iata.org/en/iata-repository/pressroom/fact-sheets/fact-sheet---fuel/.

[597] It should be mentioned that there are different types of jet fuel, such as Jet A, Jet A-1 and Jet B. The most widely used category worldwide is Jet A-1, while Jet A is essentially used in the United States. These types of jet fuel differ mainly in terms of their freezing point and can be used interchangeably. In October 2021, the commercialisation of Jet A was liberalised in Brazil, aiming at increasing the offer of jet fuel in the market, with the potential to reduce costs for airlines and, in turn, benefit passengers. According to the Brazilian independent regulator of the oil, natural gas and biofuels sectors (ANP), this regulatory measure could impact up to 0.6% on the jet fuel costs in the country (JETEX. *Focus on Fuel Part One: Different Types of Aviation Fuel*. 2023. Available at: https://www.jetex.com/focus-fuel-part-one-different-types-aviation-fuel/; MINISTÉRIO DA INFRAESTRUTURA. *Brasil avança para reduzir custos do combustível de aviação*. 29 January 2021. Available at: https://www.gov.br/transportes/pt-br/pt-br/assuntos/noticias/2021/1/brasil-avanca-para-reduzir-custos-do-combustivel-de-aviacao).

[598] JETEX. *op. cit.*; IATA. *Net zero 2050: sustainable aviation fuels*. 2023. Available at: https://www.iata.org/en/iata-repository/pressroom/fact-sheets/fact-sheet---alternative-fuels/; FORTUNE BUSINESS INSIGHTS. *Aviation Fuel Market Size, Share & COVID-19 Impact Analysis, By Fuel Type (Jet Fuel {Aviation Turbine Fuel}, Aviation Gas, Bio Jet Fuel), By End-user (Commercial, Private, Military), and Regional Forecasts, 2022-2029*. 2022. Available at: https://www.fortunebusinessinsights.com/industry-reports/aviation-fuel-market-100427.

follows. First, crude oil is extracted from the earth through drilling operations. Second, crude oil is processed at oil refineries to yield various petroleum products, including jet fuel. If these stages occur in a third country, jet fuel needs to be imported, thereby adding another step to the supply chain. Third, jet fuel is stored at an off-airport storage facility (inland or import terminal). Fourth, jet fuel is transported, by pipeline, railcar, barge or truck, to and stored at an airport storage facility (so-called airport fuel farm). Fifth, jet fuel is distributed from the storage tanks to the aircraft tank (so-called into-plane supply).[599] This thesis will focus on on-airport jet fuel supply (i.e. reception and storage of jet fuel into airport fuel farm and into-plane supply), which is directly related to the operation of an airport and subject to civil aviation regulation.

There are different methods for dispensing fuel to an aircraft, typically selected based on the level of aircraft movements and the type of aircraft an airport expects to receive. Most large commercial airports have hydrant systems, with underground pipe networks connecting the storage tanks to each gate, and a hydrant unit (either a truck or cart) is used to fuel an aircraft through hose connections. Another method for dispensing fuel is through refuelling trucks, which carry fuel and transfer it to an aircraft directly. The use of refuelling trucks is more suited to airports with less aircraft movements or smaller aircraft, as each truck carries limited amounts of fuel, and they could cause congestion and take up ramp space at busier airports.[600]

Just like other ground handling services, jet fuel supply can be provided by the airport operator, by airlines or by third parties. In general, the airport operator does not own or operate jet fuel supply infrastructures (namely, the airport fuel farm and hydrant distribution facilities);[601] instead, they permit jet fuel suppliers to develop and operate these infrastructures on their premises. Each jet fuel supplier can have its own facilities or operate shared facilities. The latter option is very common thanks to limited airport space and large capital investments required to develop and operate such infrastructures. In other words, duplication of jet fuel

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[599] ACIL ALLEN CONSULTING. *Competition in the Jet Fuel Supply Market: Submission to the Productivity Commission Inquiry into Airport Competition*. 2018. Available at: https://acilallen.com.au/uploads/projects/181/ACILAllen_JetFuel_2018-1593412678.pdf. pp. 3-5; AIRPORT COOPERATIVE RESEARCH PROGRAM. *ACRP Synthesis 63: Overview of Airport Fueling System Operations – A Synthesis of Airport Practice*. Washington, DC: National Academies Press, 2015. Available at: https://nap.nationalacademies.org/catalog/22141/overview-of-airport-fueling-operations. p. 4.

[600] AIRPORT COOPERATIVE RESEARCH PROGRAM. *ACRP Synthesis 63: Overview of Airport Fueling System Operations – A Synthesis of Airport Practice*. pp. 25-29; AIRPORT COOPERATIVE RESEARCH PROGRAM. *ACRP Report 25: Airport Passenger Terminal Planning and Design, Volume 1 – Guidebook*. Washington, DC: National Academies Press, 2010. Available at: https://nap.nationalacademies.org/catalog/22964/airport-passenger-terminal-planning-and-design-volume-1-guidebook. p. 120; CHEVRON. *Aviation Fuels: Technical Review*. San Ramon, CA: Chevron, 2007. Available at: www.chevron.com/-/media/chevron/operations/documents/aviation-tech-review.pdf. p. 76.

[601] However, there are examples where the airport operator owns the jet fuel supply facilities, as mentioned in section 3.3.1.

supply facilities might be uneconomic and operationally unfeasible, resulting in a single infrastructure for jet fuel supply at the airport. Therefore, new entrants may need access not only to the airport, but also to the jet fuel supply infrastructures (i.e. the airport fuel farm and hydrant distribution facilities), which may give rise to several competition concerns.[602]

Many jurisdictions have debated whether and how the regulation of jet fuel supply should ensure access to newcomers in order to foster competition in this market. Similar discussions have also emerged in Brazil.

3.3.1 Open-access regime for on-airport jet fuel supply infrastructures

Many airports still face limited competition in the supply of jet fuel. A supplier's capacity to compete may be limited even at airports with more than one provider, for instance by excessive and unreasonable fees for the use of the jet fuel supply facilities at the airport and the absence of independent into-plane service provider. In this context, IATA has been advocating for open markets and free and fair competition in the supply of jet fuel at airports, which leads to higher quality of service and competitive prices. In particular, IATA suggests that on-airport jet fuel supply infrastructures should be common use facilities and made available to all effective and potential users that meet the required safety, quality and reliability criteria, in an open and transparent process. In addition, suppliers should only be required to pay transparent, non-discriminatory, cost-based and reasonable fees to use common facilities, such as storage and hydrant systems. It also recommends avoiding vertical integration of participants in the jet fuel supply chain.[603]

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[602] AIRPORT COOPERATIVE RESEARCH PROGRAM. *ACRP Synthesis 63: Overview of Airport Fueling System Operations – A Synthesis of Airport Practice*. pp. 13-15; SUBCOMITÊ DE ABASTECIMENTO DE COMBUSTÍVEIS DE AVIAÇÃO. *Relatório de Atividades: Abastecimento de Combustíveis de Aviação ao Conselho Nacional de Política Energética*. 2021. Available at: https://oeco.org.br/wp-content/uploads/2022/01/20210119RelatrioSubcomitdeAviao_final.pdf. pp. 34-35; ACIL ALLEN CONSULTING. *op. cit.* p. 7.

[603] IATA. *Competition in the Jet Fuel Supply Chain*. Available at: https://www.iata.org/contentassets/ebdba50e57194019930d72722413edd4/position-paper---competition-in-jet-fuel-supply-chain_28382.pdf. However, IATA recognises that ensuring open access to on-airport jet fuel supply facilities cannot be effective if the other segments of the supply chain are not competitive. Therefore, actions aimed at the airport should be complemented by efforts to eliminate entry barriers for jet fuel supply beyond the airport premises, such as ensuring open access to off-airport jet fuel facilities.

Potential competition concerns in the jet fuel supply market have been identified, for example, in Australia. According to the assessment of the Australian Productivity Commission in 2019, the market is dominated by four vertically integrated suppliers and characterised by high barriers to entry. This makes it challenging for new jet fuel suppliers to access infrastructures, resulting in increased jet fuel prices. The Productivity Commission concluded that fostering third-party access to infrastructure services is necessary to increase competition and put downward pressure on prices to access such services and on jet fuel prices. Nonetheless, the Productivity Commission recognised that conditions for competition were improving at some airports, where lease arrangements for jet fuel supply facilities (called Joint User Hydrant Installation – JUHI) were incorporating open access for third-party fuel suppliers.[604]

At Melbourne airport, for instance, JUHI arrangements were designed to ensure an open access regime in order to facilitate competition in the jet fuel supply market. The JUHI is collectively owned by four players and the joint venture allows non-equity participants to access the facilities and services. The application process is the same for each applicant and open to all potential jet fuel suppliers, which must comply with the qualifying criteria. In case the joint venture rejects the application, the reasons for such a rejection must be provided, the decision can be challenged, and the applicant can submit a new application. All JUHI users (either equity holders or non-equity holders) are charged the same tariffs, which are set annually and cover operating costs of airport storage and distribution, a return on capital for investment into airport infrastructure and off-airport to airport delivery fees, if applicable.[605]

In 2017, the operator of Darwin airport purchased a partial ownership stake in the JUHI, with a predetermined timeline for acquiring full ownership of the facilities in the future. This aimed at implementing an open access system, facilitating the entry of new jet fuel suppliers, promoting more competition and ultimately lowering prices.[606]

Furthermore, the operator of Sydney airport acquired full ownership of the airport's JUHI in 2020. One of the objectives of this measure was to increase competition for jet fuel supply at the airport.[607] Since then, access to the JUHI is open to any interested party and the

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[604] PRODUCTIVITY COMMISSION. *Economic Regulation of Airports, Inquiry Report No. 92.* pp. 32-33.
[605] ACIL ALLEN CONSULTING. *op. cit.* pp. 9-11.
[606] INFRASTRUCTURE MAGAZINE. *Darwin Airport purchase jet fuel storage facility*. 16 August 2017. Available at: https://infrastructuremagazine.com.au/2017/08/16/darwin-airport-purchase-jet-fuel-storage-facility/.
[607] SYDNEY AIRPORT. *Sydney Airport completes acquisition of jet fuel infrastructure assets*. 1 October 2020. Available at: https://www.sydneyairport.com.au/corporate/media/corporate-newsroom/jet-fuel-media-release.

application process is available at the airport's website. Suppliers using the facilities must pay the same fee (called fuel service rate – FSR), charged on a per litre basis.[608]

Western Sydney airport, currently under construction and scheduled to begin operation in late 2026, is also considering implementing an open access system for on-airport jet fuel supply infrastructures.[609]

Given the importance of ensuring competition in the jet fuel supply market, in 2023 the ACCC suggested a matter on aircraft refuelling (particularly as regards the JUHI) among the recommendations it presented to the Australian Government for amending the list of records that the monitored airports must provide to the ACCC on the quality of their services and facilities. Accordingly, the ACCC proposed to monitor whether the jet fuel supply infrastructures are operated on an open access basis for competing fuel providers.[610]

Similar concerns were raised in New Zealand during a 2019 government inquiry into jet fuel supply at Auckland airport. In New Zealand, the airport's jet fuel supply infrastructures (also referred to as JUHI) are operated under a restricted-access system, which prevents newcomers from using the facilities by paying a fee. Instead, jet fuel suppliers must acquire an equity stake in the joint venture to gain access to the infrastructures, and the joint venture participants have the power to decide whether they will grant access to a new entrant. Nonetheless, the terms of access for the JUHI are not transparent to newcomers seeking to become equity owners. Moreover, the incumbent joint venture participants have incentives to deny or inhibit access to new entrants, since the latter would compete with the former as jet fuel suppliers. The inquiry concluded that the access regime creates significant barriers to entry for new players and that ensuring open access to the JUHI would reduce these barriers.[611]

Hong Kong International Airport is often referred to as a prime example of an open access system for jet fuel supply facilities. Since its inauguration in 1998, any jet fuel supplier or self-handling airline meeting the qualification requirements can bring, store and dispense its

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[608] SYDNEY AIRPORT. *Sustainability Report 2020 - From the ground up*. 2021. Available at: https://s2.listcorp.com/asx/syd/sydney-airport-limited/news/sydney-airport-2020-sustainability-report-2509664.pdf. p. 34; SYDNEY AIRPORT. *Jet Fuel*. Available at: https://www.sydneyairport.com.au/corporate/partner-with-us/jetfuel.

[609] WESTERN SYDNEY INTERNATIONAL AIRPORT. *Review of Aviation Fuel Supply Options - May 2023*. 2023. Available at: https://westernsydney.com.au/sites/default/files/2023-05/WSI%20Review%20of%20Aviation%20Fuel%20Supply%20Options%202023.pdf.

[610] ACCC. *Airport quality indicators – recommendations to government*. Canberra: ACCC, 2023. Available at: https://www.accc.gov.au/system/files/ACCC%20final%20advice%20on%20airport%20quality%20May%202023_0.pdf. p. 16.

[611] NEW ZEALAND GOVERNMENT. *Government Inquiry into the Auckland Fuel Supply Disruption: Final Report*. 2019. www.dia.govt.nz/diawebsite.nsf/Files/Inquiry-into-the-Auckland-Fuel-Supply-Disruption/$file/AFSD-Inquiry-Report-August-2019.pdf. pp. 111-115.

fuel at the airport. In return, the supplier is required to pay a transparent, fair, non-discriminatory and reasonable fee. The construction and operation of the jet fuel supply infrastructures were carried out by a joint venture (equally owned by seven oil companies and two airlines), selected through a transparent open tender. Subsequently, the airport operator acquired the ownership of the facilities, while their operation remained under the management of the joint venture. The introduction of an open access regime led to the entry of several new jet fuel suppliers, increasing contestability and resulting in better quality and lower prices. In fact, whereas the old airport had seven jet fuel suppliers, the new airport has thirteen – six of which do not hold any stake in the joint venture that operates the facilities.[612]

In Europe, as mentioned in section 3.2.1, on-airport jet fuel supply facilities are often declared as centralised infrastructures, in accordance with Council Directive 96/67/EC. This means that these facilities are managed by a single entity, but third parties should have access to them on reasonable and non-discriminatory terms. However, the Directive is unclear about the management of centralised infrastructures, raising significant competition concerns. This is because Member States often reserve the management of centralised infrastructures – including fuel distribution systems – for an incumbent supplier (namely oil companies) that also provides ground handling services, which can use its role as infrastructure supplier to impact competition, for instance by imposing discriminatory fees on its downstream market competitors. In practice, in many Member States airlines have been complained about centralised infrastructures, especially as regards jet fuel supply facilities.[613-614]

The inappropriate legal framework provided for by Council Directive 96/67/EC was already recognised by the European Commission, which proposed clearer rules for the

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[612] BARA. *Submission to the Productivity Commission – the competitive supply of jet fuel*. 2018. Available at: www.pc.gov.au/__data/assets/pdf_file/0011/231320/sub037-airports.pdf. pp. 25-26; CHOW, B. S. Fuelling excellence at HKIA. *International Airport Review*, 11 September 2006. Available at: https://www.internationalairportreview.com/article/1635/fuelling-excellence-at-hkia.

[613] EUROPEAN COMMISSION. *Commission Staff Working Paper Impact Assessment Accompanying the Document Proposal for a Regulation of the European Parliament and of the Council on groundhandling services at Union airports and repealing Council Directive 96/67/EC*. SEC(2011) 1439 final. Brussels, 1 December 2011. Available at: https://eur-lex.europa.eu/resource.html?uri=cellar:6c4173b0-0728-4df9-a463-c84f975df568.0001.02/DOC_1&format=PDF. p. 15. As also mentioned above, in 2009 it was identified that the number of jet fuel suppliers at airports did not homogeneously increase between 1996 (when the Council Directive 96/67/EC entered into force) and 2007 (AIRPORT RESEARCH CENTER. *op. cit.* pp. 74-76).

[614] The management of jet fuel supply infrastructures by a joint venture of incumbents can also preclude entry. For instance, in 2006 the Italian competition authority sanctioned six oil companies for an anti-competitive agreement related to on-airport jet fuel supply, particularly to divide the market and prevent the entry of new operators. Besides fines amounting to EUR 315.4 million, the competition authority required the incumbents to grant access to third parties in the jet fuel supply market (AGCM. *Antitrust Fines Six Oil Companies €315.4m Over Arrangement in Airport Fuel Supplies*. 20 June 2006. Available at: https://en.agcm.it/en/media/press-releases/2006/6/alias-1164).

definition of centralised infrastructures and the fees to be charged to suppliers for the use of such facilities.[615] This would help to ensure an effective open access regime at European airports. Nonetheless, as mentioned in section 3.2.1, the proposal for a new regulation of ground handling services was withdrawn in 2015 and currently a new assessment of the Directive is being conducted by the European Commission.

Finally, COFECE concluded a market investigation in 2023 on the jet fuel sector in Mexico, identifying several barriers to competition and free market access, which restricted the efficient functioning of the whole supply chain of jet fuel, including storage and sale of jet fuel at airports. For instance, the SOE *Aeropuertos y Servicios Auxiliares* (ASA), the main into-plane jet fuel provider in Mexico, is vertically integrated in many segments of the market and does not effectively implement functional, operational and accounting separation. Moreover, certain concession titles for the operation and management of airports provide for exclusivity clauses in favour of ASA for the storage and sale of jet fuel, even though these provisions are no longer in force since the 2014 Hydrocarbons Law took effect. In practice, this means that ASA still holds a monopoly in the supply of jet fuel at many Mexican airports. COFECE issued several recommendations to the Mexican government and ordered ASA to tackle these barriers in order to allow a greater entry of competitors into the jet fuel supply market, which is expected to lead to lower prices for final consumers.[616]

These examples indicate that numerous jurisdictions are striving to enhance competition in the on-airport jet fuel supply market, often through regulatory changes. An open access system appears to be an appropriate regulatory model for addressing competition issues, allowing for more entry and resulting in better quality and lower prices.

3.3.2 Jet fuel supply at Brazilian airports

In Brazil, although jet fuel supply can also be provided by the airport operator or self-handling airlines, they are not interested in doing so, and therefore only third-party handlers operate this activity.[617] On-airport jet fuel supply is regulated by both ANAC and ANP

[615] EUROPEAN COMMISSION. *Proposal for a Regulation of the European Parliament and of the Council on Groundhandling Services at Union Airports and Repealing Council Directive 96/67/EC*.
[616] COFECE. *Cofece determined the existence of barriers to competition in the relevant markets of the value chain of jet fuel*. Cofece-009-2023. 17 March 2023. Available at: https://www.cofece.mx/wp-content/uploads/2023/03/COFECE-009-2023_ENG.pdf.
[617] ANP; ANAC. *Nota Técnica Conjunta nº 001/2019/ANP-ANAC*. 2019. Available at: www.gov.br/mme/pt-br/assuntos/secretarias/petroleo-gas-natural-e-biocombustiveis/abastece-brasil/subcomites/Nota_Tecnica_Conjunta_001_2019_ANP_ANACcompactado.pdf. p. 15.

(Brazilian National Agency of Petroleum, Natural Gas and Biofuels). ANP's regulation is primarily related to technical aspects – namely to ensure quality control and safety –, requiring firms to obtain an authorisation to operate as jet fuel suppliers at the airport.[618] In its turn, ANAC focuses on the issue of access to the airport. ANAC's regulation on ground handling services in general,[619] as described in section 3.2.2, also applies to jet fuel supply.

Accordingly, anyone willing to enter the market to provide ground handling services, including jet fuel supply, can do so, and the airport operator must allow access to its facilities on a non-discriminatory manner. Only in case of a shortage of physical infrastructure space the airport operator can refuse access, but must justify the limitation to ANAC and indicate the measures that will be implemented to reduce the constraints.[620] Conforming to the airport concession contracts, ANAC must also authorise the restriction on the number of suppliers at the airport, and may determine a minimum number of providers.[621] Moreover, ANAC may authorise the provision of ground handling services by a single player (monopoly) in cases where the complexity, cost or environmental impact does not allow for division or duplication.[622]

Nevertheless, these provisions address access to the airport more broadly and do not refer to specific infrastructures that may be required to provide some services. This might be the case for jet fuel supply as regards the airport fuel farm and hydrant distribution facilities.[623] In practice, this ambiguity has raised questions about whether the airport operator, in addition to allocating a suitable space for new entrants, was also required to ensure access to pre-existing jet fuel supply infrastructures. At most airports in Brazil, incumbents typically control jet fuel infrastructures, often jointly operating these facilities and preventing or making it difficult for new players to access them.[624]

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[618] Resolution ANP No. 935/2023 and Resolution ANP No. 936/2023.
[619] In particular, Resolution ANAC No. 116/2009, Resolution ANAC No. 302/2014 and the airport concession contracts.
[620] Article 1, paragraph 1, and Article 9, paragraphs 1 and 2, of Resolution ANAC No. 302/2014
[621] Items 11.7.1 and 11.7.2 of the concession contracts of the second round; items 11.9 and 11.9.1 of the concession contracts of the third round; items 11.13.1 and 11.13.2 of the concession contracts of the fourth round; items 11.11.1 and 11.11.2 of the concession contracts since the fifth round.
[622] Item 11.7.3 of the concession contracts of the second round; item 11.10 of the concession contracts of the third round; item 11.13.3 of the concession contracts of the fourth round; item 11.11.3 of the concession contracts since the fifth round.
[623] Only a few Brazilian airports have hydrant distribution systems, such as São Paulo/Guarulhos, Rio de Janeiro/Galeão, Brasília, Recife, Fortaleza and Salvador. In most airports the fuel is dispensed through refuelling trucks (OECD. *OECD Competition Assessment Reviews: Brazil.* p. 81).
[624] SUBCOMITÊ DE ABASTECIMENTO DE COMBUSTÍVEIS DE AVIAÇÃO. *op. cit.*; PEREIRA, Tiago Sousa; NOMAN, Juliano Alcântara. O problema da falta de concorrência na distribuição do querosene de aviação (QAV). *Jota*, 9 August 2021. Available at: https://www.jota.info/opiniao-e-analise/artigos/o-problema-da-falta-de-concorrencia-na-distribuicao-do-querosene-de-aviacao-qav-09082021.

Even if it were assumed that there was an open access right to new entrants covering the jet fuel supply infrastructures, it would still be challenging for these firms to enter the market and use the facilities. In fact, there was a regulatory gap since regulation did not establish the procedures and requirements for enabling shared use of the infrastructures. In practice, incumbents had a significant margin of discretion in setting prices and the terms of access, resulting in newcomers being denied entry into the market.[625]

This discussion was particularly important at airports with hydrant systems. Hydrant systems reduce the number and size of ground equipment, help to reduce ramp congestion and allow for quick aircraft turnaround times, increasing safety and efficiency of daily airport operations. As previously mentioned, constructing hydrant facilities is cost-intensive and may not be viable due to airport space constraints or, at least, be financially unfeasible. Although it may be possible to use refuelling trucks at airports with hydrant systems, depending on the airport's characteristics and operational requirements, having access to hydrants can provide a significant competitive advantage, especially for fuelling large aircraft operating international flights.[626]

The regulatory framework was indicated as a major reason for a high market concentration in on-airport jet fuel supply in Brazil, in which three firms control more than 99% of the market. Alongside other factors,[627] this contributes to the high cost of jet fuel in Brazil. In fact, jet fuel prices in the country are much higher than the international average (e.g. in December 2022 prices in Brazil were over 30% more expensive than in the United States), accounting for a larger percentage of total operating costs for airlines operating in Brazil compared to those operating elsewhere.[628]

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[625] OECD. *OECD Competition Assessment Reviews: Brazil*. p. 82.

[626] AIRPORT COOPERATIVE RESEARCH PROGRAM. *ACRP Report 25: Airport Passenger Terminal Planning and Design, Volume 1 – Guidebook*. p. 120; HROMÁDKA, Martin; CÍGER, Andrej. Hydrant refueling system as an optimisation of aircraft refuelling. *Transport Problems*, v. 10, n. 3, 2015. Available at: http://transportproblems.polsl.pl/pl/archiwum/2015/zeszyt3/2015t10z3_07.pdf. p. 62; ACIL ALLEN CONSULTING. *op. cit.* p. 7; SUBCOMITÊ DE ABASTECIMENTO DE COMBUSTÍVEIS DE AVIAÇÃO. *op. cit.*

[627] For instance, the high concentration of the other stages of the supply chain. Indeed, Petrobras, an SOE, has a quasi-monopoly in the production and import of jet fuel, as well as in the transportation of jet fuel to airport storage facilities, in airports connected through pipelines (currently only two: São Paulo/Guarulhos and Rio de Janeiro/Galeão), or intermediate storage facilities, from which the fuel is transported by truck to the airports. The tax regime also plays a role in the high costs of jet fuel in Brazil (SUBCOMITÊ DE ABASTECIMENTO DE COMBUSTÍVEIS DE AVIAÇÃO. *op. cit.*; ABEAR. *op. cit.* pp. 49-54; PEREIRA, Tiago Sousa; NOMAN, Juliano Alcântara. *op. cit.*).

[628] SUBCOMITÊ DE ABASTECIMENTO DE COMBUSTÍVEIS DE AVIAÇÃO. *op. cit.*; ABEAR. *Querosene de aviação (QAV) no Brasil é 32,3% mais caro que nos EUA*. 6 December 2022. Available at: https://www.abear.com.br/imprensa/agencia-abear/noticias/querosene-de-aviacao-qav-no-brasil-e-323-mais-caro-que-nos-eua/; INSTITUTO BRASILEIRO DE AVIAÇÃO. *Anuário Brasileiro de Aviação Civil: 2020*. 2020. Available at: https://sindag.org.br/wp-content/uploads/2020/11/Anua%CC%81rio-Brasileiro-da-

A landmark case concerns a dispute at São Paulo/Guarulhos, the largest Brazilian airport, involving a new entrant aiming to access the existing jet fuel supply infrastructures. In the early 2010s, Gran Petro, a newcomer, sought to enter the airport, in particular having access to the existing jet fuel supply facilities, jointly operated by Vibra Energia, Raízen and Air BP (the three incumbents). However, the concessionaire of the airport and the incumbents refused Gran Petro access to the facilities.

In 2013 and 2014, Gran Petro submitted a complaint to ANAC and CADE, respectively, in light of potential regulatory and anti-competitive infringements. These administrative proceedings provided the civil aviation regulator and the competition authority with an opportunity to further assess the market. The final administrative decisions by ANAC and CADE were issued in January 2021 and November 2022, respectively, finding the existence of sector regulation and competition law infringements.[629]

The case before ANAC[630] focused on whether the concessionaire of São Paulo/Guarulhos airport had infringed civil aviation regulation, in particular the provision[631] of the concession contract that requires the concessionaire to ensure open access at the airport to ground handling service providers, preventing abusive and discriminatory practices.

The final administrative decision, issued by ANAC's Board of Directors,[632] concluded that the concessionaire indeed violated the concession contract. According to ANAC, regardless of whether jet fuel supply infrastructures constitute an essential facility, restricting a significant part of the demand due to a competitive advantage provided by the use of such facilities, given the difficulty of duplication and the airport operator's preference for dispensing jet fuel through hydrants, is incompatible with the rule of open access and the prohibition of discriminatory and abusive behaviour. Thus, the airport concessionaire should guarantee entry to any interested parties under conditions that allow for effective competition.

Aviac%CC%A7a%CC%83o-Civil-2020.pdf. p. 32; PAIVA, Letícia. Por que o combustível de aviação é mais caro no Brasil? *Jota*, 25 March 2021. Available at: https://www.jota.info/coberturas-especiais/aviacao-competitividade/por-que-o-combustivel-de-aviacao-e-mais-caro-no-brasil-25032021.

[629] It should be noted that these administrative decisions are currently under judicial review. In addition, there have been other judicial actions involving the same parties and addressing the same issue. Nonetheless, this thesis will not cover these judicial proceedings.

[630] Administrative Proceeding ANAC No. 00058.055367/2014-17.

[631] Item 11.7 of the concession contract of São Paulo/Guarulhos airport ensures that airlines and third parties are granted free access to provide ground handling services, in compliance with current regulation, even when these services are provided directly by the concessionaire. The item also prohibits any discriminatory and abusive practices, in accordance with current legislation and ANAC regulations.

[632] Decision of 26 January 2021, following Director-President Juliano Alcântara Noman's vote, Administrative Proceeding ANAC No. 00058.055367/2014-17.

Moreover, the airport operator is not exempt from the duty to ensure open access when it enters into contracts with third parties for the use of airport space and the provision of fuelling services. In fact, the concessionaire cannot delegate its regulatory responsibilities to third parties, such as the incumbent jet fuel suppliers.

ANAC imposed a fine of around BRL 3.5 million on São Paulo/Guarulhos' concessionaire. In addition, ANAC determined that the airport operator should establish reasonable, objective and non-discriminatory rules for governing the assessment of requests for potential entrants to use the jet fuel supply facilities. These rules would be necessary to ensure that incumbents do not act in a discretionary, abusive or discriminatory manner, in light of the incentives they have to prevent or hinder competitors' market access. ANAC also established that the issuance of these rules should be preceded by consultation with airlines and potential new entrants, with the aim of ensuring greater transparency and encouraging negotiated solutions.

Finally, ANAC determined that until the abovementioned rules were issued, a transitional regime should be implemented by the airport operator, guaranteeing immediate access to the jet fuel supply infrastructures for any interested party that complies with the applicable technical regulations and operational safety requirements. In return for using the facilities, new entrants should be required to pay a fee to the incumbents who operate the infrastructures. Such a fee should be based on the unamortised investment costs (to safeguard the investments made by the incumbents), as well as the capital and operation costs. The airport operator should also serve as an arbitrator in disputes between incumbents and newcomers arising from the implementation of this regime.

CADE's case,[633] in its turn, examined whether the conduct of the airport concessionaire and the three incumbent jet fuel suppliers violated competition law. CADE's Tribunal concluded that the behaviour in question indeed constituted an anti-competitive infringement.[634]

According to CADE, the parties abused their dominant position in the jet fuel supply market at the airport by limiting the entry of new companies into the market. The abuse took place because, in the absence of clear regulation (i.e. the existence of a regulatory gap), the concessionaire and the incumbent suppliers did not set the required fee that a third party should

[633] Administrative Proceeding CADE No. 08700.001831/2014-27.
[634] Decision of 9 November 2022, by a majority vote (4-2), following Commissioner Luis Henrique Bertolino Braido's vote, Administrative Proceeding CADE No. 08700.001831/2014-27. See also Commissioner Victor Oliveira Fernandes' vote.

pay to use the jet fuel supply infrastructures, aiming at preventing newcomers from entering the market. While the concessionaire and the incumbent jet fuel suppliers did not explicitly deny access to Gran Petro, they negotiated access terms with undue delay and in bad faith, imposing unfair and non-objective access conditions. In practice, this prevented entry, characterising the so-called constructive refusal to deal.

CADE also acknowledged that the obligation to guarantee open access stemmed from the existing regulatory framework and therefore there was no need to assess whether the facilities in question were indispensable, as this had already been established by the regulator. However, even if one considered that the entry of a firm without access to the jet fuel supply facilities could be financially feasible, it would rely on an expansion in the use of refuelling trucks to dispense jet fuel. This would distort the optimal allocation of production factors, resulting in technical inefficiency, higher costs, underutilisation of the hydrant system, increased average costs and, ultimately, a reduction in social welfare.

CADE sanctioned the concessionaire and the three jet fuel suppliers with fines totalling nearly BRL 153 million. Moreover, CADE determined that they should publish rules for third-party access to the jet fuel supply infrastructures. Compensation for the use of these facilities should be based on the unamortised investment costs and determined by an independent consulting firm.

Since the fifth airport concession round, some provisions were introduced in an attempt to improve the regulatory framework by addressing the issue of market access. Accordingly, the concession contracts require concessionaires to provide ANAC with all contracts involving the construction and operation of jet fuel pipelines and hydrants at the airport, before the signature of such agreements. ANAC assesses these contracts and may mandate the adoption of appropriate measures, if it deems it necessary to ensure a competitive market. In particular, the concession contracts give ANAC the power to impose restrictions or prohibitions on firms operating jet fuel pipelines and hydrants from also supplying jet fuel at the airport (i.e. vertical integration), if this is necessary to foster competition.[635] Nevertheless, in practice, these provisions were insufficient to resolve the problem and ensure more competition in the jet fuel supply market.

[635] Items 11.11.4 and 11.11.4.1 of the concession contracts since the fifth round.

In June 2023, ANAC implemented some changes in the regulation governing on-airport jet fuel supply, in light of the discussions held in the previous years, to improve the regulatory framework and increase competition.[636] Two main aspects deserve particular attention.

First, the provisions regarding the prior analysis of contracts involving jet fuel supply infrastructures, which were included in the concession contracts since the fifth round, have also been incorporated into the general regulatory framework – with some improvements –, applying to all airports. This aims at preventing anti-competitive practices in the operation of the jet fuel supply facilities.[637]

All contracts concerning the construction and operation of jet fuel pipelines and hydrants at the airport must be submitted to ANAC before these agreements are formalised, for analysis and possible remedial measures – including, in exceptional cases, restrictions on vertical integration between firms operating jet fuel pipelines and hydrants and firms supplying jet fuel at the airport.[638]

Furthermore, ANAC has clarified the conditions such contracts must fulfil. In particular, they must (i) not provide for exclusivity in the activities of jet fuel distribution or aircraft refuelling; (ii) be clear on which facilities and equipment are considered permanent improvements and justify the classification of facilities and equipment as removable; (iii) establish the amortisation period for the investments, after which permanent improvements will be returned, without any compensation, to the government or the airport operator; and (iv) provide for clear criteria and values for remuneration of the airport operator, which must be similar to those owed by other suppliers already operating or interested in operating activities of jet fuel distribution or aircraft refuelling at the airport.[639]

Second, ANAC introduced specific rules for São Paulo/Guarulhos and Rio de Janeiro/Galeão airports, with more robust open access clauses and governance processes – including consultation with users – to make it easier for new players to have access to jet fuel supply facilities at these airports.

According to ANAC, the different treatment is justified since these are the only Brazilian airports in which access to jet fuel supply facilities, particularly hydrant systems, is

[636] Resolution ANAC No. 717/2023, which amended Resolution ANAC No. 116/2009 and Resolution ANAC No. 302/2014.
[637] Director Rogério Benevides Carvalho's vote, of 24 April 2023, Administrative Proceeding ANAC No. 00058.029624/2019-61.
[638] Article 9-A, paragraph 4, of Resolution ANAC No. 302/2014.
[639] Article 9-A, paragraph 1, of Resolution ANAC No. 302/2014.

indeed essential for enabling suppliers to compete on equal terms with the incumbents.[640] However, it has been stipulated that these specific rules may also be applied to other airports in the future, in light of the following characteristics: (i) profile of jet fuel supply, considering aircraft operation and required volumes; (ii) existence of a competitive advantage resulting from access to the existing infrastructures, including the use of pipelines and hydrants; and (iii) space or environmental constraints of the airport for the installation of new jet fuel supply facilities.[641]

The regulatory framework makes it clear that both the airport operator and the incumbent suppliers operating the existing jet fuel supply infrastructures must guarantee access to these facilities for newcomers.[642] It also outlines that access to jet fuel supply facilities can be implemented through equity purchase, a fee for service basis or any other approach previously defined and subjected to a public consultation process.[643]

Furthermore, the regulation states that both the airport operator and the operators of the jet fuel supply infrastructures must publicise the access terms for shared used of the facilities. The access terms must provide for transparent, objective and non-discriminatory requirements, which may include compliance with operational safety specifications, established by current regulations and internationally accepted standards. These terms must also define the compensation for access, which must relate to unamortised investment costs, as well as capital and operational costs, in order to protect the investments already made by the incumbents and ensure fair compensation for the use of the infrastructures. Moreover, the access terms must specify which facilities and equipment will be covered by shared use. In addition, such terms must set a reasonable timeframe for reviewing requests for shared use, not exceeding 90 days, and for the commencement of operations by newcomers. The access terms must undergo, prior to issuance, consultation with airlines and potential new entrants. If the parties fail to reach an agreement on any aspects of the access terms, ANAC will act as an arbitrator and decide the matter.[644]

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[640] Deputy Director-President Tiago Sousa Pereira's vote, of 7 June 2023, Administrative Proceeding ANAC No. 00058.029624/2019-61; ANAC. *Justificativa - Tema 15 da Agenda Regulatória ANAC 2021-2022 – acesso ao mercado de distribuição de combustível de aviação. Proposta de resolução que altera a Resolução nº 302/14 e a Resolução nº 116/09*. 2022. Available at: https://sei.anac.gov.br/sei/modulos/pesquisa/md_pesq_processo_exibir.php?iI3OtHvPArITY997V09rhsSkbDKbaYSycOHqqF2xsM0IaDkkEyJpus7kCPb435VNEAb16AAxmJKUdrsNWVIqQ_Kc9C3X3wXdpqnKCc4rSB82gZXTsRTAB6K3bWYSu7Eu.

[641] Article 14-A, paragraph 1, of Resolution ANAC No. 302/2014.

[642] Article 14-A of Resolution ANAC No. 302/2014 and Article 19-A, item I, of Resolution ANAC No. 116/2009.

[643] Article 14-A, paragraph 2, of Resolution ANAC No. 302/2014.

[644] Article 14-B and Article 14-D of Resolution ANAC No. 302/2014 and Article 19-A, item II and sole paragraph, of Resolution ANAC No. 116/2009; Director Rogério Benevides Carvalho's vote, of 24 April 2023, Administrative Proceeding ANAC No. 00058.029624/2019-61.

These regulatory changes are expected to enhance competition in the jet fuel supply market, through new entry, which is likely to reduce jet fuel costs and, ultimately, air ticket prices. According to an OECD estimate, these changes could lead to consumer benefits ranging from BRL 896 million to BRL 1 352 million between 2022 and 2032.[645]

3.4 Commercial services

In addition to aeronautical activities, airports also engage in non-aeronautical or commercial services,[646] which refer to activities provided at the terminal or around the airport to passengers, other customers and local business communities. These activities include, for instance, duty-free shops and other retail shopping, restaurants and bars, banks, transfers, car rental, car parks, hotels, office rentals, conference facilities and advertising. Most non-aeronautical services are provided by third parties, typically under a concession contract,[647] through which the airport operator charges – on a fixed-rent basis and/or a variable-rent basis based on a percentage of gross sales) those firms for carrying out commercial activities in a specific allocated area at the airport.[648] Nevertheless, the airport operator can also engage directly in some of these services (e.g. car parks).

As mentioned in section 2.1, commercial activities have become increasingly more relevant for airports' revenue in the past few decades, in light of the trend towards more commercially oriented airports. Indeed, airports are no longer regarded as mere providers of infrastructure for airlines, but rather sophisticated market entities with diversified revenue streams. Each airport has a particular set of commercial activities that addresses demand and capitalises specific market opportunities, being much more diversified than aeronautical services. Therefore, non-aeronautical revenues became an integral part of the airport business and an important element for passenger experience. While aeronautical revenue has traditionally served as the primary income source of airports, currently many airports globally

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[645] OECD. *OECD Competition Assessment Reviews: Brazil.* p. 111-114.

[646] As also mentioned previously, defining the precise boundaries of non-aeronautical services can be challenging, as they may sometimes encompass certain aeronautical services provided by third parties. For example, the Brazilian regulatory framework distinguishes between tariff and non-tariff revenues. Tariff revenues cover services remunerated through airport charges, while non-tariff revenues refer to any other activities, which include commercial services as well as some aeronautical services, namely ground handling services and the lease of hangars and other airport spaces by airlines (OECD. *OECD Competition Assessment Reviews: Brazil.* p. 69). This section will only focus on commercial services.

[647] In the context of airports, the terms "commercial concession", "rent" and "lease" are often used interchangeably (VOJVODIĆ, Katija. Airport concessions. *Ekonomska misao i praksa*, v. 17, n. 1, 2008. Available at: https://hrcak.srce.hr/26362. p. 97).

[648] NEUFVILLE, Richard de; ODONI, Amedeo; BELOBABA, Peter; REYNOLDS, Tom. *op. cit.* pp. 230.

generate more revenue from commercial activities than from airport charges.[649] In 2019, non-aeronautical services accounted for around 40% of airports' total gross revenue worldwide.[650]

Non-aeronautical revenues are often used as an indicator of productivity performance of airports. Indeed, airports implementing proactive commercial opportunity programmes usually have more efficient productivity management compared to airports that strongly rely on aeronautical revenues.[651]

Brazilian airports have been following this international trend, especially as a result of the airport concession programme. Non-aeronautical revenues represented 34% of total revenues of Brazilian airports before the introduction of concessions, suggesting that commercial activities were underexploited by Infraero. With concessions, private operators invested in fostering commercial services, leading to larger percentages of non-aeronautical revenues vis-à-vis airports' total revenues. For example, at São Paulo/Guarulhos airport, two years after the beginning of the concession, non-aeronautical revenues accounted already for more than 50% of the airport's total revenue.[652]

3.4.1 Regulation of airport commercial services

As explained in section 2.4, airports are considered to hold a dominant position in the provision of aeronautical services and therefore economic regulation is commonly introduced to prevent these players from abusing their market power. However, it is less straightforward that airports have market power in other activities provided at the airport, such as commercial services.[653]

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[649] ATRS. *op. cit.*; NEUFVILLE, Richard de; ODONI, Amedeo; BELOBABA, Peter; REYNOLDS, Tom. *op. cit.* pp. 229; OUM, Tae H.; FU, Xiaowen. *op. cit.* pp. 37-38; LIOUTOV, Ilia. ACI World's new sub-committee devoted to the non-aeronautical side of the airport business. *ACI World*, 25 March 2021. Available at: https://blog.aci.aero/aci-worlds-new-sub-committee-devoted-to-the-non-aeronautical-side-of-the-airport-business/; LUCAS, Patrick. Non-aeronautical revenues: Diversify and grow. *Airport World*, 30 May 2022. Available at: https://airport-world.com/non-aeronautical-revenues-diversify-and-grow/. For example, in 2017, non-aeronautical services represented on average 54% of the revenue for Oceanian airports, 51% for North American airports, 51% for Asian airports and 41% for European airports (ATRS. *op. cit.* p. I-29).

[650] WOENSEL, John van; BEACH, Tracy; MEJIA, Marco. Fuelling Airport Recovery Via Non-Aeronautical Revenue. *WPS*, 27 May 2021. Available at: https://www.wsp.com/en-gl/insights/fuelling-airport-recovery-via-non-aeronautical-revenue.

[651] ATRS. *op. cit.* p. 4-71.

[652] RESENDE, Caio; CALDEIRA, Thiago. *op. cit.* pp. 743-745.

[653] GILLEN, David W.; MORRISON, William. Airport Pricing, Financing and Policy: Report to National Transportation Act Review Committee. In FORSYTH, Peter; GILLEN, David W.; KNORR, Andreas; MAYER, Otto G.; NIEMEIER, Hans-Martin; STARKIE, David (ed). *The Economic Regulation of Airports: Recent Developments in Australasia, North America and Europe*. London and New York: Routledge, 2004. p. 107.

Accordingly, one important element of economic regulation of airports concerns the regulatory till, which determine whether non-aeronautical activities fall under the scope of price control. In the single-till system both aeronautical and non-aeronautical revenues are placed against one single cost base for setting airport charges. Conversely, in the dual-till system aeronautical and non-aeronautical revenues are split into two different cost centres. Only aeronautical revenues are taken into account to define aeronautical charges, the airport operator more commonly being free to set prices for non-aeronautical services. In other words, under the single-till approach commercial activities are subject to economic regulation, while under the dual-till regime such activities are not covered by price control. In hybrid-till systems both models are merged, and only some non-aeronautical services are considered when setting airport charges.[654]

On the one hand, it is argued that the single-till system would be more appropriate as it guarantees that airport operators gain a reasonable return on total assets and prevents them from exploiting their market power, which could also occur vis-à-vis non-aeronautical services through monopolistic pricing. Additionally, the single-till model incentivises the airport operator to reduce costs on both the aeronautical and non-aeronautical sides. Airlines also assert that there is an interconnection between the passengers they bring to the airport and the non-aeronautical revenues these passengers generate for the airport operator, therefore deserving a share of the benefits – although in practice the airport operator handles the investments and contracts themselves, taking the risk of the activity. Furthermore, the single-till approach is believed to result in lower airport charges, since they are cross-subsidised by commercial revenues, reducing airlines' costs and, at least in theory, airfares for passengers. Nonetheless, implementing a single-till approach does not necessarily mean that prices of commercial services at the airport will be reduced, but rather that these activities will directly finance aeronautical services.[655]

On the other hand, it is argued that the dual-till model is more appropriate since economic regulation should only address the activities in which airports have market power. This would be the case of aeronautical services, the core business of airports, but not of non-aeronautical activities. In fact, non-aeronautical services would be contestable activities run at

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[654] ACI EUROPE. *Behind the Regulatory Till Debate - Ensuring that Airports Have the Right Tools to Deliver Capacity and Service in the Air Transport Ecosystem*. 2018. Available at: https://www.aeroport.fr/uploads/documents/telecharger-le-document-en-anglais.pdf?v12.2. pp. 2-5.

[655] IATA. *Economic Regulation: The case for independent economic regulation of airports and air navigation service providers*. pp. 28-29; NEUFVILLE, Richard de; ODONI, Amedeo; BELOBABA, Peter; REYNOLDS, Tom. *op. cit.* pp. 201; GILLEN, David W.; MORRISON, William. *op. cit.* p. 108.

a commercial basis,[656] which should be subject to ordinary market dynamics. Moreover, the dual-till system gives airport operators more incentives to invest into commercial developments and achieve greater dynamic efficiency in the provision of non-aeronautical services, as they take the rewards of such investments, albeit bearing all associated risks. However, this might occasionally pose a risk of lower quality standards of aeronautical activities. Additionally, the dual-till approach boosts government revenues from the lease or sale of airports. Under this system, non-aeronautical revenues can also be used to reduce aeronautical charges, with the aim of attracting more passengers and airlines, especially when the airport face at least some degree of competition.[657]

Regardless of adopting a single- or dual-till approach, airport commercial services, especially in the airside, are inherently expensive worldwide. Some argue that the profits derived from such activities are a result of the premium location airports offer for such business.[658] Additionally, commercial firms operating within airports typically face higher operating costs compared to off-airport business, for example due to security checks that goods and employees must be subject to.[659]

Nevertheless, high prices can also be, at least partially, attributed to limited competition. While in many jurisdictions (e.g. the European Union and Brazil) the risk of abusive practices is addressed through *ex-post* competition or consumer protection enforcement,[660] some countries adopt a more interventionist approach, such as price regulation.

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[656] Several commercial (especially landside) activities also compete with players operating outside the airport, such as car parks, car rentals, hotels, office rentals and conference facilities. For this reason, in some jurisdictions only commercial airside services are regulated. For instance, this is the case in Portugal, which adopts a hybrid-till approach where only airside retail services are subject to regulation (Annex 12 to the concession contract comprising eight Portuguese airports (Lisbon, Porto, Faro, Beja, Ponta Delgada, Horta, Flores and Santa Maria), signed in December 2012 between Portugal and *ANA - Aeroportos de Portugal, S.A.)*.

[657] ACI EUROPE. *Behind the Regulatory Till Debate - Ensuring that Airports Have the Right Tools to Deliver Capacity and Service in the Air Transport Ecosystem.* pp. 5, 11; MARQUES, Rui Cunha; BROCHADO, Ana. *op. cit.* p. 167; IATA. *Economic Regulation: The case for independent economic regulation of airports and air navigation service providers*. p. 29; OECD. *OECD Competition Assessment Reviews: Brazil*. p. 69; ICAO. *Economics of Airports.* Worldwide Air Transport Conference (ATCONF) Sixth Meeting, Montréal, 18 to 22 March 2013. Available at: https://www.icao.int/meetings/atconf6/documents/workingpapers/atconf.6.wp.088.2.en.pdf. p. 4.

[658] NEUFVILLE, Richard de; ODONI, Amedeo; BELOBABA, Peter; REYNOLDS, Tom. *op. cit.* pp. 202.

[659] POLLACK, Vanderlei J. Why are Things so Expensive in Airports? *Tourism Review*, 1 September 2023. Available at: https://www.tourism-review.com/dining-expensive-in-airports-news13602; KYLIE, Bynicole. The Reasons Behind The High Cost Of Food & Drink At Airports. *Simple Flying*, 25 May 2023. Available at: https://simpleflying.com/airport-food-drink-high-cost-explanation/.

[660] For instance, COFECE is currently investigating potential monopolistic practices in the market for access to commercial spaces and the provision of commercial services at airports in the southern and southeastern regions of Mexico (COFECE. *Cofece investiga posibles prácticas monopólicas relativas en el mercado de acceso a espacios comerciales y prestación de servicios comerciales en los aeropuertos del sur - sureste de México*. Cofece-016-2022. 18 May 2022. Available at: https://www.cofece.mx/cofece-investiga-posibles-pmr-en-el-acceso-a-espacios-comerciales-en-aeropuertos-del-sur/).

This is the case in the United States, where airport commercial concession contracts usually require companies to sell products at "street pricing".[661] For example, the operator of New York airports imposes on airport concessionaires a "street pricing policy", according to which their prices are capped at local, off-airport "street prices" plus a maximum surcharge of 10%. The regulation also details how to calculate product prices based on comparable area averages. Airport prices are routinely monitored to ensure they are in line with the regional marketplace, and enforcement actions are taken in case of non-compliance.[662]

However, price regulation also has its risks and costs. For instance, establishing maximum prices can reduce the incentives for companies to innovate by offering new and/or high-quality products. Maximum prices can also facilitate price co-ordination among competitors. In addition, price regulation has high administration and enforcement costs.[663]

Besides the debate on whether non-aeronautical activities should be subject to economic regulation, other regulatory aspects of commercial activities are discussed to address potential competition issues in this market. For instance, they concern the process for selecting commercial suppliers, the duration of commercial concessions and the use of exclusivity clauses.

By selecting the providers of commercial services through competitive tenders, airport operators can ensure competition for the market, as competition in the market can be limited or non-existent, mostly due to space constraints. Even if not always required by legislation, the use of competitive tenders is a common market practice to award commercial concession contracts worldwide.[664]

In addition, long commercial concession contracts can prevent competition for the market from occurring more often, limiting competitive pressure towards incumbents and the timely entry of more efficient players. Accordingly, it is suggested that regulations require

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[661] FINK, Bill. New airport 'street pricing' models taking a bite out of high food costs. *The Points Guy*, 1 June 2022. Available at: https://thepointsguy.com/news/pricey-airport-food/.

[662] PORT AUTHORITY OF NEW YORK AND NEW JERSEY AVIATION DEPARTMENT. *Concessionaire Street Pricing Standards and Procedures Manual*. 2022. Available at: https://www.panynj.gov/content/dam/airports/pdfs/concessionaire-street-pricing-manual.pdf. Given the high prices of airport products, these policies tend to be very popular and from time to time they are brought up for debate in jurisdictions adopting a more liberal approach (see, for example, FARSACI, Liz. Irish MEP launches bid to ground airport prices. *The Sunday Times*, 18 July 2016. Available at: https://www.thetimes.co.uk/article/irish-mep-launches-bid-to-ground-airport-prices-ldvf2m6gq).

[663] OECD. *Competition Assessment Toolkit - Volume 1: Principles.* Paris: OECD Publishing, 2019. Available at: https://www.oecd.org/daf/competition/46193173.pdf. p. 14.

[664] MARQUES, Rui Cunha; BROCHADO, Ana. *op. cit.* p. 167.

concession contracts to have short lease terms, unless they impose minimum investments to be made. In these cases, the length of the contracts should be associated with the investments.[665]

Moreover, ensuring competition in the market is always preferable, allowing consumers to reap its benefits, including more choices, lower prices and improved quality. In this context, it is better to have two or more providers of the same type of activity (e.g. fast food restaurants or car rental shops) than just one.[666]

Therefore, exclusivity contracts, through which competitors of the incumbent are prevented from entering the airport, can be problematic, although they can sometimes be justified on economic grounds, especially depending on the type of activity and the necessary incentives for investment.[667]

Absent regulation, such contracts have already raised competition concerns regarding market access at airports. For example, a market study conducted by the Korean competition authority in 2012 identified that after the airport awarded an exclusivity contract for a company to sell duty-free liquor and tobacco, the price of these products increased substantially. The competition authority recommended the airport operator to allow more firms to operate duty-free liquor and tobacco shops at the airport, similarly to what already occurred for cosmetics and electronics.[668]

Other examples concern the operation of bus services from the airport terminal to the city centre in both London and Mexico City. In 2022, COFECE sanctioned the manager of Mexico City International Airport for refusing to give a bus company, without any reasonable justification, a permission to operate to and from the premises of the airport. The airport operator had established exclusive advantages in favour of two permit holders on the same route, preventing competition to the detriment of users.[669]

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[665] OECD. *OECD Competition Assessment Reviews: Iceland*. Paris: OECD Publishing, 2020. Available at: www.oecd.org/daf/competition/oecd-competition-assessment-reviews-iceland.htm. p. 174.
[666] MARQUES, Rui Cunha; BROCHADO, Ana. *op. cit.* p. 167.
[667] OECD. *OECD Competition Assessment Reviews: Brazil.* p. 71.
[668] OECD. *Competition Assessment Toolkit - Volume 3: Operational Manual.* Paris: OECD Publishing, 2019. Available at: https://www.oecd.org/daf/competition/COMP_Toolkit_Vol.3_ENG_2019.pdf. p. 95.
[669] COFECE. *Cofece multa al AICM por impedir a un agente económico la prestación de servicio público de autotransporte federal y establecer ventajas exclusivas en favor de dos permisionarios*. Cofece-011-2022. 24 March 2022. Available at: https://www.cofece.mx/multa-al-aicm-por-impedir-prestacion-de-servicio-publico-de-autotransporte/?lang=en. Moreover, COFECE sanctioned in 2016 and 2019, respectively, two abuse of dominance cases concerning the market of access to Mexico City (AICM) and Cancun airports for the provision of taxi services to and from those airports. According to COFECE, the airport operators favoured incumbent taxi providers, thereby distorting competition (MEXICO. *Competition and Regulation in the Provision of Local Transportation Services – Note by Mexico*. OECD Working Party No. 2 on Competition and Regulation, 2022. Available at: https://one.oecd.org/document/DAF/COMP/WP2/WD(2022)5/en/pdf. pp. 9-11).

Likewise, in 2014 the UK High Court of Justice concluded that the operator of London/Luton airport had abused its dominant position by awarding a bus company a seven-year exclusive contract for the operation of bus services from the airport to London/Victoria coach station, also giving that company a right of first refusal over new routes between the airport and other destinations.[670]

3.4.2 Commercial services at Brazilian airports

In Brazil, airport commercial activities are not subject to economic regulation, but competition law still applies to such activities. As mentioned in section 2.4.2, Brazil adopts a dual-till system, and non-aeronautical revenues are not considered by ANAC when it sets airport charges. Thus, airport operators have strong incentives to invest in commercial activities, which has indeed occurred in practice especially since the beginning of the airport concession programme. Airport operators have increased the variety and quality of commercial services, for instance by building new car parks, expending shopping centres, duty-free shops and food places, as well as increasing indoor and outdoor advertising spaces.[671]

Airport operators are free to negotiate concession contracts with third parties for the provision of commercial services, including the remuneration prices and other conditions. The relationship between airport operators and commercial service providers is governed by private law, but all parties must comply with the civil aviation regulation, particularly as regards aviation security and the prohibition of discriminatory and abusive practices.[672]

The only restriction established by regulation concerns the duration of commercial concession contracts, which must not be longer than the concession. Nevertheless, there are no specific criteria to guide how to establish a given contract length. Exceptionally and if authorised by the government, commercial concession contracts can be even longer than the duration of the concession, if this is necessary for their economic feasibility.[673]

Airport operators are also free to establish how commercial service providers are selected and there is no regulatory requirement imposing the use of open competitive tenders,

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[670] OECD. *Competition for-the-market, OECD Competition Policy Roundtable Background Note*. Paris: OECD Publishing, 2019. Available at: https://one.oecd.org/document/DAF/COMP/GF(2019)7/en/pdf. p. 29.
[671] RESENDE, Caio; CALDEIRA, Thiago. *op. cit*. p. 745.
[672] Article 25, paragraphs 1 and 2, of Law No. 8.987/1995; Article 1, paragraphs 1 and 2, and Article 13 of Resolution ANAC No. 302/2014; item 11.1 of the airport concession contracts.
[673] LONGO, Daniel Ramos; FONSECA, Ricardo Sampaio. *op. cit.* pp. 392-394; OECD. *OECD Competition Assessment Reviews: Brazil.* p. 70.

although this can happen.[674] Furthermore, airport operators have the freedom to define the optimal tenant mix at the airport – including categories of services and specific providers, such as well-known chain franchises – to improve the passenger experience and increase non-aeronautical revenues. Exclusivity contracts with specific providers are therefore possible at the discretion of airport operators. In any case, ANAC has the power to request information of commercial contracts at any time to assess the market,[675] but this is not a common practice.[676]

In addition, airport concession contracts establish a set of service quality indicators that must be evaluated through consumer surveys. These indicators vary across contracts, but some are associated with commercial services, such as quality, variety and value for money of restaurants, retail shops and car parks. If any indicator shows poor performance, the concessionaire must undertake corrective actions, which may include staff training and procedural changes. In certain concession contracts, some indicators related to commercial services are also considered as a quality factor (Factor Q), which is used to increase or reduce airport charges' caps, according to the performance results reported by the airport. This represents an additional incentive for the airport operator to ensure a competitive environment in the market for airport commercial activities, as it is likely to lead to higher quality and more affordable services.[677]

According to ANAC, airport operators are in the best position, given their technical expertise and access to information, to determine the optimal tenant mix and conditions for commercial concession contracts. Furthermore, as mentioned above, airport operators have an interest in maintaining a competitive market, with a variety of options, as well as high quality and affordable prices, ultimately resulting in increased non-aeronautical revenues – which, for instance, has been observed in practice[678]. Lastly, ANAC believes that the regulatory costs

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[674] See, for example, ROZARIO, Kevin. "The biggest commercial airport tender in Brazil this year" is launched in Florianópolis. *The Moodie Davitt Report*, 18 October 2018. Available at: https://www.moodiedavittreport.com/the-biggest-commercial-airport-tender-in-brazil-this-year-is-launched-in-florianopolis/. Only for airports managed by Infraero providers must be selected through a public tender process, considering the public procurement regime for SOEs, as per Law No. 13.303/2016 and Law No. 5.862/1972.

[675] Item 11.1.7 of the concession contracts of the second and third rounds; item 11.1.6 of the concession contracts since the fourth round.

[676] OECD. *OECD Competition Assessment Reviews: Brazil.* pp. 70-71.

[677] Service quality indicators are governed by Annex 2 to the concession contracts (Airport Exploration Plan or PEA). See also SILVA, Priscilla Thábata Alves da. *op. cit.*

[678] Nonetheless, product prices at Brazilian airports are often criticised, especially vis-à-vis off-airport prices. See, for example, GUZANSHE, Alexandre; COSTA, Mariana. Preços de estacionamentos e alimentos no aeroporto de BH geram reclamações. *Estado de Minas*, 26 April 2023. Available at: https://www.em.com.br/app/noticia/economia/2023/04/26/internas_economia,1486194/precos-de-estacionamentos-e-alimentos-no-aeroporto-de-bh-geram-reclamacoes.shtml; DIÁRIO DO NORDESTE. *Do cafezinho à batatinha: por que os preços são mais caros no aeroporto que supermercado?* 17 November 2022. Available at: https://diariodonordeste.verdesmares.com.br/negocios/do-cafezinho-a-batatinha-por-que-os-precos-

associated with intervening in this market would not be justified, especially since these activities are not the airport's core business, which should remain the regulator's primary focus. Thus, ANAC has chosen not to regulate airport commercial activities, leaving potential issues to be addressed through competition and/or consumer protection enforcement.[679]

3.5 Conclusion of Chapter 3

In addition to competition between airports, competition regarding activities within an airport is also a relevant element for guaranteeing efficient civil aviation activities. For instance, congested airports must develop a system for granting access to airlines willing to operate at these airports. Slot allocation is the most common mechanism employed worldwide to assign scarce capacity, aiming at allocating slots to the airlines that can use them to the greatest benefit of aviation users. Nonetheless, this method primarily relies on grandfather rights, which may hinder new entry, distorting competition. Besides limiting slot mobility, this system also encourages incumbent airlines to inefficiently use airport infrastructure to maintain historic slots and prevent competing carriers from entering (or expanding their activities in) the market.

In this context, different regulatory alternatives have been proposed to improve the current framework, enhancing competition at congested airports and within the civil aviation industry as a whole. These options range from specific changes to the slot allocation system (such as modifying co-ordination parameters, establishing a cap of slots per airline, setting expiry dates on grandfather rights or allowing a secondary market for slot trading) to more disruptive mechanisms, such as introducing congestion pricing or slot auctions. While there is no perfect solution to address capacity constraints, this discussion underscores the importance of incorporating competition into the design and enforcement of airport regulation to guarantee the optimal functioning of the market.

Ground handling services is another critical market within airports where significant competition concerns have been raised, especially as regards market access. In many jurisdictions this market has historically been monopolised, but in recent years liberalising

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sao-mais-caros-no-aeroporto-que-supermercado-1.3301406; SCIREA, Bruna. Cerveja de R$ 140 reacende debate sobre preço da alimentação nos aeroportos. *Melhores Destinos*, 6 August 2021. Available at: https://www.melhoresdestinos.com.br/precos-comidas-aeroportos.html; GUARULHOS HOJE. *Comida no aeroporto custa mais do que o dobro da rodoviária da cidade*. 22 August 2019. Available at: https://www.guarulhoshoje.com.br/2019/08/22/comida-no-aeroporto-custa-mais-do-que-o-dobro-da-rodoviaria-da-cidade/.

[679] PEREIRA, Tiago Sousa. *Observatório da Concorrência IBRAC-CADE-OCDE Avaliação Concorrencial dos setores de Portos e Aviação*, 3 March 2023. Available at: https://www.youtube.com/watch?v=PQLAvyNZeFY.

reforms have been implemented to enhance competition and provide airlines with a greater choice of suppliers, improving efficiency, reducing operating costs and increasing service quality.

On-airport jet fuel supply is a ground handling service where competition concerns have been particularly frequent, since jet fuel represents one of the largest operating costs of airlines and its delivery involves complex and expensive infrastructures, such as storage facilities and, in many airports, hydrant systems. Regulation can therefore be a valuable tool for ensuring access to newcomers, fostering competition in this market, and ultimately resulting in overall benefits for consumers.

Finally, commercial services provided at airports are more and more important for airports' revenue, serving as an indicator of airports' productivity performance. Non-aeronautical services are frequently not subject to economic regulation, as they are regarded as contestable activities run on a commercial basis. While airport commercial services are typically very expensive – sometimes also due to a lack of competition –, the risk of abusive practices is more commonly addressed through competition and/or consumer protection enforcement. However, some jurisdictions have opted for price regulation to ensure that prices at the airport are not significantly higher than off-airport, although this approach also entails risks and costs. Alternatively, less restrictive regulatory measures have been designed to address these concerns.

Ensuring competition within airports is crucial for the well-functioning of the airport sector and, consequently, the civil aviation industry. Airport regulation can sometimes unduly hinder competition by favouring incumbent firms to the detriment of other market players. Nevertheless, if well designed and implemented, airport regulation can play a pivotal role in promoting competition, complementing competition law enforcement to bring about new players, lower prices and better services.

4. SHAPING AIRPORT REGULATION THROUGH COMPETITION POLICY

As described in Chapter 1 and illustrated in Chapters 2 and 3 as regards the airport sector, competition law and sector regulation are often interconnected and complementary tools of market intervention. In this sense, these two mechanisms have a synergic relationship, influencing substantially each other. On the one hand, sector regulation outlines the scope of the application of competition law, but also the way competition law is enforced. On the other hand, competition law can lead to the adoption, reform or elimination of sector regulation.[680]

Indeed, sector regulation significantly affects competition enforcement. The most obvious example concerns express immunities, through which a given sector, specific entities or particular conducts are removed from the scope of application of competition law. Likewise, as mentioned in section 1.3.2, the regulated conduct defence can shield business conduct from competition enforcement. This means that sometimes sector regulation imposes over competition, preventing or limiting the scope of competition enforcement in regulated sectors.

Apart from these more evident examples, deregulatory and liberalising reforms also impact competition enforcement. These reforms are usually long and gradual processes, in which the scope of regulation is progressively reduced, although it may not necessarily disappear. For example, some regulatory constraints and obligations may be removed (like price controls, entry or exit restrictions or mandatory access requirements), while other regulatory mechanisms remain in place (for example, for market segments that are still uncompetitive or less intrusive regulatory tools). When regulatory oversight diminishes, competition enforcement becomes more relevant, acting as a supplement to sector regulation. In fact, deregulation increases the probability of gaps to be filled by competition enforcement.[681]

The way competition law is enforced in regulated markets is also different when compared to non-regulated markets. What is efficient and acceptable in an unregulated market may not be the same in a regulated sector. Moreover, regulation impacts on the economic structure and the terms on which market participants interact. It may be more challenging for competition authorities, for example, to establish market power, to demonstrate the link between the competitive effects and the defendant's conduct, as well as to design appropriate

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[680] OECD. C*ompetition Enforcement and Regulatory Alternatives.* p. 23.

[681] KAHN, Alfred. Deregulatory Schizophrenia. *California Law Review*, v. 75, n. 3, 1987. Available at: https://www.jstor.org/stable/3480667. p. 1059; SHELANSKI, Howard A. Justice Breyer, Professor Kahn, and Antitrust Enforcement in Regulated Industries. *California Law Review*, v. 100, n. 2, 2012. Available at: https://www.jstor.org/stable/23239886. p. 493; DUNNE, Niamh. *Competition Law and Economic Regulation.* pp. 148-149; SHELANSKI, Howard A. Antitrust and Deregulation. pp. 1928-1930.

remedies. Therefore, considering the particularities of the sector in question is substantially more relevant when assessing regulated markets. [682]

Finally, competition law enforcement can also borrow some elements from regulation. In fact, there has been an emergence of so-called competition regulatory hybrids[683] or regulatory competition law,[684] referring to situations in which competition law departures from its conventional legalistic model and incorporates certain procedures or substantive characteristics usually related to sector regulation. These include (i) administrative/technocratic rather than adversarial/judicial implementation; (ii) *ex-ante* enforcement; (iii) detailed positive obligations on market players; (iv) static, regulatory-type remedies requiring continuing monitoring; and (v) attempt to achieve the most pro-competitive market results, rather than merely preventing anti-competitive practices.[685]

Examples of procedural regulatory competition law are market studies, negotiated settlements (in both merger and anti-competitive enforcement) and prescriptive remedies requiring ongoing implementation and monitoring, such as line of business restrictions. Regulatory competition law has also emerged in a substantive dimension, for instance regarding excessive prices and essential facilities doctrines.[686]

Competition law, in both enforcement and advocacy dimensions, can also influence sector regulation. As previously stated, although in most deregulatory initiatives sector regulation tends to be replaced by competition law oversight, the adoption of sector regulation can also result from competition law enforcement. Indeed, competition law can help shape regulation. Frequent competition law complaints or investigations in unregulated markets or those undergoing deregulation often stimulate other regulatory responses by identifying the existence of market failures that could be better addressed through sector regulation. In

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[682] BREYER, Stephen G. Antitrust, Deregulation, and the Newly Liberated Marketplace. *California Law Review*, v. 75, v. 3, 1987. Available at: https://lawcat.berkeley.edu/record/1112872. pp. 1011-1012; SHELANSKI, Howard A. The Case for Rebalancing Antitrust and Regulation. *Michigan Law Review*, v. 109, n. 5, 2011. Available at: https://repository.law.umich.edu/mlr/vol109/iss5/1/. p. 700; DUNNE, Niamh. *Competition Law and Economic Regulation.* pp. 229-230; OECD. C*ompetition Enforcement and Regulatory Alternatives.* pp. 32-33.

[683] OECD. C*ompetition Enforcement and Regulatory Alternatives.* p. 38.

[684] DUNNE, Niamh. *Competition Law and Economic Regulation.* p. 69.

[685] *Ibid.* pp. 79 ff. In this context, it is argued that competition law provisions allow significant scope and a large margin of discretion for developing the substance of these rules through their application. This flexibility enables the development of regulatory competition law. Furthermore, incorporating quasi-regulatory elements within competition law is also justified as a way of increasing its effectiveness to correct and deter socially harmful market arrangements. Nevertheless, regulatory competition law faces significant criticism, for instance for allegedly violating the separation of powers. In addition, it is asserted that regulatory competition law lacks legitimacy and fails to comply with the rule of law. Critics also argue that it increases Type I errors (false positives) and results in inefficient and counterproductive market outcomes, besides making competition law more vulnerable to political pressures and influence (DUNNE, Niamh. *Competition Law and Economic Regulation.* pp. 87-97).

[686] *Ibid.* pp. 97 ff.; OECD. C*ompetition Enforcement and Regulatory Alternatives.* pp. 39-43.

addition, competition law can be used as an instrument to regulate the market where sector regulation does not exist or is not working appropriately. Nonetheless, competition law enforcement tends to be piecemeal, focusing on one or several conducts in isolation, without considering their broader significance for the functioning of a given market. Isolated actions, without taking into account a holistic view, can sometimes not be able to address appropriately a market failure. Thus, sector regulation may give a more comprehensive and effective way of remedying the issue, also ensuring that all market players are subject to the same rules.[687]

Competition law can also influence the content of regulation and provide a push for a more pro-competitive legal framework. There has been a closer alignment between principles of competition and regulatory policies in many sectors, through which sector regulation incorporates competition concepts, with a more rigorous, thoughtful and economics-based approach. For example, some regulatory frameworks impose that sector regulators define relevant markets and assess dominance to establish whether a given market deserves regulation and to what extent.[688] For instance, this is typically the case in the airport sector, where civil aviation regulators assess market power of airports to establish whether (and what type of) economic regulation is required for airport charges. Furthermore, previous competition enforcement experiences may inspire the substance of regulation. For examples, remedies adopted by competition authorities may be used by regulators when developing sector regulation.[689]

Incorporating more competition elements within sector regulation can also be advanced by advocacy initiatives. In fact, competition authorities, sector regulators and other government bodies can encourage pro-competitive reforms in regulated markets, aiming at creating or fostering a competition culture in these markets. Carrying out pro-competitive evaluations, as

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[687] MONTI, Giorgio. *Excessive pricing: Competition Law in Shared Regulatory Space*. TILEC working paper, 2019. Available at: https://www.tilburguniversity.edu/sites/default/files/download/Monti%20Excessive%20pricing.pdf. pp. 2-5, 16; HELLWIG, Martin. *op. cit.* p. 210; OECD. C*ompetition Enforcement and Regulatory Alternatives.* p. 24; GARZANITI, Laurent. *Telecommunications, Broadcasting and the Internet: EU Competition Law and Regulation.* London: Sweet & Maxwell, 2003. p. 545; COLOMO, Pablo Ibáñez. Regulatory and Antitrust Remedies in EU Competition Law. In GERARD, Damien; KOMNINOS, Assimakis (ed.). *Remedies in EU Competition Law: Substance, Process and Policy*. Alphen aan den Rijn: Kluwer Law International, 2022, p. 77.

[688] DUNNE, Niamh. *Competition Law and Economic Regulation.* pp. 169-171; MOODALIYAR, Kasturi; WEEKS, Keith. A framework for promoting competition in electronic communications: clarifying the role of the competition authorities and the sector regulator. In MOODALIYAR, Kasturi; ROBERTS, Simon (ed.). *The development of competition law and economics in South Africa*. Cape Town: HSRC Press, 2012. p. 19.

[689] MONTI, Giorgio. *op. cit.* pp. 4-5; OECD. C*ompetition Enforcement and Regulatory Alternatives.* pp. 29-30.

well as quantifying the benefits of regulatory reforms are relevant tools to assist regulators, legislators and other policy makers in pursuing that goal.[690]

In this context, this chapter examines how competition law can influence regulation, with a focus on the airport sector. As described in Chapters 2 and 3, despite numerous reforms implemented in the airport industry over the last few decades, the regulatory framework still presents various shortcomings, suggesting that there is room for improvements by further embedding competition policy into airport regulation. As suggested below, this can be achieved through joint and co-ordinated efforts of competition authorities, civil aviation regulators and other policy makers.

4.1 Shaping pro-competitive regulation through competition law enforcement

As mentioned above, competition law enforcement can play a pivotal role in advancing pro-competitive regulation, either through merger control or the fight against anti-competitive behaviour. The following sections discuss in more details how this can be achieved, providing concrete examples from the airport sector.

4.1.1 Merger remedies

When competition authorities analyse mergers and impose remedies, they often include elements impacting the regulatory framework, especially in markets with a tendency towards monopoly, such as regulated sectors.[691] Indeed, competition authorities have applied remedies, commonly with prescriptive nature aiming to mimic regulatory regimes, in merger reviews when sector regulation has revealed insufficient to prevent anti-competitive conduct or effects.[692]

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[690] OECD. *The Relationship between Competition Authorities and Sectoral Regulators*. OECD Global Forum on Competition Issues Paper. Paris: OECD Publishing, 2005. Available at: https://one.oecd.org/document/DAF/COMP/GF(2005)2/en/pdf. pp. 2-3, 10-12; OECD. *Interactions between competition authorities and sector regulators.* pp. 8-11; OECD. *Market Studies Guide for Competition Authorities*. Paris: OECD Publishing, 2018. Available at: https://www.oecd.org/daf/competition/OECD-Market-Studies-Guide-for-Competition-Authorities-2018.pdf. pp. 7-8, 25; ICN. *Advocacy Toolkit Part I: Advocacy process and tools*. Prepared by ICN Advocacy Working Group, Presented at the ICN 10th Annual Conference, The Hague, May 2011. Available at: https://www.internationalcompetitionnetwork.org/wp-content/uploads/2018/09/AWG_Toolkit1.pdf. pp. 5-6.

[691] COLOMO, Pablo Ibáñez. On the Application of Competition Law as Regulation: Elements for a Theory. *Yearbook of European Law*, v. 29, n. 1, 2010. Available at: https://academic.oup.com/yel/article/29/1/261/1618142. p. 268.

[692] OECD. C*ompetition Enforcement and Regulatory Alternatives.* p. 42.

Although this has not happened very often in the airport sector, there are some illustrative examples in the civil aviation industry more broadly, particularly involving airlines, with effects on airports. Mergers and alliances between airlines have, in fact, raised several competition and regulatory concerns, with remedies being applied by competition authorities worldwide, sometimes with regulatory elements.

For example, in the last decades, Brazil has experienced a process of consolidation of airlines, following an international trend in this regard, as mentioned in section 2.1, with many mergers and development of alliances. When assessing such transactions, CADE has indicated that access to airport infrastructure at co-ordinated airports (i.e. airport slots) is a substantial entry barrier. Given the limited number of available slots and the use of grandfather clauses for their allocation, newcomers frequently face significant obstacles to enter the market. Therefore, airport slots have been at the core of CADE's concerns in these transactions, justifying the imposition of remedies in some cases.[693]

Additionally, it is worth noting that until 2022 the Brazilian regulation prohibited slot trading,[694] and mergers were commonly used by airlines as a strategy to bypass that regulatory restriction. Accordingly, one of the primary objectives of mergers between airlines often included the acquisition of airport slots. The acquisition of Varig by Gol in 2007 is a landmark example in this regard.[695-696] In this context, through merger control, CADE has played an

[693] CADE. *Cadernos do Cade: Mercado de transporte aéreo de passageiros e cargas*. Brasília: CADE, 2017. Available at: https://cdn.cade.gov.br/Portal/centrais-de-conteudo/publicacoes/estudos-economicos/cadernos-do-cade/mercado-de-transporte-aereo-de-passageiros-e-cargas-2017.pdf. pp. 51, 72.

[694] This changed in 2022, when ANAC issued Resolution ANAC No. 682/2022, as described in section 3.1.

[695] In 2007, Gol (at the time an emerging Brazilian low-cost carrier) acquired the remaining profitable assets of Varig, including a substantial set of slots at São Paulo/Congonhas airport. Varig, once the largest Brazilian airline, had been facing serious financial problems over the preceding years. CADE's assessment focused on slots, especially at São Paulo/Congonhas airport. The conclusion was that although the transaction increased slot concentration at that airport, no remedies were necessary in this regard as the airfares charged by the airlines operating at the airport suggested that the market was competitive. In addition, CADE considered that Tam (Gol's main competitor) already held a significant number of slots at São Paulo/Congonhas airport, including the most profitable ones. CADE also noted that competing airlines had available capacity and could therefore effectively compete with Gol. The transaction was then approved without any slot-related remedies. The sole remedy imposed concerned the removal of a non-competition clause related to cargo transport, which was not considered part of the relevant market in question (Varig/Gol case, Merger file CADE No. 08012.003267/2007-14, decision of 25 June 2008).

[696] More recently, two mergers between airlines also focused on the acquisition of slots. When CADE assessed the acquisition of TwoFlex by Azul in 2020, it concluded that the number of slots to be held by the merging parties at São Paulo/Congonhas airport (i.e. 55 slots) was not significant, since the market was dominated by Gol and Latam, which concentrated most slots at that airport. The transaction was authorised without conditions (Azul/TwoFlex case, Merger file CADE No. 08700.001133/2020-70, decision of 26 March 2020). In 2021, Gol acquired MAP, which held 26 slots at São Paulo/Congonhas airport. CADE focused its assessment on the concentration of airport infrastructure resulting from the transaction at São Paulo/Congonhas airport. The main concern identified by CADE related to the increase of Gol's slots at that airport (from 44% to 48% of the total slots). However, CADE concluded that Gol's main competitors (Azul and Latam) had available capacity to divert demand from Gol in the event of a potential price increase. In addition, CADE noted that the 26 slots of MAP at São Paulo/Congonhas

important regulatory role in guaranteeing the functioning of this market. The remedies imposed on airlines intended to prevent further concentration and to ensure that the regulatory circumvention did not distort the level playing field. These cases also contributed to the change in the slot regulation by ANAC in 2022, which recognised that slot trading was already a reality through mergers and acquisitions. Therefore, ANAC considered it preferable to introduce this mechanism into the regulation and establish conditions to prevent its misuse.[697]

For example, in the 2011 merger between Chilean LAN and Brazilian TAM (forming LATAM, the largest airline company in Latin America),[698] CADE was particularly concerned about the São Paulo-Santiago route. This was the only overlapping route where the merging parties might not face competition, notably in light of constraints on access to São Paulo/Guarulhos airport due to limited slot availability for competing airlines. According to CADE, it was necessary to assess not only the concentration of the routes affected by the transaction but also the concentration of airport infrastructure resulting from the merger.

CADE cleared the transaction subject to slot divestitures at São Paulo/Guarulhos airport. In particular, the merging parties were required to transfer, free of charge and for a period of three years (renewable once), two daily pair of slots – along with the necessary connected infrastructure – at commercially attractive times to another airline interested in starting to operate direct flight between São Paulo and Santiago. The remedy was designed to ensure the successful entry of a competing airline into the route in question and not only to diminish the dominance of the merging parties at the airport.[699-700]

In 2012, CADE reviewed the acquisition of Webjet (a Brazilian emerging low-cost airline) by Gol, which had 5.5% and 37.5% of domestic market share, respectively.[701] According to CADE, contestability would primarily come from existing airlines. Therefore, the

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airport had a provisional nature and could be reallocated in the future (which indeed occurred in 2022, when ANAC approved Resolution ANAC No. 682/2022, establishing that each airline could not hold more than 45% of all slots at São Paulo/Congonhas). CADE also took into account Gol's plans to offer new destinations and complementary routes to its network at São Paulo/Congonhas airport, as well as provide more seats per flight on certain routes previously operated by MAP, benefiting consumers. Thus, the transaction was cleared without remedies (Gol/MAP case, Merger file CADE No. 08700.003746/2021-22, decision of 30 December 2021).

[697] Director Tiago Sousa Pereira's vote, of 6 October 2021, Administrative Proceeding ANAC No. 00058.047435/2020-12.

[698] TAM/LAN case, Merger file CADE No. 08012.009497/2010-84, decision of 14 December 2011.

[699] It should be noted that the Chilean Competition Tribunal (TDLC) also reviewed the transaction and imposed similar remedies (Resolution TDLC No. 37 of 21 September 2011).

[700] Chilian Sky Airlines and Brazilian Gol eventually entered the São Paulo-Santiago route using the slots offered by Latam in 2014 (CAPA. *Chile-Brazil airline market poised for growth as Gol and Sky Airline break LAN-TAM's monopoly*. 10 July 2014. Available at: https://centreforaviation.com/analysis/reports/chile-brazil-airline-market-poised-for-growth-as-gol-and-sky-airline-break-lan-tam-monopoly-176664).

[701] Gol/Webjet case, Merger file CADE No. 08012.008378/2011-95, decision of 10 October 2012.

competition assessment focused on congested airports, as airlines could only provide competing services at these airports if there was available infrastructure, namely airport slots.

Considering the structure of congested airports, only Rio de Janeiro/Santos Dumont raised relevant competition concerns, given the high concentration of slots without any efficiency indicator to address these issues. In fact, the existing regulation hindered the efficient use of airport infrastructure, which could be used by the merging airlines to prevent competitors from entering into (or expanding their presence at) the market, for instance through "slot hoarding" behaviour.

To address these concerns, a behavioural remedy was designed to guarantee that the privileged access that the merging parties had to the infrastructure of Rio de Janeiro/Santos Dumont airport was used efficiently for the benefit of consumers. In particular, CADE imposed that the post-merger airline must use its slots at that airport at least 85% of the time. This minimum 85% usage rate applied to all slots the firm held at the airport, including those acquired after the transaction. Every three months, an assessment would be conducted and if the airline failed to meet the minimum usage rate for a given slot, it was to be returned to ANAC, along with an additional slot to ensure a pair of slots for a competitor. It should be noted that the existing slot regulation mandated a minimum slot usage of 80% in order to ensure historic precedence in the next equivalent season. Therefore, the remedy imposed by CADE aimed to strengthen the regulation and further guarantee the efficient use of slots, preventing the airline from retaining idle slots to impede entry. The remedy was valid for 4 years.

In 2013, CADE examined the merger between Azul and Trip, two mid-sized airlines with domestic market shares of 10% and 4.5%, respectively, at the time of the transaction.[702] While the merger led to the creation of a larger airline, enhancing the ability to compete with the two main Brazilian airlines (Gol and Latam), the merging parties directly competed on certain routes. Nonetheless, the overlapping routes primarily involved regional airports, with no capacity constraints and a high likelihood of entry, except for Rio de Janeiro/Santos Dumont airport.

Therefore, the main competition concern identified by CADE related to the high concentration of slots at that airport.[703] Once again, CADE approved the transaction subject to behavioural remedies, in line with those imposed in the Gol/Webjet case. That is, for a period

[702] Azul/Trip case, Merger file CADE No. 08700.004155/2012-81, decision of 6 March 2013.
[703] It is worth noting that a second competition concern identified by CADE related to a codeshare agreement between Trip and Latam, which had the potential to reduce competition since it would also involve Azul. To address this concern, CADE required the gradual elimination of the codeshare agreement.

of four years after the transaction, the post-merger entity would ensure the efficient use of its slots at Rio de Janeiro/Santos Dumont airport, at a level higher than mandated by regulation (i.e. 85%). Failure to comply with this requirement would result in the slot being returned to ANAC, along with an additional slot.

Another relevant transaction was examined by CADE in 2017, concerning a joint business agreement between LATAM, Iberia and British Airways.[704] The agreement referred to a metal-neutrality joint venture[705] involving air passenger and cargo transport between Europe and South America. In Brazil, the main competition concerns raised by the transaction related to the São Paulo-London routes, in which post-merger the members of the joint venture would hold a monopoly. In particular, CADE highlighted the slot constraints in London (especially at London/Heathrow airport), which would prevent entry. CADE cleared the transaction subject to a package of remedies to address these concerns.

The merging parties were required to lease, free of charge and for ten years, a daily pair of slots at London/Heathrow or London/Gatwick to a third air carrier. This intended to establish an alternative flight between São Paulo and London, ensuring that there would be another airline competing on price and quality with the members of the joint venture. Until the entry of a new carrier (or in case there was no interested airline to operate the route or if an airline entered the market but later exited), the merging parties committed to maintaining the annual capacity level (i.e. not to reduce the number of seats offered annually) on that route for a period of seven years. This behavioural remedy aimed at ensuring that, if the structural remedy failed, the monopolist would not exercise its market power.[706]

Furthermore, CADE determined that the merging parties should create two new international routes between Brazil and Europe, one of which should involve a Brazilian airport other than Rio de Janeiro/Galeão or São Paulo/Guarulhos. Such routes should be provided for

[704] TAM/Iberia/British Airways case, Merger file CADE No. 08700.004211/2016-10, decision of 8 March 2017.

[705] Metal neutrality joint ventures are comprehensive agreements for economic benefit sharing, through which each airline partner becomes indifferent to which airline actually transports the passenger. Such transactions provide many of the advantages associated with a merger (e.g. the elimination of double marginalisation, co-ordination of schedules and capacity, shared frequent flyer programmes and airfares, sharing of revenues and costs, and joint marketing) but are market specific, covering only a small part of the carriers' activities – although often the most relevant long-haul network of the airlines involved (ITF. *Liberalisation of Air Transport, ITF Research Reports*. p. 26).

[706] Besides the non-availability of slots at London/Heathrow airport, CADE also identified that potential competitors in international flights would face an addition entry barrier related to accessing a hub-and-spoke network in Brazil and Europe, required to provide connecting flights. This was essential since London and São Paulo are not the origin and destination of most passengers in this route. To address this competition problem, a behavioural remedy was imposed, requiring the merging parties to enter into an agreement with any potential competitor that started operating the São Paulo-London route, in order to ensure connections from London to other European destinations and from São Paulo to other Brazilian destinations.

at least seven years and with a minimum frequency of three times per week. This would ensure that the efficiencies claimed by the merging parties would be, at least partially, passed on to passengers, through at least a new direct international flight between Brazil and Europe, outside the main international hubs. For example, the members of the joint venture could establish a new route between Recife and Paris, allowing a much shorter route in distance for passengers departing from northeast Brazil, who would not need to fly first to São Paulo or Rio de Janeiro. This remedy also intended to transfer part of the demand to other airports, alleviating congestion, notably at São Paulo/Guarulhos airport.[707-708-709]

The remedies applied by CADE on these transactions between airlines involved less traditional remedies,[710] with significant regulatory elements, including a prescriptive nature, and ongoing implementation and monitoring. These behavioural remedies established specific obligations tailored to the specific cases in question, complementing the existing slot regulation to foster competition.

For instance, in the Gol/Webjet and Azul/Trip cases, CADE did not require the airlines in question to return some slots to be allocated to competing air carriers, but rather that the post-merger entities ensured that the scarce airport infrastructure was operated efficiently, discouraging strategies to block rival entry by misusing their slots.[711] As mentioned above, the minimum efficiency usage rate imposed on all allocated slots at Rio de Janeiro/Santos Dumont airport was superior to the one required by regulation. In addition, this behavioural remedy also

[707] SILVEIRA, Paulo Burnier da. Competition Policy and Public Interest: A Glance at the Brazilian Experience. In CHARBIT, Nicolas; MORETTO, Thomas (ed.). *Frédéric Jenny: Standing Up for Convergence and Relevance in Antitrust. Liber Amicorum – Volume II*. New York: Institute of Competition Law, 2021. pp. 305-306.

[708] Nevertheless, the transaction was ultimately withdrawn by the airlines before its implementation (VIANA, Peter. LATAM abandons joint venture plan with British Airways and Iberia. *Aeroflap*, 6 December 2019. Available at: https://www.aeroflap.com.br/en/latam-abandona-plano-de-joint-venture-com-a-british-airways-e-iberia/).

[709] In 2021, CADE examined the establishment of a metal-neutrality joint venture between Delta and Latam, encompassing air passenger and cargo transport between the United States/Canada and South America. Despite identifying several overlapping routes, CADE concluded that there was low probability of the merging parties exercising their market power due to the absence of entry barriers (namely in light of slot availability) and the fact that competitors had available capacity to compete with the post-merger entity. Consequently, the transaction was cleared without remedies (Delta/Latam case, Merger file CADE No. 08700.003258/2020-34, decision of 24 February 2021).

[710] In merger control, structural remedies (divestitures) have been preferred over behavioural remedies by many competition authorities worldwide, especially as regards horizontal mergers (ICN. *Merger Remedies Guide*. 2016. Available at: https://www.internationalcompetitionnetwork.org/wp-content/uploads/2018/05/MWG_RemediesGuide.pdf. p. 9).

[711] MATTOS, César; CABRAL, Patricia Semensato. Remédios em atos de concentração: teoria e prática do CADE. *Revista de Defesa da Concorrência*, v. 4, n. 1, 2016. Available at: https://revista.cade.gov.br/index.php/revistadedefesadaconcorrencia/article/view/247/126. p. 87; CADE. *Cadernos do Cade: Mercado de transporte aéreo de passageiros e cargas*. pp. 103-106.

addressed the fact that "slot hoarding" strategies are hardly prevented by the regulator in practice, as discussed in section 3.1.2.

Likewise, in the TAM/Iberia/British Airways case, the members of the joint venture committed to create two new international routes between Brazil and Europe, including at least one Brazilian airport other than the two main international hubs (i.e. Rio de Janeiro and São Paulo). This behavioural remedy considered public interest elements, namely the diversification of direct flight options between Brazil and Europe, aiming at guaranteeing a better use of other Brazilian airports for the benefit of a group of consumers that was not directly impacted by the merger.[712]

Even slot divestiture imposed by CADE has some elements that depart from traditional structural remedies. Indeed, slots do not properly comprise property rights; rather, they refer to a temporary permission granted by ANAC to an airline, free of charge, to use airport infrastructure.[713] As mentioned in section 3.1.1, to guarantee historic precedence, airlines must comply with some regulatory requirements, including the "use it or lose it" rule. This means that even if the merging parties transfer slots to other airlines, the latter need to meet the conditions set by regulation to maintain the slots. Furthermore, in the two cases involving slot divestiture, the remedy referred to a transfer, free of charge, of a set of slots to a competitor for a given period of time (three years in the LAN/TAM case and ten years in the TAM/Iberia/British Airways case). Once the remedy duration concluded, the slots returned to the post-merger entity. In addition, the transferred slots were associated with a specific operation (direct flights from São Paulo to Santiago in the LAN/TAM case and from São Paulo to London in the TAM/Iberia/British Airways case). In other words, these remedies also involved significant behavioural elements, with ongoing implementation and monitoring.

Other jurisdictions, such as the European Union, have also imposed similar slot remedies on mergers between airlines. In the first cases assessed during the 1990s and early 2000s, the European Commission required that some slots of the merging airlines should be made available to competitors for a given duration, such as five years or four consecutive IATA seasons (so-called first-generation remedies).[714] In addition, similarly to the Brazilian examples described above, these remedies imposed that the freed slots should be used only to operate a

[712] SILVEIRA, Paulo Burnier da. Competition Policy and Public Interest: A Glance at the Brazilian Experience. pp. 305-306.
[713] Article 12 of Resolution ANAC No. 682/2022.
[714] For instance, Swissair/Sabena (Case No. IV/M.616, decision of 20 July 1995), United Airlines/US Airways (Case No. COMP/M.2041, decision of 12 January 2001), British Airways/American Airlines/Iberia (Case No. COMP/F-1/39.596, decision of 14 July 2010) and Air France/KLM/Alitalia/Delta (Case No. CASE AT.39964, decision of 12 May 2015).

specific route in which competition concerns had been found. If the new operator ceased to operate the routes, the slots were returned to the merging parties. In some cases, the European Commission also applied behavioural remedies to complement slot divestiture, establishing additional incentives for new competitors to enter the market. These included, for example, frequency freezing obligations and commitments of merging airlines to enter into interline agreements with new entrants and to grant them access to their frequency flyer programmes.[715]

However, in the mid-2000s, the European Commission changed its approach – at least in some transactions – and begun requiring merging carriers to divest a set of slots for an unlimited period of time (so-called second-generation remedies, which are more properly structural remedies).[716] Moreover, slots underused or misused by competitors must be returned to the slot co-ordinator, rather than to the merging parties. Competing airlines using the slots can also acquire grandfather rights after a period operating the specified route, allowing them to use the slot for any other destination. Additionally, merging parties continue to be subject to behavioural remedies, such as entering into special prorate and code-share agreements with new entrants, as well as granting the latter access to their frequent flyer programmes. These behavioural remedies intend to allow new entrants to have access to connecting flights, ensuring that the operation of the released slots is profitable.[717]

Although second-generation remedies aim at addressing some shortcomings of first-generation remedies, particularly by providing competing airlines with more incentives to use the released slots, there is still criticism against the effectiveness of this approach. This is because in some cases slots freed by merging airlines have never been picked up and/or effectively used by competitors. Different reasons are indicated for the ineffectiveness of slot divestiture in these cases. For instance, it is argued that the post-merger entity becomes stronger, which makes competing with this carrier more challenging and economically unattractive. Additionally, the value of the slots is often prohibitively expensive, as mentioned in section

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[715] GIANNINO, Michele. The European Commission Appraisal of Airline Mergers - The Rise of a New Generation of Slot Remedies. *Airlines*, n. 52, 2012. Available at: https://aerlinesmagazine.files.wordpress.com/2012/03/52_giannino_eu_slot_remedies.pdf.

[716] The first case to adopt second generation remedies was Air France/KLM (Case No. COMP/M.3280, decision of 11 February 2004; EUROPEAN COMMISSION. *Commission clears merger between Air France and KLM subject to conditions*. 11 February 2004. Available at: https://ec.europa.eu/commission/presscorner/detail/en/IP_04_194). Other examples include Lufthansa/SN Airholding (Case No. COMP/M.5335, decision of 22 June 2009), Lufthansa/Austrian Airlines (Case No. COMP/M.5440, decision of 28 August 2009), Iberia/Vueling/Clickair (Case No. COMP/M.5364, decision of 9 January 2009), IAG/British Midlands Limited (Case No. COMP/M.6447, decision of 30 March 2012) and IAG/Aer Lingus (Case No M.7541, decision of 14 July 2015).

[717] GIANNINO, Michele. *op. cit.*; MUREK, Szymon. Remedies in Airline Mergers in the European Union. *Global Antitrust Review*, n. 10, 2017. Available at: http://www.icc.qmul.ac.uk/media/icc/gar/gar2017/GAR-2017.pdf. pp. 161-163.

3.1.3.2. These remedies would also focus on horizontal competition between air carriers, not considering competition downstream at the distribution level.[718]

In this context, some authors propose that more effective remedies should be used by competition authorities in addition to slot divestiture to ensure a level playing field following mergers between airlines. For instance, in some cases carving out measures could be necessary, forcing the merging parties to remain competitors on specific routes. Moreover, other structural remedies could be applied, for example, divestiture of aircrafts, brands, personnel or other relevant assets. Additional behavioural remedies could also be appropriate, such as distribution-related remedies, requiring merging airlines to make quality content (i.e. their lowest fares and core ancillary services) available for purchase on all consumer channels without discrimination.[719]

This suggests that less traditional remedies, more prescriptive and with more regulatory elements, should be used by competition authorities when reviewing transactions between airlines, including to ensure a more competitive use of slots. The Brazilian examples mentioned above illustrate potential approaches in this regard, where CADE sought to increase competition by interfering more directly in the existing regulatory framework, with positive outcomes.

Indeed, in 2021 CADE conducted an *ex-post* evaluation of Gol/Webjet and Azul/Trip mergers, particularly focusing on their effects on airfares for domestic routes. The study estimated difference in difference (DID) models, using as dependent variables airfares and seats sold from July 2010 to December 2019. CADE concluded that airfares for the routes previously operated by both Gol and Webjet experienced an 8% reduction, while the number of seats sold by Gol in those routes increased by 38%. As for the Azul/Trip merger, CADE did not identify a statistically relevant effect on airfares, but the number of seats sold by Azul on overlapping routes increased almost 27%. According to CADE, this indicates that the remedies imposed on

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[718] GIANNINO, Michele. *op. cit.*; SERAFIMOVA, Teodora. Main Takeaways from the Discussions. *Policy Brief, European Transport Regulation Observer*, n. 2022/08. Short- and Mid-Term COVID-19 Effects on the Aviation Sector: A Competition Law Perspective. 2022. Available at: https://cadmus.eui.eu/bitstream/handle/1814/73671/QM-AX-22-008-EN-N.pdf?sequence=1&isAllowed=y; MOUNIER, Emmanuel. New remedies in airline mergers: a distribution perspective. *Policy Brief, European Transport Regulation Observer*, n. 8, 2022. Available at: https://cadmus.eui.eu/bitstream/handle/1814/73671/QM-AX-22-008-EN-N.pdf?sequence=1&isAllowed=y.

[719] GIANNINO, Michele. *op. cit.*; MOUNIER, Emmanuel. *op. cit.* In the midst of a new wave of mergers between airlines, the Commissioner for Competition has recently suggested that the European Commission may change its approach in reviewing these transactions. In particular, he recognised that slot divestiture alone might not be enough, and airlines might be required to sell non-core assets to obtain clearance for mergers in the European Union (ESPINOZA, Javier; GEORGIADIS, Philip. EU to tighten rules for airline mergers. *Financial Times*, 17 October 2023. Available at: https://www.ft.com/content/b749e786-c2f2-4762-8c36-1745af5624f2).

both cases achieved their goal of safeguarding competition for the benefit of consumers.[720]

Nonetheless, competition authorities should be careful when designing remedies with more regulatory elements. As mentioned above, these less traditional interventions are often criticised as competition law could be instrumentalised to achieve goals that deviate from its own objectives, also making it more vulnerable to political pressures and influence.[721]

In such cases, competition authorities must ensure more than ever the proportionality of remedies, guaranteeing that they do not go beyond what is necessary to address the identified competition concerns. Respecting procedural guarantees is crucial in this regard, including by providing merging firms and third parties with the opportunity to contest the conditions imposed.[722] Regular monitoring of such remedies, including through co-operation with the relevant sector regulator, is also important to ensure their effectiveness.[723]

Competition authorities should also avoid replacing sector regulators, especially by acting in contrast with the latter, as such interventions may be criticised for lacking legitimacy.[724] In this context, co-operation between competition authorities and sector regulators is essential to guarantee a consistent approach between competition and regulatory policies.

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[720] CADE. *Ex post mergers evaluation: Evidence from the Brazilian airline industry*. Documento de Trabalho nº 003/2021. Brasília: CADE, 2021. Available at: https://cdn.cade.gov.br/Portal/centrais-de-conteudo/publicacoes/estudos-economicos/documentos-de-trabalho/2021/Documento-de-Trabalho_Ex-post-mergers-evaluation-Evidence-from-the-Brazilian-airline-industry-versao-final.pdf. Nevertheless, in 2023 CADE carried out a new study on the Gol/Webjet transaction, assessing the impact on prices arising from the elimination of a potential competitor (Webjet) in the Brazilian airline market. The exercise did not focus on the overlapping routes (where Gol and Webjet were actual competitors), but rather on the routes where the airlines were potential competitors. The analysis revealed that airfares on these routes increased between 7.68% and 16.42%, suggesting the importance of considering the effects of a merger on potential competition in future cases (CADE. *Efeitos da concorrência potencial: O caso do ato de concentração Gol-Webjet. Documento de Trabalho nº 005/2023*. Brasília: CADE, 2023. Available at: https://cdn.cade.gov.br/Portal/centrais-de-conteudo/publicacoes/estudos-economicos/documentos-de-trabalho/2023/DT_005-Concorrencia-potencial.pdf). In addition, an academic paper assessed Gol/Webjet and Azul/Trip transactions and concluded that there were no statistically significant effects of the mergers on airfares (LIMA, Leonardo de Castro. *Exame dos efeitos ex-post das fusões entre a GolWebjet e Azul-Trip no setor brasileiro de aviação*. Federal University of Rio de Janeiro, Master's Thesis, Institute of Economics, 2020. Available at: https://www.ie.ufrj.br/images/IE/PPGE/disserta%C3%A7%C3%B5es/2020/Disserta%C3%A7%C3%A3o%20de%20mestrado_Leonardo_vers%C3%A3o%20final_com%20ficha_pdfa.pdf). Another academic paper which examined the Azul/Trip merger indicated that the efficiency gains resulting from the transaction were very limited and could have been achieved even without the merger (CASTRO, Kleber Pacheco de; SILVA, Lucia Helena Salgado e; MARINHO, Alexandre. Análise da Fusão Azul-Trip sob a Ótica dos Ganhos de Eficiência. Revista de Economia Contemporânea, v. 23, n. 1, 2019. Available at: https://www.scielo.br/j/rec/a/5FDDgzGMkxKTCHTJsCbpXNz/?format=pdf&lang=pt).

[721] COLOMO, Pablo Ibáñez. On the Application of Competition Law as Regulation: Elements for a Theory. p. 277; DUNNE, Niamh. *Competition Law and Economic Regulation.* p. 95.

[722] COLOMO, Pablo Ibáñez. On the Application of Competition Law as Regulation: Elements for a Theory.

[723] OECD. *Ex-post Assessment of Merger Remedies, OECD Competition Policy Roundtable Background Note*. Paris: OECD Publishing, 2022. Available at: http://www.oecd.org/daf/competition/ex-post-assessment-of-merger-remedies-2023.pdf. p. 35.

[724] DUNNE, Niamh. *Competition Law and Economic Regulation.* pp. 91-92.

Moreover, as competition remedies should be implemented within a short period of time,[725] introducing regulatory obligations through competition enforcement might not be able to effectively address market failures in the long term, requiring a more comprehensive and effective regulation. Yet, competition remedies may inspire sector regulators to introduce/amend regulation, promoting more competitive markets over the long run.[726]

As mentioned above, most mergers in the civil aviation industry concern airlines, although these transactions have a great impact on airport competition. After all, airports are multi-sided markets (see section 2.1), and changes on one side of the platform can affect not only the platform itself but also the other sides.

Nevertheless, there are segments within the airport sector where more prescriptive remedies via merger control may be beneficial to the functioning of the market. For instance, in the last decades there has been a movement of consolidation of airports, driven by the increasing privatisation of airports and the view that they are not a natural monopoly. In this context, airports have become more business-oriented, leading to the development of a market in airport business assets. Thus, there has been an emergence of airport strategic alliances and multi-airport companies, through mergers, with groups holding shares in various airports and operating on an international scale.[727]

Unlike mergers between airlines, to which there exist significant regulatory constraints, notably on cross-border mergers (which justifies the emergence of airline alliances as an alternative), airports do not face significant controls on ownership, although foreign investment rules and specific airport policies may limit foreign investment in airports in some locations. This means that it is easier to implement cross-border mergers between airports than between airlines.[728]

It should be noted that airport consolidation can result from state-owned airports that are managed by the same SOE, which in turn can enter into foreign markets by buying airports being privatised (e.g. Spanish AENA and French ADP). Consolidation can also arise when

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[725] ICN. *Merger Remedies Guide*. p. 2.

[726] This has occurred, for example, in the telecommunications sector in the European Union, where merger remedies have helped the implementation of sector regulation (DE STREEL, Alexandre. Remedies in the European Electronic Communications Sector. In GERADIN, Damien (ed.). *Remedies in Network Industries: EC Competition Law vs Sector-specific regulation*. Antwerpen: Intersentia, 2004).

[727] FORSYTH, Peter; NIEMEIER, Hans-Martin; WOLF, Hartmut. Airport alliances and mergers – Structural change in the airport industry? *Journal of Air Transport Management*, v. 17, n. 1, 2011. Available at: https://www.sciencedirect.com/science/article/pii/S0969699710000979. p. 49.

[728] FORSYTH, Peter; NIEMEIER, Hans-Martin; WOLF, Hartmut. Airport Alliances and Multi-Airport Companies: Implications for Airport Competition. In FORSYTH, Peter; GILLEN, David; MÜLLER, Jürgen; NIEMEIER, Hans-Martin (ed.). *Airport Competition: The European Experience.* Farnham: Ashgate Publishing, 2010. pp. 341, 350-351.

private investors buy a set of state-owned airports – or strategic holdings in them – at the time of privatisation (e.g. British BAA, French Vinci, German Fraport and Brazilian CCR) or when stakes are available in the market (e.g. Australian Macquarie).[729]

While airport consolidation can result in operational cost savings, through co-ordination of functions and know-how transfers, it can also increase market power, raising competition concerns,[730] particularly when it involves airports that can compete in one or more market segments, as discussed in section 2.3. Indeed, competing airports should ideally be managed by different players in order to foster competition (see section 2.5).

Besides competing in the market, airport groups can also compete for the market, in auctions around the world, when airports are privatised. While consolidation may lead to the creation of national champions that are strong competitors in foreign markets (e.g. AENA), this process may end up reducing the overall number of competitors in tender processes worldwide.

As regulation typically does not establish significant limitations on consolidation across airports, competition authorities can play a relevant role in preventing anti-competitive effects when assessing such transactions. Thus, if necessary, competition authorities should consider imposing remedies on (or even blocking) transactions involving airports, considering the existing regulatory framework and the characteristics of the market. In this context, merger review can serve as an instrument to strengthen competition through regulatory mechanisms.

An interesting case concerns the airports of Vienna and Bratislava, which are located around 60 kilometres away from each other. In 2006, the Slovak government decided to privatise Bratislava airport through the selling of 66% the airport to a consortium composed of Vienna airport. Both Austrian and Slovak competition authorities assessed the transaction. The Austrian Federal Competition Authority (BWB) referred the acquisition to the Cartel Court (OLG) for a Phase II investigation, as it raised significant competition concerns, particularly in the LCC market, since the transaction would lead to a monopoly. The transaction was ultimately authorised subject to remedies, with significant regulatory elements. Accordingly, a price cap on airport charges would be imposed on Vienna airport, based on the charges of 14 European airports that competed with Vienna airport. In addition, Vienna airport would be prevented from reducing capacity and would execute existing plans for the enlargement of Bratislava airport. Vienna airport would also assign slots in an unbiased way. Finally, the merging parties would

[729] FORSYTH, Peter; NIEMEIER, Hans-Martin; WOLF, Hartmut. Airport alliances and mergers – Structural change in the airport industry? p. 55. As described in section 2.5.2, several airport groups have entered the Brazilian market since the beginning of the concession programme, being part of this airport consolidation process.

[730] FORSYTH, Peter; NIEMEIER, Hans-Martin; WOLF, Hartmut. Airport Alliances and Multi-Airport Companies: Implications for Airport Competition. p. 339.

implement account separation regarding the airport services, both horizontally (between Vienna and Bratislava) and vertically (vis-à-vis other services provided by the airports, such as ground handling services). Nevertheless, the transaction was blocked by the Antimonopoly Office of the Slovak Republic, as the remedies were considered to be insufficient to address the competition concerns.[731]

In Brazil, for instance, as mentioned in section 2.5.2, the second, third and fourth concession rounds established rules to prevent cross ownership. However, such rules focused on the auctions and the first five years of the concession.[732] After that period, the concession contracts allow cross ownership subject to ANAC's authorisation, which means that consolidation can occur between those airports. Moreover, since the fifth concession round, no limitation on cross ownership was introduced, in theory also permitting cross ownership between competing airports. While ANAC must approve such transactions, CADE also needs to review them if they fulfil the merger notification thresholds provided by Law No. 12.529/2011 (Brazilian Competition Act). To ensure competition between airports, where this is feasible, CADE may need to impose regulatory remedies, such as structural separation and prohibition on participation in corporate governance.[733]

Furthermore, the Brazilian government had the plan to sell Infraero's stakes in the concessionaires of the second and third rounds.[734] The sale of these stakes to private firms were included in the scope of the Investment Partnership Programme and the National Privatisation

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[731] FORSYTH, Peter; NIEMEIER, Hans-Martin; WOLF, Hartmut. Airport Alliances and Multi-Airport Companies: Implications for Airport Competition. pp. 347-348; BALLER, Silja. The Austrian Federal Competition Authority clears the acquisition of 66% of an airport by a consortium of investors, subject to remedies including a price cap and capacity and hold-separate commitments (Vienna Airport/Bratislava Airport). *e-Competitions*, Art. N° 22176, 2006. Available at: https://www.concurrences.com/fr/bulletin/news-issues/march-2006/The-Austrian-Federal-Competition-22176; AUSTRIA. *Airline Competition - Note by Austria*. OECD Competition Policy Roundtable. 2014. Available at: https://one.oecd.org/document/DAF/COMP/WD(2014)35/En/pdf. pp. 10-11; SLOVAK REPUBLIC. *Contribution from the Slovak Republic*. OECD Roundtable on Cross-Border Merger Control: Challenges for Developing and Emerging Economies. 2010. Available at: https://one.oecd.org/document/DAF/COMP/GF/WD(2010)76/En/pdf. p. 5.

[732] See, for instance, item 10.8 of the concession contracts of São Paulo/Guarulhos (second round), Rio de Janeiro/Galeão (third round) and Salvador (fourth round) airports.

[733] OECD. *OECD Competition Assessment Reviews: Brazil*. p. 62. So far, CADE has not assessed many transactions involving airports. Two examples concerned the concessionaires of Rio de Janeiro/Galeão and São Paulo/Guarulhos airports. In 2017, a subsidiary of Singaporean Changi acquired a 30.6% stake from Brazilian Odebrecht in the Rio de Janeiro/Galeão concessionaire, where Changi already held a 20.4% stake. In 2021, Brazilian Invepar acquired 5.1% stake from Airport Company South Africa in the São Paulo/Guarulhos concessionaire, where it already held a 45.9% stake. CADE authorised both transactions without conditions, concluding that there were no restrictions on competition due to the absence of horizontal overlaps or vertical integration (Excelente/CARJ/RJA, Merger file CADE No. 08700.007756/2017-51, decision of 11 December 2017; Invepar/GRUPAR/ACSA, Merger file CADE No. 08700.003974/2021-01, decision of 17 August 2021).

[734] As mentioned in section 2.2.2, in the second and third concession rounds, the Brazilian government imposed Infraero to hold a 49% share in all winning consortia.

Programme in 2019.[735] While it is not clear whether the government that took office in 2023 will pursue this initiative, if this is the case it is crucial that restrictions on cross ownership are established. Otherwise, there is a risk that a single firm acquires Infraero's stakes in all concessionaires or a cross-ownership arrangement between concessionaires.[736]

As mentioned in section 2.3, there is room for competition between some of these airports, and therefore there are sound reasons to maintain separate ownership between them. As CADE may be involved in reviewing these transactions, in the absence of regulation it should consider these elements in its assessment and eventually block or impose remedies if the transactions aim to implement cross-ownership strategies.

4.1.2 Anti-competitive practices

Competition enforcement against anti-competitive behaviour can also contribute to more pro-competitive regulation. Indeed, as mentioned above, competition law enforcement can lead to the adoption or reform of sector regulation, ensuring more competitive markets.

Despite the existence of market failures, there are instances where sector regulation may not be implemented, either unintentionally, for legislative delays or for a deliberate policy choice to avoid more interventionist approaches to market supervision. Similarly, the existing regulation may prove inadequate in addressing market failures. In such circumstances, competition law can be deployed to support imperfect markets and provide a remedy for market problems. Thus, in cases where adequate sector regulation is lacking or is not working adequately, competition authorities can impose regulatory remedies,[737] serving as an effective second-best alternative to address market failures until appropriate sector regulation is implemented.[738]

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[735] Decree No. 9.972/2019.
[736] OECD. *OECD Competition Assessment Reviews: Brazil.* p. 62.
[737] The competition law literature usually differentiates between antitrust and regulatory remedies. On the one hand, antitrust remedies relate to negative obligations (i.e. cease-and-desist orders), being reactive and administered on a one-off basis. On the other hand, regulatory remedies reveal a more proactive and prescriptive intervention, involving positive obligations, which mimic those found in sector regulation regimes (e.g. duty to give access to an infrastructure, setting of prices and divestitures). Nevertheless, although regulatory remedies tend to be more intrusive and complex (for instance, as regards their design, implementation and monitoring), they have been imposed by competition authorities since their early days. In this sense, regulatory remedies do not fall outside the normal scope of intervention under competition law (COLOMO, Pablo Ibáñez. Regulatory and Antitrust Remedies in EU Competition Law. In GERARD, Damien; KOMNINOS, Assimakis (ed.). *Remedies in EU Competition Law: Substance, Process and Policy*. Alphen aan den Rijn: Kluwer Law International, 2022, p. 74-76).
[738] DUNNE, Niamh. *Competition Law and Economic Regulation.* p. 71.

Furthermore, competition law complaints or investigations may uncover the existence of market-wide issues that can be more effectively dealt through comprehensive, market-wide intervention. In this sense, competition law enforcement can be a precursor to sector regulation tackling structural market problems.[739]

4.1.2.1 Restriction of access to the ground handling market

One interesting example that illustrates how competition enforcement against anti-competitive practices can address market failures and push for the adoption of sector regulation concerns the market of airport ground handling services in the European Union. As mentioned in section 2.1, the European Union has undergone a liberalisation process in the air transport sector in the late 1980s and early 1990s, removing regulatory restrictions on airlines flying within the European aviation market. Nonetheless, while legal monopolies for air transport were abolished by regulation, monopolies in airport markets, including ground handling services, were not covered by market-liberalising reforms, although remained subject to competition law.[740]

At that time, ground handling services in most EU Member States were provided exclusively by public airport operators (e.g. German airports) or by national flag carriers (e.g. Iberia in Spain), as described in section 3.2.1. The provision of these services by monopoly ground handlers was alleged to be expensive, of low quality and inefficient.[741]

In the absence of specific sector regulation, users of ground handling services submitted a number of competition complaints to the European Commission in the early 1990s regarding the provision of these services at significant airports in Europe. In 1993, the European Commission had ten investigations of anti-competitive practices involving the provision of ground handling services, especially concerning current Article 102 TFEU (Treaty on the Functioning of the European Union). For example, two of these complaints related to the ground handling monopoly at Frankfurt, Paris/CDG and Paris/Orly airports. These airports had allegedly favoured their own ground handling operations to the detriment of third-party handlers and self-handling airlines.[742]

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[739] *Ibid*; OECD. C*ompetition Enforcement and Regulatory Alternatives.* p. 24.
[740] DUNNE, Niamh. *Competition Law and Economic Regulation.* p. 72.
[741] FUHR, Johannes. *op. cit.* p. 106; SOAMES, Trevor. *op. cit.* p. 84.
[742] SOAMES, Trevor. *op. cit*. p. 83; CAA. *Access to the ground handling market at UK airports: a review of the CAA's approach*. p. 10; DUNNE, Niamh. *Competition Law and Economic Regulation.* pp. 72-73.

According to the European Commission, these similar and recurrent investigations indicated the existence of a deeper structural problem. In fact, the real issue that led to the complaints was the existence of special or exclusive rights granted for the provision of ground handling services. Thus, in parallel of pursuing the individual competition investigations, the European Commission advocated for a horizontal measure to open the market in all Member States, which would be preferable than a case-by-case approach. This resulted in the issuance of Council Directive 96/67/EC in 1996, aiming at opening up access to the ground handling market, although in practice the liberalisation was only partial, as explained in section 3.2.1. Therefore, the main driver of the Directive was the ongoing competition enforcement actions conducted by the European Commission. Through the Directive, the European Union intended to provide a comprehensive and prospective solution to access issues in the ground handling market.[743]

Regardless of the issuance of Council Directive 96/67/EC, the European Commission continued the individual investigations mentioned above. Through this strategy, it sought to exert pressure on the Member States to move forward rapidly with the liberalising regulation. This shows that competition enforcement can also play a political and pragmatic role in pushing for the adoption of sector regulation to address market failures.[744]

The decisions resulting from the investigations carried out by the European Commission were only issued after the Directive came into force, concluding that the airport operators had indeed abused their dominant position. For instance, in the case concerning Frankfurt airport, the Commission affirmed that the airport operator had used its power as monopoly provider of airport facilities to deny potential competitors (both self-handling airlines and independent suppliers) access to the market for the provision of ramp handling services without any objective justification. In other words, the airport operator infringed competition law by extending its dominant position on the market for the provision of airport facilities to the neighbouring market for ramp handling services, reserving this market for itself. The Commission also asserted that the exemptions from liberalisation provided by Council Directive 96/67/EC did not preclude the application of competition law. Therefore, the airport operator was required to allow market access for airlines and third-party handlers of ramp handling services.[745]

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[743] SOAMES, Trevor. *op. cit*. p. 83; DUNNE, Niamh. *Competition Law and Economic Regulation.* p. 73.
[744] SOAMES, Trevor. *op. cit*. p. 86; DUNNE, Niamh. *Competition Law and Economic Regulation.* p. 74.
[745] Commission Decision 98/190/EC of 14 January 1998 relating to a proceeding under Article 86 of the EC Treaty (IV/34.801 FAG – Flughafen Frankfurt/Main AG).

Moreover, in the case involving Paris/CDG and Paris/Orly airports, the European Commission concluded that although the airport operator had allowed ground handling suppliers – both third-party handlers and self-handling airlines – to enter the market, it imposed different levels of commercial fees on the competitors of the incumbent firm (i.e. the national carrier Air France) for certain categories of ground handling services, namely catering, aircraft cleaning and cargo services. Thus, the airport operator abused its dominant position by applying discriminatory rates for equivalent transactions, distorting competition between suppliers or users of the ground handling services in question, as well as between users providing competing air transport services from Paris. The airport operator was then required to ensure a system of non-discriminatory commercial fees for all suppliers of ground handling services, including self-handling airlines, at the airports.[746]

4.1.2.2 Discrimination of airport charges

Another similar example where competition law enforcement was used to fill a regulatory gap, also leading to the adoption of sector regulation, relates to airport charges in Europe. While airlines were allowed to enter new markets following the liberalisation of air transport during the 1990s, airport operators were not expressly required by regulation to provide equal treatment to all airlines operating at the airport. In this context, the issue of discriminatory airport charges emerged, through which airport operators favoured national air carriers over other airlines. Once again, in the absence of specific regulation, the affected airlines resorted to competition law.[747]

In the 1990s and early 2000s, the European Commission issued several decisions regarding price discrimination based on nationality. For instance, in 1995 the Commission ruled that the airport charges for the use of Brussels airport, in particular the system of discounts on landing fees, constituted an abuse of dominance and had the effect of applying different conditions to airlines for equivalent transactions, placing some air carriers at a competitive disadvantage.[748] Indeed, the monthly amount of fees – which related to the number of movements and the weight of the aircraft – required to qualify for a discount was so high that only an airline based at the airport could benefit from the discount.

[746] Commission Decision 98/513/EC of 11 June 1998 relating to a proceeding under Article 86 of the EC Treaty (IV/35.613 – Alpha Flight Services/Aéroports de Paris).
[747] DUNNE, Niamh. *Competition Law and Economic Regulation.* p. 74.
[748] Commission Decision 95/364/EC of 28 June 1995 relating to a proceeding pursuant to Article 90 (3) of the Treaty (Brussels National Airport).

In addition to its high threshold, the discount system had progressive, non-linear steps. This meant that the reductions offered increased more than proportionally to the number of landings/take-offs, accentuating the differences between heavy-traffic airlines and the others. The Commission considered that the airport operator did not prove the existence of economies of scale that could justify the discounts, as the handling of a landing or take-off of an aircraft requires the same services, regardless of its owner or the number of aircraft belonging to a specific carrier.

Therefore, the Commission concluded that the system of discounts implemented by Belgium through an administrative act infringed current Article 106 TFEU, read in conjunction with current Article 102 TFEU, requiring the Belgian government to stop the anti-competitive conduct.

Likewise, in 1999 the European Commission sanctioned the Finish airport operator for abusing its dominant position by imposing different landing charges for equivalent landing and take-off services for airlines based on the country of origin of the flight (i.e. lower charges for domestic flights and higher charges for intra-European Economic Area – EEA flights). In practice, this conduct artificially altered the costs for undertakings depending on whether they operated domestic or intra-EEA services, thereby placing airlines at a competitive disadvantage. Furthermore, according to the Commission, there were no objective justifications for the discriminatory conduct. For instance, the Commission highlighted that many domestic routes covered similar distances as intra-EEA flights, and that the aircraft used for domestic flights were not always smaller than those used for intra-EEA traffic. Unlike the Brussels airport, the Finish airport operator set itself the level of charges related to the use of the airport facilities it managed. Thus, the European Commission's decision was based solely on current Article 102 TFEU, also requiring the airport operator to bring to an end the anti-competitive behaviour.[749]

The European Commission also issued two decisions related to Portuguese and Spanish airports in 1999 and 2000, respectively. The reasoning was very similar to the ones mentioned above. In both cases, there was a system of discounts on landing fees based on the number of monthly landing frequency and the origin of the flight (domestic or intra-EEA). The system of landing charges had been implemented by the Portuguese and Spanish governments, and

[749] Commission Decision 1999/198/EC of 10 Frebruary1999 relating to a proceeding pursuant to Article 86 of the Treaty (IV/35.767 — Ilmailulaitos/Luftfartsverket).

therefore the Commission applied current Article 106 TFEU in conjunction with current Article 102 TFEU.[750]

In the absence of regulation, competition enforcement imposed regulatory remedies in order to ensure a competitive environment at European airports. In fact, the real effect of these decisions went beyond the particular cases, since other airports (e.g. in France, Ireland and Sweden) also changed their systems of airport charges in accordance with the European Commission's view.[751]

Moreover, in parallel with the investigations, the European Commission initiated efforts to introduce a regulation on airport charges. In 1997, the Commission presented a proposal for a directive on airport charges, in line with the decisions mentioned above. According to the Commission, to achieve the single market, airlines should operate under fair and equitable market conditions. Therefore, all forms of discrimination between intra-Community air services should be abolished, and the price paid by airlines should be reasonably related to the cost of the facilities used or the services provided.[752]

In this context, airport charges should not discriminate between equivalent intra-Community services (i.e. similar services in terms of aircraft type and characteristics, distance flown and/or administrative and customs formalities). As established in the previous competition decisions, discounts of exemptions not objectively justified would distort competition between airlines. Thus, discrimination should only be admitted if the airport operator proves that the differentiated treatment is associated with the actual cost of the facilities and services provided.[753]

However, the proposed directive was ultimately rejected. The prevalence of current Article 106 TFEU showed that introducing such a regulation was challenging, considering the central role of governments in the airport context.[754] The proposal was also highly criticised by airport operators and some flag carriers close to the airports, which typically held a dominant

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[750] Commission Decision 1999/199/EC of 10 Frebruary1999 relating to a proceeding pursuant to Article 90 of the Treaty (No IV/35.703 — Portuguese airports) and Commission Decision 2000/521/EC of 26 July 2000 relating to a proceeding pursuant to Article 86(3) of the EC Treaty (Spanish airports).

[751] STEHMANN, Oliver. The EU Commission prohibits discriminatory landing fees at Spanish airports (PO/AENA). *e-Competitions*, Art. N° 39277, 2000. Available at: https://www.concurrences.com/fr/bulletin/special-issues/Effect-on-interstate-trade/abus/the-european-commission-prohibits-discriminatory-landing-fees-at-spanish.

[752] It should be noted that the European Commission intended to align the European regulatory framework to the international standards laid down by ICAO, notably in Article 15 of the Convention on International Civil Aviation (so-called Chicago Convention) and ICAO. *ICAO's Policies on Charges for Airports and Air Navigation Services.*

[753] COMMISSION OF THE EUROPEAN COMMUNITIES. *Proposal for a Council Directive on airport charges.* Brussels, 23 April 1997, COM(97) 154 final. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:51997PC0154.

[754] DUNNE, Niamh. *Competition Law and Economic Regulation.* p. 74.

position in the provision of airport services and air transport, respectively.[755] In addition, price discrimination is a very controversial topic and some stakeholders and academic papers defend that the practice is economically efficient.[756]

In 2007, the European Commission released a new proposal of a directive on airport charges, providing a general framework imposing basic principles that airport operators must follow when setting airport charges, including non-discrimination, consultation and transparency.[757]

In 2009, the European Union adopted Directive 2009/12/EC of the European Parliament and of the Council of 11 March 2009 on airport charges. The Directive formally codifies the non-discrimination principle set out in the former competition enforcement cases, prohibiting airport operators to discriminate against users when setting airport charges. The modulation of airport charges is nevertheless allowed, provided it is based on relevant, objective and transparent criteria. Indeed, the Directive states that the level of airport charges may be differentiated according to the quality and scope of the services and their costs or any other objective and transparent justification (e.g. for issues of public and general interest, including environmental matters). All EU Member States were required to transpose the Directive by March 2011.[758]

The example of airport charges illustrates that competition enforcement can function for years (in this case over two decades) as a regulatory instrument in the absence of sector-specific regulation. Furthermore, competition enforcement can serve as a driver for the adoption of sector regulation, which provides a more systematic and market-wide intervention.

4.1.2.3 Refusal of access to jet fuel supply infrastructures

In Brazil, a recent case also exemplifies that competition enforcement can contribute to a more pro-competitive regulation. As mentioned in section 3.3.2, in 2022 CADE sanctioned the operator of São Paulo/Guarulhos airport and the three incumbent jet fuel suppliers for

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[755] MARQUES, Rui Cunha; BROCHADO, Ana. *op. cit.* p. 169.

[756] See, for instance, LIN, Ming Hsin. Airport congestion and capacity when carriers are asymmetric. *International Journal of Industrial Organization*, v. 62, 2019. Available at: https://www.sciencedirect.com/science/article/pii/S0167718718300390. pp. 273-290.

[757] COMMISSION OF THE EUROPEAN COMMUNITIES. *Proposal for a Directive of the European Parliament and of the Council on airport charges*. Brussels, 24 January 2007, COM(2006) 820 final. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52006PC0820.

[758] The Directive applies to any EU airport open to commercial traffic with annual traffic exceeding five million passenger movements, as well as to the airport with the highest passenger movement in each Member State (Article 1(2) of Directive 2009/12/EC).

abusing their dominant position by limiting new players from entering the jet fuel supply market at that airport.[759]

According to CADE, although the incumbents did not explicitly deny access to the complainant, they did not establish clear criteria for entry, such as the proceedings (e.g. deadlines), the conditions (including the technical ones) and the fee to be paid by a new entrant. Likewise, the airport operator did not ensure that the incumbent jet fuel suppliers provided clear and objective criteria for entry of new competitors. CADE recognised that while sector regulation established the obligation of airport operators and incumbent suppliers to ensure open access to new entrants, it was not exhaustive in foreseeing the criteria for such access. However, CADE concluded that, in the presence of regulatory gaps and where the sector regulator does not adequately implement the established regulatory principles, competition enforcement must play a proactive role in ensuring that the regulated sector is competitive.[760]

Instead of simply prohibiting the anti-competitive behaviour, CADE imposed a regulatory remedy, requiring the sanctioned firms to engage in actions to promote competition. In particular, they were required to publish clear and objective rules for third-party access to the jet fuel supply infrastructures. Although CADE acknowledged that imposing regulatory remedies through a more proactive approach could face criticism for lacking legitimacy and opposition from the regulator, this was not a concern in this case since ANAC – the relevant sector regulator – had already imposed a similar remedy and was developing a regulation in this regard.[761]

As mentioned in section 3.3.2, ANAC ultimately adopted Resolution ANAC No. 717/2023 in June 2023, which codified the regulatory remedy applied by CADE. Once again, competition enforcement served as a pivotal tool that (i) provided a temporary regulatory remedy and (ii) led to the adoption of a regulation that intended to enhance competition.

In sum, the experiences described above show that competition authorities should remain vigilant to potential market failures in the airport sector that might arise from the lack of regulation, regulatory gaps or inadequate regulation. Competition investigations can signalise regulatory problems that competition enforcement may be able to address, at least provisionally. Therefore, more proactive competition enforcement with regulatory remedies may be crucial for fostering competition in the airport sector, although competition authorities

[759] Administrative Proceeding CADE No. 08700.001831/2014-27, decision of 9 November 2022.
[760] See Commissioner Victor Oliveira Fernandes' vote, Administrative Proceeding CADE No. 08700.001831/2014-27.
[761] *Id*.

should be cautious to prevent encroaching on the competencies of civil aviation regulators. Co-operation between these authorities is thus necessary in this context to avoid institutional conflicts and divergence between the two policy areas.

One area where additional competition enforcement efforts could be beneficial in the absence or less effectiveness of regulation is airport slots. As described in section 3.1.2, the current regulation of slot allocation may incentivise (or at least allow) airlines to abuse their dominant position at congested airports through "slot hoarding" behaviour, preventing new entry, without being subject to effective regulatory control.[762] Likewise, with the increasing absence of economic regulation of airport charges (or when they are regulated through a more light-handed approach), as discussed in section 2.4, potential abuses may be addressed by competition enforcement. This could also be the case for the provision of commercial services at airports, which is usually not subject to sector regulation (see section 3.4).

4.2 Shaping pro-competitive regulation through competition advocacy

As noted in Chapter 1, although competition law and sector regulation have different objectives and adopt different methods, most of the time they are complementary tools, applied cumulatively to ensure the well-functioning of markets. However, when designing sector regulation, it is possible that governments unduly restrict competition. This may arise from the action of lobbies and pressures from interest groups, but it can also occur unintentionally and even when the public policies at stake are not focused on economic regulation and not aimed at affecting competition in any way.[763]

This means that there is a risk that a state intervention through sector regulation, aimed at addressing a market failure, ends up imposing higher costs than the problem it was designed to tackle, which is often called regulatory failures or bad regulation.[764] The concept of regulatory failures refers to situations where regulations fail as "they do not produce (at

[762] In this context, see ARAS, Tuvana. Article 102 TFEU to the rescue: filling the legal gaps of the airport slot regulation. *European Competition Journal*, v. 18, n. 3, 2022. Available at: https://www.tandfonline.com/doi/full/10.1080/17441056.2022.2128551. pp. 658-682.
[763] OECD. *Recommendation of the Council on Competition Assessment*. 2019. Available at: https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0455; OECD. *Competition Assessment Toolkit - Volume 2: Guidance*; SOKOL, Daniel. Anticompetitive Government Regulation. In LIANOS, Ioannis; SOKOL, Daniel (ed.). *Global Competition Law and Economics*. Stanford: Stanford University Press, 2012. p. 85.
[764] CMA. *Regulation and Competition: A Review of the Evidence*. p. 22.

reasonable cost) the outcomes that are stipulated in their mandates or when they do not serve procedural or representative values properly".[765]

In other words, regulation may gain results inefficiently – when its costs exceed its benefits – or produce unintended adverse consequences.[766] Among those negative effects, regulations can unduly restrict competition, which is what Sokol refers to as "anticompetitive government regulation" or "public restraints".[767]

Nevertheless, in spite of the risks of regulatory failures – and particularly of significant harm to competition –, deregulating is not always the appropriate answer. As already indicated, there are relevant public policies to be achieved through regulation. In fact, specific industries, including civil aviation, often need to be regulated; otherwise, the market itself may produce harmful or even disastrous outcomes. The best option under these circumstances is to review and reform regulations so that they can achieve their beneficial purposes, while contributing to the well-functioning of economic markets,[768] including a competitive environment. Instead of advocating for less regulation, as done by deregulatory theories, this approach seeks to develop better regulations, improving the quality of regulation,[769] both *ex ante* (before the regulation is issued) and *ex post* (after the regulation is issued).[770]

Baldwin, Cave and Lodge propose five criteria to assess whether a regulation is good: (i) it is supported by legislative authority; (ii) there is an appropriate scheme of accountability; (iii) procedures are fair, accessible, and open; (iv) the regulator is acting with sufficient

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[765] BALDWIN, Robert; CAVE, Martin; LODGE, Martin. *Understanding Regulation: Theory, Strategy, and Practice*. Oxford: Oxford University Press, 2012. p. 69.
[766] SUNSTEIN, Cass R. *op. cit.* p. 271; BALDWIN, Robert; CAVE, Martin; LODGE, Martin. *Understanding Regulation: Theory, Strategy, and Practice*. p. 69.
[767] SOKOL, Daniel. *op. cit.*
[768] SUNSTEIN, Cass R. *op. cit*. p. 271.
[769] It should be noted that there are many attempts to measure regulatory quality, even though this may be challenging and inevitably subject to contention (BALDWIN, Robert; CAVE, Martin; LODGE, Martin. *Understanding Regulation: Theory, Strategy, and Practice*. p. 37). For example, the OECD has developed a set of indicators of product market regulation (PMR) to measure a country's regulatory stance and to track reform progress over time (VITALE, Cristina; BITETTI, Rosamaria; WANNER, Isabelle; DANITZ, Eszter; MOISO, Carlotta. *The 2018 edition of the OECD PMR indicators and database: Methodological improvements and policy insights, OECD Economics Department Working Papers No. 1604*. Paris: OECD Publishing, 2018. Available at: https://www.oecd-ilibrary.org/economics/the-2018-edition-of-the-oecd-pmr-indicators-and-database-methodological-improvements-and-policy-insights_2cfb622f-en; OECD. *Indicators of Product Market Regulation*. 2023. Available at: https://www.oecd.org/economy/reform/indicators-of-product-market-regulation/). Another example, developed by the World Bank, is the Worldwide Governance Indicators. They measure six broad dimensions of governance, including regulatory quality, which captures the perception of the ability of governments to formulate and implement sound policies and regulations that permit and promote private sector development (WORLD BANK. *Worldwide Governance Indicators*. 2023. Available at: https://info.worldbank.org/governance/wgi).
[770] DUNNE, Niamh. *Competition Law and Economic Regulation.* p. 161.

expertise; and (v) the regulation is efficient.[771] Likewise, for Dunne, good regulation refers to a regulation that is both effective (i.e. achieves its goals) and efficient (i.e. at the least cost).[772]

Similarly, the OECD states that regulatory quality involves enhancing the performance, cost-effectiveness, and legal quality of regulation and administrative formalities. Regulatory quality refers to both procedural (the way regulations are developed and enforced) and substantive elements. Good regulatory practices comprise following the principles of consultation, transparency, accountability and evidence-base, as well as ensuring that regulations are effective at achieving their goals, efficient (avoid incurring unnecessary costs), coherent (consistent with the full regulatory regime) and simple (clear and easy to understand). Regulatory quality is also associated with ensuring that regulations are compatible as far as possible with competition.[773]

Therefore, competition policy must be considered within regulatory policy to ensure that regulations do not unduly distort competition. In this context, competition authorities can play a relevant role in promoting more pro-competitive regulation through competition advocacy initiatives before sector regulators, legislators and other policy makers. Likewise, sector regulators can also contribute to advocating for pro-competitive regulation when they are not the competent authority in question (e.g. when the regulation involves measures adopted by government ministries or laws approved by legislators).

The objective of these advocacy activities[774] is to help push for pro-competitive reforms, improving the regulatory framework from a competition law dimension. Such initiatives are typically conducted through pro-competitive evaluations, which should be carried out *ex ante*, providing policy makers with evidence-based information to support the adoption of regulations that promote competition, but also *ex post*, ideally in a regular basis, to ensure that the existing regulation is effective and efficient, remaining up to date, without unduly restricting competition. Moreover, quantifying the benefits of regulatory interventions, both *ex ante* and

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[771] BALDWIN, Robert; CAVE, Martin; LODGE, Martin. *Understanding Regulation: Theory, Strategy, and Practice*. pp. 26-34.

[772] DUNNE, Niamh. *Competition Law and Economic Regulation.* p. 162.

[773] OECD. *OECD Regulatory Policy Outlook 2015*. Paris: OECD Publishing, 2015. Available at: https://www.oecd-ilibrary.org/governance/oecd-regulatory-policy-outlook-2015_9789264238770-en. pp. 23-24; OECD. *Recommendation of the Council on Improving the Quality of Government Regulation*. 1995. Available at: https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0278.

[774] Although the term "competition advocacy" typically refers to the activities of competition authorities to promote competition, particularly before other government entities, this section will consider a broader advocacy dimension, as other authorities, such as sector regulators, can also promote competition policy within their own institutions and beyond.

ex post, can be an important component of pro-competitive evaluations, assisting in justifying the adoption of pro-competitive reforms.

Furthermore, certain competition authorities can carry out market investigations to examine if a specific market is working well from a competition point of view. Such investigations go beyond competition advocacy and enforcement activities, assessing the functioning of a market as a whole, and may amount to competition authorities imposing remedies to increase competition even if the firms in question did not infringe competition law.

The following sections explore these issues more thoroughly, elaborating on how these advocacy initiatives are conducted in practice, including examples from the airport sector to illustrate that such exercises are important tools for enhancing competition in the industry.

4.2.1 Pro-competitive evaluations

As mentioned above, pro-competitive evaluations – also referred to as competition assessments or reviews – are exercises that aim at examining regulations (in the broad sense, also including laws and other pieces of legislation) to identify potential restrictions on competition and propose alternative ways of avoiding or mitigating these harms. These exercises seek to assist policy makers in making evidence-based decisions and developing more pro-competitive regulations, whether when designing new regulations or when revising existing ones, therefore aligning competition and regulatory policies.

Pro-competitive evaluations can be carried out by the policy maker developing the regulation (e.g. sector regulator or legislator) or by third parties, particularly competition authorities.[775] When conducted by the policy maker itself, pro-competitive evaluations are usually integrated into Regulatory Impact Assessments (RIAs) and *ex-post* evaluations of regulations. When conducted by competition authorities, pro-competitive evaluations typically take the form of opinions on bills and proposed regulations, and existing laws and regulations, as well as market studies and sectoral reviews. Sector regulators can also carry out pro-competitive evaluations when they are not the competent authority in question, by presenting opinions to the relevant authorities (e.g. government ministries or legislators) in the attempt to influence the development of pro-competitive public policies.

[775] In some jurisdictions there exist specific government bodies in charge of regulatory quality, such as the Better Regulation Executive in the United Kingdom and the National Competition Council in Australia (OECD. *Competition Assessment Toolkit - Volume 1: Principles.* pp. 36-37).

The next section will describe international best practices related to pro-competitive evaluations, including examples from the airport sector. Then, the Brazilian experience will be assessed, suggesting areas for improvement.

4.2.1.1 International best practices

The OECD is a long-standing advocate of the need to assess regulations with a focus on competition in order to reconcile, as far as possible, competition and regulatory policies. In particular, the OECD Recommendation on Competition Assessment[776] calls jurisdictions to introduce a process to identify existing or proposed regulations that unduly restrict competition and develop specific and transparent criteria for carrying out competition assessments. It also recommends that governments adopt the more pro-competitive alternative that achieves the public interest objectives pursued by regulation. Any exceptions from competition law should be no broader than necessary to realise their public interest goals and should be interpreted narrowly. Moreover, competition reviews should be undertaken even if the regulation at stake seeks to promote pro-competitive results.

The OECD Recommendation on Competition Assessment refers to both *ex-ante* and *ex-post* pro-competitive evaluations. Accordingly, competition evaluations should be integrated in the review of public policies in an efficient and effective manner, according to the institutional and resource constraints of each jurisdiction. In addition, competition assessments of proposed public policies should be incorporated in the policy making process at an early stage and involve the participation of competition bodies or officials with expertise in competition.[777]

To support the implementation of competition assessments, the OECD has developed the Competition Assessment Toolkit, which provides a method to identify unnecessary restraints to competition and to develop alternative, less restrictive measures that still achieve public interest objectives.[778] The methodology can be used in a decentralised way across government (i.e. at national and sub-national levels), and even by officials without specialised economic or competition policy expertise.

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[776] OECD. *Recommendation of the Council on Competition Assessment*. 2019. Available at: https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0455. The current Recommendation on Competition Assessment, adopted by the OECD Council in 2019, revises, consolidates, and replaces two former instruments: the 1979 Recommendation on Competition Policy and Exempted or Regulated Sectors and the 2009 Recommendation on Competition Assessment.

[777] OECD. *Recommendation of the Council on Competition Assessment*.

[778] OECD. *Competition Assessment Toolkit - Volume 1: Principles*; OECD. *Competition Assessment Toolkit - Volume 2: Guidance*; OECD. *Competition Assessment Toolkit - Volume 3: Operational Manual*.

The process encompasses six stages. After identifying the regulations to be examined (stage 1), they should be screened using the Competition Checklist (stage 2). The Checklist consists of four main questions, each with sub-questions, that help to identify regulations that may limit competition. These questions relate to four broad categories of red flags that signalise the existence of a potential anti-competitive regulation:[779] (i) limitation of the number or range of market participants;[780] (ii) limitation of the ability of market participants to compete;[781] (iii) reduction of the incentives of market participants to compete;[782] and (iv) limitation of the choices and information available to consumers.[783] If the assessed regulations are not likely to lead to any of these outcomes, the exam is over as they are not expected to raise significant competition concerns.

However, "yes" answers to any of the questions do not mean that there is a regulatory failure. Rather, this only indicates that the regulation in question may unduly restrict competition, requiring an in-depth assessment to analyse whether the scale and scope of the impact on competition is significant. If this is the case, alternative less restrictive options should be identified (stage 3). For that purpose, it is first necessary to understand the rationale for the regulations (i.e. the policy objective they aim to achieve), which is crucial to propose alternative less restrictive measures that can still achieve those relevant policy objectives. Then, the options that were identified should be compared,[784] and the best one selected (stage 4) and implemented (stage 5). Sometimes, a competition restriction may be justified to achieve specific policy

[779] OECD. *Recommendation of the Council on Competition Assessment*.

[780] This is likely to happen when a regulation (i) grants exclusive rights; (ii) establishes licence or permit requirements; (iii) limits the ability of some players to provide goods or services; (iv) significantly raises costs of entry or exit; (v) sets geographical barriers for the flow of goods, services, labour or capital (OECD. *Competition Assessment Toolkit - Volume 1: Principles*. pp. 10-13).

[781] This outcome is likely to be produced if a regulatory provision (i) limits sellers' ability to set prices; (ii) restricts advertising or marketing; (iii) sets standards for product quality that provide an undue advantage to some firms over others or are above the level that some well-informed customers would choose; (iv) raises costs for some suppliers relative to others (OECD. *Competition Assessment Toolkit - Volume 1: Principles.* pp. 14-17).

[782] This may be the case if a regulation (i) establishes a self-regulatory or co-regulatory regime; (ii) requires or encourages market participants to publish information on supplier prices, outputs, sales or costs; (iii) introduces exemptions from general competition law (OECD. *Competition Assessment Toolkit - Volume 1: Principles.* pp. 17-20).

[783] This is likely to occur when a regulatory provision (i) restricts the ability of consumers to decide from whom they purchase; (ii) reduces mobility of customers between suppliers by increasing switching costs; (iii) fundamentally changes information required by buyers to shop effectively (OECD. *Competition Assessment Toolkit - Volume 1: Principles.* pp. 20-21).

[784] The OECD Competition Assessment Toolkit describes techniques of qualitative (e.g. argumentation, comparison of pros and cons in a list, and points-based analysis) and quantitative (e.g. price comparisons, outcome effects in cross-regulation studies, outcome effect in regulatory reform elsewhere, experiments, demonstration projects and value estimates) comparison (OECD. *Competition Assessment Toolkit - Volume 2: Guidance.* pp. 86 ff.).

objectives when there are no less restrictive alternatives to do so.[785] Finally, *ex-post* evaluation of competition assessments (stage 6) should be carried out to analyse whether the option chosen was the most appropriate and produced the anticipated effects.[786]

The International Competition Network (ICN) has also been promoting pro-competitive evaluations as a relevant competition advocacy tool, which can help to embed competition analysis within the regulatory process. According to the ICN Recommended Practices on Competition Assessment, competition authorities or other government bodies (e.g. sector regulators), either at a policy maker's request or of their own initiative, should carry out competition assessments to assist policy makers in analysing the costs to competition of an existing or proposed regulation, and make recommendations to help mitigate these anti-competitive effects. This increases awareness of the competitive process among policy makers, providing a framework for thinking about public policies matters from a competition perspective.[787]

The ICN Recommended Practices on Competition Assessment recognises the complementarity of the OECD work on this topic, including the Recommendation on Competition Assessment and the Competition Assessment Toolkit, focusing more on procedural aspects of pro-competitive evaluations. For example, to ensure an institutional environment where policy making process considers competition principles, the ICN recommends that there are clear periods for review and comments by interested parties; written procedures for considering a RIA of proposed policies; legal authority for competition agencies or other government bodies to carry out competition assessments, upon referral or on their own initiative; commitment by the relevant government bodies to take into account competition assessments and their recommendations; and publication of formal final assessment recommendations and policy makers' response to them.[788]

The ICN also suggests that competition authorities should engage in structured and long-term institutional relationship with relevant public bodies (including sector regulators), to foster opportunities to identify potential competition assessments and to increase the likelihood that such evaluations are taken into account in the policy making process. In addition, the ICN recommends competition authorities to monitor government and legislative agendas to

[785] This means that only a regulation that *unduly* restricts competition (i.e. is not justified) should be considered a regulatory failure.
[786] OECD. *Competition Assessment Toolkit - Volume 3: Operational Manual*.
[787] ICN. *Recommended Practices on Competition Assessment*. 2014. Available at: https://www.internationalcompetitionnetwork.org/portfolio/recommended-practices-on-competition-assessment/. p. 1.
[788] ICN. *Recommended Practices on Competition Assessment*. pp. 2-3.

determine areas for future competition assessment work. Moreover, consultation with interested parties should be incorporated within competition assessments, allowing public and private stakeholders to present their views on the regulation at stake. This can help to build support for proposed pro-competitive reforms, improving the quality and impact of competition assessments.[789]

In this context, pro-competitive evaluations encompass both a process integrated into the broader review of public policies and a substantive method that enables the identification, analysis and reform of regulations that unduly restrict competition. As regards the substantive aspect, these assessments comprise a core element of competition advocacy, which is an essential component of most competition regimes, but they also refer to policy makers elaborating better regulation. As for the procedural dimension, competition assessments are closely related to the increasingly prevalence of institutionalised formal RIAs and *ex-post* evaluations, at least when carried out by frontline policy makers.[790]

RIA is a systematic process to identify and quantify the benefits and costs likely to flow from regulatory and non-regulatory measures, essentially *ex ante*. Implementing RIA requires policy makers to clearly identify the objective of the regulation and consider alternative ways of achieving this goal, including through regulatory and non-regulatory measures, as well as a no-action option. This allows policy makers to analyse the trade-offs of all options before making a decision and select the most effective and efficient alternative. The implementation of RIA intends to improve the design of regulations, as it contributes to evidence-based policy making and reduces the risk of regulatory failures, enabling the development of best policy

[789] ICN. *Recommended Practices on Competition Assessment*. pp. 5-6. In 2015, the ICN launched the Framework on Competition Assessment Regimes to complement the ICN Recommended Practices on Competition Assessment. The Framework builds a picture of how competition assessment regimes are structured and operationalised, providing an overview of the most common approaches used by different jurisdictions. Although the Framework recognises that there is no one-size-fits-all model to implement competition assessments, it identifies general features that can be applied to several competition assessment regimes (ICN. *Framework of Competition Assessment Regimes*, Prepared by ICN Advocacy Working Group, Presented at the ICN 14th Annual Conference Sydney, April 2015. Available at: https://www.internationalcompetitionnetwork.org/portfolio/framework-of-competition-assessment-regimes/).

[790] OECD. *Experiences with Competition Assessment: Report on the Implementation of the 2009 OECD Recommendation*. Paris: OECD Publishing, 2014. Available at: https://www.oecd.org/daf/competition/Comp-Assessment-ImplementationReport2014.pdf. pp. 8-10.

responses which also maximise societal well-being.[791] Currently, the use of RIA is widespread worldwide.[792]

In addition to *ex-ante* assessments of regulations, the implementation of systematic *ex-post* evaluations of existing regulations is also relevant. These exercises aim at examining whether regulations remain up to date, cost justified, cost effective and consistent, delivering the intended policy goals, thereby improving legislation over time. These reviews also seek to simplify and lessen burdens of regulation for citizens and businesses. Nonetheless, in practice *ex-post* evaluations have been conducted much less frequently than *ex-ante* reviews. In fact, only a small percentage of jurisdictions have introduced systematic requirements to carry out *ex-post* evaluations.[793]

Although in theory RIAs and *ex-post* assessments, on the one hand, and pro-competitive evaluations, on the other hand, are distinct processes, they share many elements, with the latter being more specific than the former. In this sense, pro-competitive evaluations have been incorporated into RIAs and *ex-post* assessments. Indeed, the only aspect nearly universally covered in RIAs is the requirement to take into account the effects of regulation on competition, which reflects the core importance of competition to market economies.[794] Moreover, most *ex-post* evaluations have been carried out on a principle-based approach, for instance focusing on promoting competition.[795]

Therefore, pro-competitive evaluation is one component of RIA and *ex-post* evaluation in most jurisdictions.[796] For instance, this is the case in the United Kingdom, the European

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[791] OECD. *Recommendation of the Council on Regulatory Policy and Governance*. 2012. Available at: https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0390; OECD. *OECD Regulatory Policy Outlook 2018*. Paris: OECD Publishing, 2018. Available at: https://www.oecd-ilibrary.org/governance/oecd-regulatory-policy-outlook-2018_9789264303072-en. pp. 58-59, 250.

[792] OECD. *OECD Regulatory Policy Outlook 2021*. Paris: OECD Publishing, 2021. Available at: https://www.oecd-ilibrary.org/governance/oecd-regulatory-policy-outlook-2021_38b0fdb1-en. In 2020, the OECD published the Best Practice Principles on Regulatory Impact Assessment, providing a guidance for countries on how to better design and implement a well-functioning RIA system. The document also presents the essential elements that any RIA must contain, including problem definition, objective, description of the regulatory proposal, identification of alternatives, analysis of benefits and costs, identification of the preferred solution and setting out of the monitoring and evaluation framework (OECD. *Regulatory Impact Assessment, OECD Best Practice Principles for Regulatory Policy*. Paris: OECD Publishing, 2020. Available at: https://www.oecd.org/gov/regulatory-policy/regulatory-impact-assessment-7a9638cb-en.htm).

[793] OECD. *Recommendation of the Council on Regulatory Policy and Governance*; OECD. *OECD Regulatory Policy Outlook 2021*. pp. 85-87.

[794] While in most cases competition assessment is likely to be a minor element of RIA, in some circumstances it may be more significant, especially when one of the red flags mentioned above is identified (OECD. *Regulatory Impact Analysis: A Tool for Policy Coherence*, *OECD Reviews of Regulatory Reform*. Paris: OECD Publishing, 2009. Available at: https://www.oecd-ilibrary.org/governance/regulatory-impact-analysis_9789264067110-en. pp. 122-124).

[795] OECD. *OECD Regulatory Policy Outlook 2021*. pp. 80, 87.

[796] The Australian example is usually referred to as one of the most successful experiences with pro-competitive reforms derived from competition reviews. Between 1995 and 2005, Australia implemented a broad reform

Union, the United States, Korea, Indonesia, Mexico, China, Japan and India.[797] Recent reforms in Brazilian legislation corroborates that the country is also following this international trend, as further discussed below.

Moreover, many competition authorities have independently conducted pro-competitive evaluations in order to influence the regulatory process. As mentioned above, these initiatives comprise opinions on existing or proposed regulations, as well as market studies and sectoral reviews, which aim at supporting the adoption of pro-competitive reforms.[798]

For instance, the European Commission – in its role as a policy maker, rather than as a competition authority – regularly conducts RIAs and *ex-post* assessments, including pro-competitive evaluations, on various airport regulations. These exercises aim to support and inform its decisions, although sometimes reforms are blocked by other policy makers.[799] Indeed, European regulations often stipulate the need for review within a given period of time (e.g. five years), which proves beneficial to ensure regular and systematic assessment. Three different cases mentioned above can illustrate this approach.

Council Directive 96/67/EC on access to the ground handling market at Community airports has been regularly assessed by the European Commission since it was issued. For instance, reviews were conducted in 2002, 2009 and 2010 to evaluate the impact of the Directive on the liberalisation of the ground handling market at European airports, with the aim of enabling the Commission to draw evidence-based policy conclusions. The studies included

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programme (the so-called National Competition Policy), promoting transformations that strengthened competition in many sectors, such as telecommunications, rail, electricity and aviation (NATIONAL COMPETITION COUNCIL. *Assessment of governments' progress in implementing the National Competition Policy and related reforms: 2005*. Melbourne: National Competition Council, 2005. Available at: http://ncp.ncc.gov.au/docs/2005%20assessment.pdf; PRODUCTIVITY COMMISSION. *Review of National Competition Policy Reforms, Productivity Commission Inquiry Report, No. 33*. Melbourne: Productivity Commission. Available at: http://ncp.ncc.gov.au/docs/PC%20report%202005.pdf).

[797] OECD. *Competition Assessment Toolkit - Volume 1: Principles.* p. 38.

[798] OECD. *Experiences with Competition Assessment: Report on the Implementation of the 2009 OECD Recommendation*. p. 19. Over the years, the OECD itself has also conducted pro-competitive evaluations in specific sectors and jurisdictions using the Competition Assessment Toolkit. The objective is to analyse regulatory restrictions on competition and make specific policy recommendations for pro-competitive reforms. The OECD has already carried out such exercises in the following jurisdictions: Greece (numerous sectors, such as beverages, textiles, food processing, retail trade, wholesale trade, tourism, e-commerce, construction and media); Romania (construction, freight transport and food processing); Mexico (medicines, meat products and gas); Portugal (inland and maritime transports, ports and self-regulated professions); Tunisia (wholesale and retail trade, freight transport and tourism); Iceland (construction and tourism); ASEAN member states (logistics); and Brazil (civil aviation and ports). For further details see https://www.oecd.org/competition/assessment-toolkit.htm and SILVEIRA, Paulo Burnier da; GUIMARÃES, Marcelo Cesar. Avaliação de Impacto Normativo na Concorrência: Uma Oportunidade para Reformas Pró-competitivas no Mercosul. *Anuario de Derecho de la Competencia*. Asunción: La Ley Paraguaya, 2021. In particular, the pro-competitive evaluations carried out by the OECD in Iceland and Brazil included the airport sector, examining for instance airport ownership and operating models, regulation of airport charges and provision of commercial services at airports (OECD. *OECD Competition Assessment Reviews: Iceland*; OECD. *OECD Competition Assessment Reviews: Brazil*).

[799] OECD. *OECD Regulatory Policy Outlook 2021*. p. 294.

a detailed competition assessment of the ground handling market, concluding that despite the development and growth of the industry, several issues still limited competition.[800]

In 2011, the European Commission prepared an impact assessment, providing an overview of the different options considered, informing the decision to propose a Regulation on ground handling services, to repeal Directive 96/67/EC. Once again, a pro-competitive evaluation was at the core of the analysis.[801] Nevertheless, as mentioned in section 3.2.1, this proposal was ultimately withdrawn by the European Commission in 2015 due to the lack of agreement in the Council on the matter.[802] Currently, the European Commission is again carrying out an evaluation, including a competition assessment, of Directive 96/67/EC.[803]

Likewise, in 2004, the European Commission conducted an *ex-post* evaluation to assess the impact, including on competition, of Regulation No. 95/93 on common rules for the allocation of slots at Community airports. In particular, the study concluded that the regulatory framework imposed significant barriers to entry and there was inefficient use of slots. It suggested that the introduction of market mechanisms could address the inefficiencies and lead to increased services, stronger competition on some routes and lower airfares.[804]

In 2006, another study was commissioned by the European Commission to examine the consequences of the formal introduction of secondary trading mechanisms for slot allocation, confirming that such regulatory alternative could ensure mobility of slots and strengthen competition – at least to some extent – at European airports.[805]

The European Commission conducted an impact assessment in 2011, which resulted in a proposal for a new, more pro-competitive regulatory framework for slot allocation.[806] This

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[800] SH&E. *Study on the quality and efficiency of ground handling services at EU airports as a result of the implementation of Council Directive 96/67/EC - Report to European Commission*. London: SH&E, 2002. Available at: https://transport.ec.europa.eu/transport-modes/air/air-studies_en; AIRPORT RESEARCH CENTER. *op. cit.*; STEER DAVIES GLEAVE. *Possible revision of Directive 96/67/EC on access to the groundhandling market at Community airports - Framework Contract for impact assessment and evaluations (TREN/A1/143-2007) - Final Report.*

[801] EUROPEAN COMMISSION. *Proposal for a Regulation of the European Parliament and of the Council on Groundhandling Services at Union Airports and Repealing Council Directive 96/67/EC*.

[802] EUROPEAN PARLIAMENT. *Withdrawn by the European Commission, Groundhandling Services in Airports, "Deeper and fairer internal market with a strengthened industrial base / Services including transport"*.

[803] EUROPEAN COMMISSION. *Ground handling services at EU airports — evaluation (2010-18).*

[804] NERA. *op. cit.*

[805] MOTT MACDONALD. *op. cit.*

[806] EUROPEAN COMMISSION. *Proposal for a Regulation of the European Parliament and of the Council on common rules for the allocation of slots at European Union airports (Recast)*. COM(2011) 827 final/2. Brussels, 21 June 2012. Available at: https://ec.europa.eu/transparency/documents-register/detail?ref=COM(2011)827&lang=en.

document is still under review by the Council, and a new proposal was expected to be published in 2023.[807]

In the same vein, since its adoption in 2009, Directive 2009/12/EC on airport charges has been regularly assessed by the European Commission. For example, an *ex-post* evaluation was carried out in 2013 and 2017 to assess whether the Directive had achieved their objectives at a proportionate cost and whether it should be reviewed or amended. Both evaluations considered competition elements, particularly as regards competition between airports. They suggested that market power tests, taking into account competitive pressures, could play a greater role in establishing which airports should be subject to economic regulation.[808] Subsequently, the European Commission started working on the revision of the Directive, intending to improve economic regulation of airport charges in Europe. A new legislative proposal was expected by 2022,[809] but as of the end of 2023 it had not yet been released.[810]

Furthermore, in Australia, when reviewing the current regulatory framework of airports, the ACCC has recently recommended the Australian government to amend the Airports Regulations 1997 in order to increase the price-monitoring regime. The ACCC suggested that monitored airports should be required to provide more disaggregated information related to aeronautical, car parking and landside access services, as well as to update reported measures of airport quality. According to the ACCC, these changes could increase transparency of airport performance, benefiting airport users and informing analysis of whether the airports in question are exercising their market power in relation to those services, therefore guaranteeing a more competitive environment.[811]

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[807] EUROPEAN PARLIAMENT. Allocation of Slots at EU Airports: Common Rules - Recast; EUROPEAN COMMISSION. *Allocation of EU airport slots – review of rules*. Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13528-Allocation-of-EU-airport-slots-review-of-rules_en. Accessed on 23 December 2023.

[808] STEER DAVIES GLEAVE. *Evaluation of Directive 2009/12/EC on airport charges Final Report*. London: Steer Davies Gleave, 2013. Available at: https://transport.ec.europa.eu/system/files/2016-09/2013-09-evaluation-of-directive-2009-12-ec-on-airport-charges.pdf; STEER DAVIES GLEAVE. *Support study to the Ex-post evaluation of Directive 2009/12/EC on Airport Charges - Final report*. London: Steer Davies Gleave, 2017. Available at: https://op.europa.eu/en/publication-detail/-/publication/8e6db69a-e601-11e7-9749-01aa75ed71a1.

[809] EUROPEAN COMMISSION. *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Sustainable and Smart Mobility Strategy – putting European transport on track for the future*. COM(2020) 789 final. Brussels, 9 December 2020. Available at: https://eur-lex.europa.eu/resource.html?uri=cellar:5e601657-3b06-11eb-b27b-01aa75ed71a1.0001.02/DOC_1&format=PDF.

[810] EUROPEAN COMMISSION. *Charges for the use of airport infrastructure*. Available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/1188-Charges-for-the-use-of-airport-infrastructure_en. Accessed on 23 December 2023.

[811] ACCC. *Airport monitoring report: 2021-22*. pp. 5-6.

Moreover, through competition advocacy, COFECE has been pushing for several pro-competitive reforms in the airport sector in Mexico. For example, in 2018 COFECE submitted a recommendation to the Ministry of Infrastructure, Communications and Transportation to abolish the legal monopoly granted to SOE ASA to sell, distribute and provide jet fuel services at Mexican airports. According to COFECE, this monopoly impacted retail prices to the detriment of airlines and passengers, being incompatible with the regulatory framework established by the Energy Reform. Additionally, COFECE recommended that the contracts for the construction of storage facilities, supply and any other jet fuel service at Felipe Ángeles International Airport, the new Mexico City's airport, should be awarded through an open and competitive tender. COFECE's recommendations were ultimately followed by the Mexican government.[812]

COFECE has also been active regarding the regulation governing the provision of taxi services at Mexican airports, aiming to enhance competition in this market. In 2016, it assessed the organisation of access for taxis at airports and concluded that the system in place unnecessarily distorted competition. Indeed, Mexico adopts a restricted access model, in which a taxi provider, to enter the market, needs to obtain a specific permit granted by the Ministry of Infrastructure, Communications and Transportation. The supplier must also enter into an agreement with the airport operator, which imposes payments for the provision of the services. According to COFECE, this regime artificially restricts the supply of services, increasing prices for consumers. Therefore, it recommended that the Parliament and the Ministry of Infrastructure, Communications and Transportation should review the existing system to focus only on safety and quality of the services. In 2017, a legislator presented a bill to amend the regulatory regime in place, in line with COFECE's recommendations, but the Parliament ultimately withdrew the proposal. Nevertheless, in 2022, Felipe Ángeles International Airport followed COFECE's recommendations, introducing an open regime for the provision of taxi services, leading to increased supply, lower prices and better-quality services.[813]

These experiences show that carrying out competition assessments – regardless of the form they take – enables policy makers and competition authorities to play a relevant role in fostering pro-competitive reforms and improving the overall regulatory framework. While these

[812] MEXICO. *Annual Report on Competition Policy Developments in Mexico - 2018*. 2019. Available at: https://one.oecd.org/document/DAF/COMP/AR(2019)23/en/pdf. p. 18.
[813] MEXICO. *Competition and Regulation in the Provision of Local Transportation Services – Note by Mexico*. pp. 7-8.

endeavours may not always result in immediate regulatory changes, they can serve as a starting point that may lead to positive outcomes in the future.

4.2.1.2 Pro-competitive evaluations in Brazil

It was not until recently that the use of RIA and *ex-post* assessment was institutionalised in Brazil, although pro-competitive evaluations are not always integrated in such exercises. ANAC has been at the forefront of this process, which has already resulted in significant pro-competitive reforms in the airport sector – also thanks to the efforts of the relevant line ministry (currently, the Ministry of Ports and Airports).

In addition, CADE and the Brazilian Secretariat for Economic Reforms of the Ministry of Finance (which succeeded in 2023 the former SEAE, hereafter SEAE) have legal powers to engage in competition advocacy, mainly by presenting non-binding opinions on proposed bills and sector regulation, as well as by conducting market studies to assess competitive conditions of specific markets or sectors and propose recommendations to address potential regulatory problems. The competition advocacy initiatives of CADE and SEAE have also contributed to pro-competitive reforms in the airport sector.

The following sections will delve into these activities, highlighting that while significant progress has been achieved in recent years, there is still room for improvement.

a. Ex-ante and ex-post evaluations by policy makers

At least since the 2000s, the implementation of RIA has been discussed in Brazil. In the 2010s, many regulatory agencies (including ANAC, as described below) have introduced provisions establishing the use of RIA through subordinate legislation, but there was no uniformity in how the procedure should be carried out.[814]

In 2018, the Brazilian federal government issued guidelines on the elaboration of RIA, following Chamber of Deputies Bill No. 6.621/2016 (concerning the Brazilian regulatory agencies, which provided for compulsory RIA to be carried out by such entities)[815] and Decree

[814] BLANCHET, Luiz Alberto; BUBNIAK, Priscila Lais Ton. Análise de Impacto Regulatório: uma ferramenta e um procedimento para a melhoria da regulação. *Pensar – Revista de Ciências Jurídicas*, v. 22, n. 3, 2017. Available at: https://ojs.unifor.br/rpen/article/view/4219. pp. 8-9; ARAGÃO, Alexandre Santos de. Análise de Impacto Regulatório na Lei de Liberdade Econômica. In SALOMÃO, Luis Felipe; CUEVA, Ricardo Villas Bôas; FRAZÃO, Ana (ed.). *Lei de Liberdade Econômica e seus Impactos no Direito Brasileiro*. São Paulo: Revista dos Tribunais, 2020. p. 374.

[815] Previously, the Chamber of Deputies Bill No. 1539/2015 had already foreseen this objective.

No. 9.203/2017 (on the federal Administration governance policy).[816] This initiative intended to guide how RIA should be designed and implemented in the federal government, in line with international best practices. The guidelines mention pro-competitive evaluations only in passing when it is stated that the impact on competition is one of effects that policy makers should consider when carrying out RIA.[817]

In 2019, the abovementioned bill became Law No. 13.848/2019 (Law of Regulatory Agencies), and RIA was finally provided for in primary law, which also harmonised and systematised how the tool should be carried out. Pursuant to Article 6 of Law No. 13.848/2019, RIA is mandatory for federal regulatory agencies[818] prior to the edition or amendment of normative acts of general interest to economic players, consumers or users. According to this provision, RIA shall include information on the potential effects of the regulatory proposal. It also states that secondary legislation would establish the methodology and requirements of RIA, as well as the cases exempted from compulsory RIA. There is no specific reference to pro-competitive evaluations.

Furthermore, Law No. 13.874/2019 (Law of Economic Freedom), enacted a few months later in 2019, expanded the requirement for mandatory RIA to all federal Public Administration, including all ministries in the federal government.[819] According to Article 5 of Law No. 13.874/2019, normative acts of general interest to economic agents or users, to be edited or amended by any agency or entity of the federal Public Administration, should be preceded by RIA, in order to assess the rationale of their economic impact. Once again, there is no explicit

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[816] GOVERNO FEDERAL. Diretrizes *Gerais e Guia Orientativo para Elaboração de Análise de Impacto Regulatório – AIR*. Brasília: Presidência da República, 2018. Available at: https://www.gov.br/casacivil/pt-br/centrais-de-conteudo/downloads/diretrizes-gerais-e-guia-orientativo_final_27-09-2018.pdf/view. This document was followed by a new guide edited by SEAE in 2021 (SEAE. G*uia para Elaboração de Análise de Impacto Regulatório (AIR)*. Brasília: Ministério da Economia, 2021. Available at: https://www.gov.br/mma/pt-br/acesso-a-informacao/analise-de-impacto-regulatorio-2013-air-1/guia-para-elaboracao-de-air-2021_vdefeso.pdf).

[817] GOVERNO FEDERAL. Diretrizes *Gerais e Guia Orientativo para Elaboração de Análise de Impacto Regulatório – AIR*. p. 52. In 2021, SEAE issued new guidelines on RIA, also requiring the analysis of the effects of the regulatory proposal on competition and competitiveness. In addition, this document indicates more clearly pro-competitive standards that should guide the assessment (SEAE. G*uia para Elaboração de Análise de Impacto Regulatório (AIR)*. pp. 16 ff.).

[818] According to Law No. 13.848/2019, there are eleven federal regulatory agencies in Brazil: (i) National Electric Energy Agency (ANEEL); (ii) National Petroleum, Natural Gas and Biofuels Agency (ANP); (iii) National Telecommunications Agency (ANATEL); (iv) National Health Surveillance Agency (ANVISA); (v) National Supplementary Health Agency (ANS); (vi) National Water and Public Sanitation Agency (ANA); (vii) National Waterway Transport Agency (ANTAQ); (viii) National Land Transport Agency (ANTT); (ix) National Cinema Agency (ANCINE); (x) National Civil Aviation Agency (ANAC); (xi) National Mining Agency (ANM).

[819] MENEGUIN, Fernando B.; SAAB, Flavio. *Análise de Impacto Regulatório: Perspectivas a partir da Lei da Liberdade Econômica*, Texto para Discussão nº 271, Núcleo de Estudos e Pesquisas da Consultoria Legislativa. Brasília: Senado Federal, Consultoria Legislativa, 2020. Available at: https://www2.senado.leg.br/bdsf/handle/id/570015. p. 3.

reference to considering competition impacts of regulatory proposals. The Law also indicates that secondary legislation would establish the requirements and methodology of RIA.

Despite the progress regarding RIA made by both Laws, they have some limitations. First, the provisions only apply to agencies and entities of the federal Executive Branch, and therefore the other powers (i.e. Legislative and Judicial Branches) and sub-national levels (i.e. states and municipalities) are not covered.

For instance, it is not necessary to carry RIA for legislative activities (i.e. primary legislation), which undermines the effectiveness of the initiative, especially since laws are the most relevant legal instruments within a jurisdiction and often constitute a source of regulatory failures.[820]

Moreover, RIA is only required for the issuance of a new regulation (*ex ante* evaluation, weighing the costs and benefits of a regulation aimed to be implemented) or for the amendment of an existing regulation (mix of *ex-ante* and *ex-post* evaluations, analysing the effects already produced by the existing regulation vis-à-vis the expected effects of a substitute regulation).[821] Law No. 13.848/2019 and Law No. 13.874/2019 do not provide for mandatory *ex-post* evaluations,[822] which are a complementary tool to *ex-ante* assessments (RIAs).[823] Yet, Brazil is seeking to implement *ex-post* reviews through other initiatives, as further described below.

On the other hand, despite the fact that both Laws are not clear whether competition assessment should be incorporated into RIA, Article 4 of Law No. 13.874/2019 provides policy makers with useful guidelines in this regard. This is because it indicates the circumstances that

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[820] BINENBOJM, Gustavo. Art. 5º: Análise de Impacto Regulatório. In MARQUES NETO, Floriano Peixoto; RODRIGUES JR., Otávio Luiz; LEONARDO, Rodrigo Xavier (ed.). *Comentários à Lei da Liberdade Econômica – Lei 13.874/2019*. São Paulo: Revista dos Tribunais, 2019. p. 225. It should be noted that the OECD Recommendation on Regulatory Policy and Governance and the OECD Recommendation on Competition Assessment cover not only subordinate legislation, but also primary laws. Indeed, most OECD countries provide for mandatory RIA for both subordinate regulations and primary laws (OECD. *Recommendation of the Council on Regulatory Policy and Governance*. 2012. Available at: https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0390; OECD. *Recommendation of the Council on Competition Assessment*. 2019; OECD. *OECD Regulatory Policy Outlook 2021*. p. 71).

[821] BINENBOJM, Gustavo. *op. cit*. p. 224.

[822] The draft bill that resulted in Law No. 13.874/2019 (Law of Economic Freedom) provided for mandatory periodic *ex-post* evaluation, at least every five years (SUNDFELD, Carlos Ari; JORDÃO, Eduardo; MOREIRA, Egon Bockmann; MARQUES NETO, Floriano Azevedo; BINENBOJM, Gustavo; CÂMARA, Jacintho Arruda; MENDONÇA, José Vicente Santos de; JUSTEN FILHO, Marçal. *Para uma Reforma Nacional em favor da Liberdade Econômica e das Finalidades Públicas da Regulação*. São Paulo: FGV Direito SP; sbdp, 2019. Available at: https://www.sbdp.org.br/wp/wp-content/uploads/2019/04/Lei-Nacional-da-Liberdade-Econ%C3%B4mica-FGV-Direito-SP-sbdp-vers%C3%A3o-final-04.04.19.docx.pdf). However, this provision was removed from the final version of the law. Currently, Chamber of Deputies Bill No. 4.888/2019 requires periodic evaluation of all public policy provisions, mandating the assessment of their impacts, effectiveness and relevance, as well as their revisions, when necessary.

[823] OECD. *Recommendation of the Council on Regulatory Policy and Governance*; JORDÃO, Eduardo; CUNHA, Luiz Filippe. Revisão do estoque regulatório: a tendência de foco na análise de impacto regulatório retrospectiva. *Interesse Público – IP*, v. 22, n. 123, 2020.

may constitute so-called "abuse of regulatory power".[824] In fact, these are essentially the abovementioned red flags set out in the OECD Competition Checklist to identify regulations that may potentially restrict competition.

Items I, II, V, and VII refer to the category of restrictions on the number or range of suppliers:[825] restrictions on trade in favour of some players to the detriment of others; barriers to entry for domestic or foreign firms; increased transaction costs without corresponding benefits; and limitations on the incorporation of firms or their operation in a given market. Items III, IV, and VIII deal with the limitations on the ability of suppliers to compete:[826] technical standards not necessary to achieve a particular objective; obstruction or delay of new technologies, processes, and business models; and restrictions on advertising or marketing in a given market.[827]

Thus, before issuing or amending a regulation, policy makers should bear in mind that the potential anti-competitive effects listed in Article 4 of Law No. 13.874/2019 should be avoided. Moreover, when a regulatory proposal is likely to produce at least one of these effects, a further assessment should be carried out, in order to evaluate whether there are any alternative, less restrictive measures. For that reason, performing competition reviews when carrying out the required RIA is essential to prevent "abuse of regulatory power".[828]

It should be noted that Article 4 of Law No. 13.874/2019 clearly sets out that there is an "abuse of regulatory power" only if a provision *unduly* produces one of the anti-competitive effects listed thereof. In other words, if an anti-competitive outcome is justified and necessary to achieve a relevant policy objective, following a proportionality analysis, the regulation is not considered abusive.[829] Thus, the mechanism introduced by Law No. 13.874/2019 makes it clear that competition assessments are a valuable tool to improve regulatory design and to push for pro-competitive reforms.

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[824] It is out of the scope of this thesis to examine procedural aspects for identifying an abuse of regulatory power, issues related to the competences to assess the existence of such practice and the consequences of a decision declaring the existence of an abuse of regulatory power.
[825] Group A of the OECD Competition Checklist.
[826] Group B of the OECD Competition checklist.
[827] Only item VI, concerning the creation of artificial or compulsory demand for a product or service, is not covered by the OECD Competition Checklist.
[828] If the regulatory proposal is not likely to produce any potential anti-competitive effects, the competition assessment will be simple and constitute a minor element of RIA. Otherwise, an in-depth analysis will be required.
[829] GUIMARÃES, Marcelo Cesar; SILVEIRA, Paulo Burnier da. Análise de Impacto Regulatório e Aspectos Concorrenciais: os recentes esforços para incorporar as melhores práticas da OCDE no Brasil. In TIMM, Luciano Benetti; FRANÇA, Maria Carolina (ed.). *A Nova Regulação Econômica*. São Paulo: CEDES, 2022. pp. 289-289; MENDONÇA, José Vicente Santos de. Art. 4º: Requisitos para Regulação Pública. In MARQUES NETO, Floriano Peixoto; RODRIGUES JR., Otávio Luiz; LEONARDO, Rodrigo Xavier (ed.). *Comentários à Lei da Liberdade Econômica – Lei 13.874/2019*. São Paulo: Revista dos Tribunais, 2019. p. 2013. p. 213.

The implementation of RIA, as provided for in Article 6 of Law No. 13.848/2019 and Article 5 of Law No. 13.874/2019, was regulated by Decree No. 10.411/2020. Just like the abovementioned laws, the decree does not clearly mention that pro-competitive evaluations should be a component of RIA.

Decree No. 10.411/2020 establishes the methodology of RIA and its elements, which is constructive to ensure a uniform approach across the federal Public Administration. Among these requirements, RIA should identify the potential impacts of the alternatives under consideration. Even though the Decree does not specify the nature of the effects that should be taken into account, one may assume that competition impacts should be assessed. Indeed, impacts on competition are commonly part of RIA worldwide. Additionally, competition reviews are paramount to prevent "abuse of regulatory power".

Decree No. 10.411/2020 also introduces the requirement for all agencies and entities conducting RIA to carry out *ex-post* evaluations.[830] In line with international best practices, such exercises aim at examining the effects of existing regulations, enabling their update (i.e. amendment or abolishment) where necessary. As previously noted, this tool assists governments in improving regulatory quality and promoting pro-competitive reforms.

However, many normative acts are exempted or waivered from RIA and *ex-post* evaluation by the Decree. While some of these exemptions and waivers are reasonable and in line with international practices,[831] others are too broad or vague and open to excessive discretion, allowing policy makers to circumvent RIA and *ex-post* evaluation obligations too easily.[832] This may undermine the effectiveness of these regulatory management tools.

For instance, besides not covering sub-national government levels, nor the Legislative and Judicial Branches, as already indicated in Law No. 13.874/2019, the Decree states that mandatory RIA and *ex-post* evaluations do not apply to normative acts submitted to Congress, such as executive bills. In addition, decrees are excluded from the scope of Decree No. 10.411/2020. Decrees are relevant legal instruments issued by the President of the Republic to regulate laws and ensure their enforcement. Although in theory they cannot go beyond what is

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[830] In addition, Decree No. 10.139/2019 imposed the review and consolidation of the stock of regulations lower than a decree (e.g. ordinances, resolutions, normative instructions, among others).

[831] For example, the exemptions dealing with budget regulations (OECD. *Regulatory Reform in Brazil, OECD Reviews of Regulatory Reform*. Paris: OECD Publishing, 2022. Available at: https://www.oecd-ilibrary.org/governance/regulatory-reform-in-brazil_d81c15d7-en. p. 110).

[832] FRAZÃO, Ana. Perspectivas das Análises de Impacto Regulatório (AIRs) no Brasil: As exceções e os riscos da desconsideração dos impactos sociais e ambientais. *Jota*, 2 February 2021. Available at: https://www.jota.info/opiniao-e-analise/colunas/constituicao-empresa-e-mercado/perspectivas-das-analises-de-impacto-regulatorio-airs-no-brasil-17022021; OECD. *Regulatory Reform in Brazil, OECD Reviews of Regulatory Reform*.

set out in a law, decrees can regulate laws through different alternative measures, with different impacts on the market, including on competition. The Executive Branch has discretionary powers to choose these regulatory options, and therefore requiring decrees to be subject to RIA and *ex-post* evaluation would improve regulatory quality in Brazil, including as regards the promotion of more competitive markets.

Finally, Decree No. 10.411/2020 stipulates that a regulation remains valid even if it has not followed the provisions of the Decree. This rule seems to undermine the RIA and *ex-post* evaluation system that Law No. 13.848/2019 and Law No. 13.874/2019 aim to establish, as one may question whether these regulatory tools are indeed mandatory.[833]

Particularly regarding ANAC, in the context of the legal changes mentioned above, several regulatory tools were implemented in recent years to improve its policy making process and regulatory quality, some of them directly or indirectly related to pro-competitive evaluations.[834]

For example, RIA was introduced in ANAC's policy making process in 2012, in order to promote more evidence-based regulatory policy.[835] Indeed, the use of RIA aimed at identifying the regulatory problems and the impacts of different options to inform and support decision making on proposed regulatory interventions. However, at the beginning, the rules governing RIA were incipient and limited, and there was no mention to considering the impacts of regulatory proposals on competition.

Furthermore, in 2013 ANAC implemented its regulatory agenda, established every two years with a list of topics that requires priority action in its regulatory-making process.[836] The topics are selected based on their impact, urgency, complexity and resource availability, involving the participation of civil society and private sector. Although the impact on competition is not formally a specific criterion for the selection of topics, it can be a relevant element to be taken into account by ANAC, which has already occurred in practice. For example, the 2023-2024 Regulatory Agenda includes regulation of airport charges, while the

[833] GUIMARÃES, Marcelo Cesar; SILVEIRA, Paulo Burnier da. *op. cit*. pp. 294-295; BINENBOJM, Gustavo. O regulamento da Análise de Impacto Regulatório. *Jota*, 5 January 2021. Available at: https://www.jota.info/opiniao-e-analise/colunas/publicistas/o-regulamento-da-analise-de-impacto-regulatorio-05012021.
[834] ANAC. *Qualidade Normativa.* 2020. Available at: https://www.gov.br/anac/pt-br/acesso-a-informacao/participacao-social/agenda-regulatoria/qualidade-normativa.
[835] Normative Instruction ANAC No. 61/2012.
[836] Normative Instruction ANAC No. 74/2013.

2021-2022 Regulatory Agenda comprised slot allocation and jet fuel supply, resulting in pro-competitive reforms, as mentioned in section 3.1 and 3.3.[837]

Moreover, in 2018 a dedicated unit in charge of regulatory quality was established within ANAC, overseeing all departments engaged in regulatory activities and promoting greater collaboration among these areas.[838] The work of this new unit led to a new regulation on ANAC's regulatory-making process, with new rules on regulatory agenda, management of stock of regulations, RIA and *ex-post* evaluation, in line with Law No. 13.848/2019, Law No. 13.874/2019 and Decree No. 10.411/2020.[839] Guidelines on RIA were also released in 2020, explicitly stating that potential effects on competition must be included in the analysis. These Guidelines also provide for a few elements that can help to develop *ex-post* evaluations.[840]

Over the years, RIA and *ex-post* evaluation have become a common practice within ANAC. The quality of the reviews has also progressively improved, ANAC being one of the sector regulators with more advanced expertise in RIA and *ex-post* assessments.[841] In this context, pro-competitive evaluations have sometimes been included in these reviews.[842]

An interesting example of a RIA/*ex-post* review with pro-competitive evaluation conducted by ANAC concerned the revision of the regulation of slot allocation (former Resolution ANAC No. 338/2014). ANAC clearly considered the impact on competition of the regulation then into force and the alternatives under consideration.[843] The competition effects of the regulation were taken into account throughout the whole regulatory process, including by ANAC's Board of Directors when Resolution ANAC No. 682/2022 was approved.[844] Indeed, one of the main reasons for the regulatory reform – which included the liberalisation of a

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[837] ANAC. *Agenda Regulatória.* 2022. Available at: https://www.gov.br/anac/pt-br/acesso-a-informacao/participacao-social/agenda-regulatoria.
[838] ANAC. *Qualidade Normativa.*
[839] Normative Instruction ANAC No. 154/2020.
[840] ANAC. *Guia Orientativo para Elaboração de Análise de Impacto Regulatório*. Brasília: ANAC, 2020. Available at: https://www.gov.br/anac/pt-br/acesso-a-informacao/participacao-social/agenda-regulatoria/arquivos/guia_air_v00.pdf.
[841] INGIZZA, Carolina. Análise de impacto regulatório ainda engatinha em boa parte das agências reguladoras. *Jota*, 18 October 2023. Available at: https://www.jota.info/executivo/analise-de-impacto-regulatorio-ainda-engatinha-em-boa-parte-das-agencias-reguladoras-18102023.
[842] The list of RIAs conducted by ANAC is available online, although it appears to be outdated (ANAC. *Análise de Impacto Regulatório - AIR*. 2022. Available at: https://www.gov.br/anac/pt-br/acesso-a-informacao/participacao-social/governanca-regulatoria/analise-de-impacto-regulatorio-2013-air).
[843] ANAC. *Nota Técnica nº 12/2020/GTRC/GEAM/SAS - Análise de Impacto Regulatório (AIR) de revisão da resolução ANAC Nº 338/2014*, of 8 December 2020. Available at: https://sei.anac.gov.br/sei/modulos/pesquisa/md_pesq_documento_consulta_externa.php?9LibXMqGnN7gSpLFOOgUQFziRouBJ5VnVL5b7-UrE5QnjQUa0M3gCrkTBgVQJEgAGn0-4noJCQn87qakifoWLltXDm2PNFF-sa1pImXkJsdBw10HiV-4l461TkGjDaMM.
[844] Director Tiago Sousa Pereira's vote, of 6 June 2022, and Director Ricardo Bisinotto Catanant's vote, of 17 June 2022, Administrative Proceeding ANAC No. 00058.047435/2020-12.

secondary slot market and the possibility to establish a slot cap for each airline, as described in section 3.1 – was precisely to increase competition in the sector.

A similar approach was adopted in the regulatory process that led to the reform of the regulation governing on-airport jet fuel supply in 2023, as mentioned in section 3.3. In this example, the starting point of the regulatory change was a pro-competitive exercise conducted in 2019 by a working group composed of ANAC and ANP, outside formal RIA and *ex-post* evaluation. This review aimed at diagnosing regulatory issues and identifying alternatives to reduce regulatory barriers and promote greater competition in the sector.[845] Afterwards, ANAC carried out a RIA/*ex-post* evaluation, in which the impacts on competition took a prominent place.[846] Ultimately, ANAC's Board of Directors approved Resolution ANAC No. 717/2023, highlighting that its main goal was to enhance competition in the supply of jet fuel at airports.[847]

Besides the initiatives to promote competition within its own policy-making processes, ANAC also closely monitors ongoing bills in the Parliament related to the civil aviation sector.[848] In this context, ANAC may provide its technical expertise and advocate for pro-competitive reforms before legislators.

For instance, in the context of its "Simple Flight" programme, ANAC – together with the current Ministry of Ports and Airports – has greatly contributed to the enactment of Law No. 14.368/2022, which simplified and updated several provisions of the Brazilian Aeronautical Code, increasing efficiency and reducing costs for civil aviation in the country.[849] In particular, Law No. 14.368/2022 intended to promote the growth of the airport sector (and indirectly to foster competition between airports) by abolishing the need for prior authorisation from ANAC for the construction of airports.

Over its almost two decades, ANAC has promoted/pushed for significant pro-competitive reforms in the civil aviation sector in Brazil, as illustrated throughout this thesis, often with the involvement of other relevant policy makers, such as the Parliament and the

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[845] ANP; ANAC. *Nota Técnica Conjunta nº 001/2019/ANP-ANAC.*

[846] ANAC. *Nota Técnica nº 39/2020/GERE/SRA*, of 29 June 2020. Available at: https://sei.anac.gov.br/sei/modulos/pesquisa/md_pesq_documento_consulta_externa.php?9LibXMqGnN7gSpLFOOgUQFziRouBJ5VnVL5b7-UrE5ShK4FWSGWHP4ys_TN2OPHqVYt9HXIV7W5ws17MptfO7h1-vzHuDP6Gb3nO_nYwCpDT5jypKt0-beGLuLC0-JTb.

[847] Director Rogério Benevides Carvalho's vote, of 24 April 2023, and Director-President Tiago Sousa Pereira's vote, of 7 June 2023, Administrative Proceeding ANAC No. 00058.029624/2019-61.

[848] See, for instance, ANAC. *Relatório de gestão e atividades - 2022*. Brasília: ANAC, 2023. Available at: https://www.gov.br/anac/pt-br/centrais-de-conteudo/publicacoes/publicacoes-arquivos/relatorio-de-gestao-e-atividades-2022. p. 68; ANAC. *Relatório de Gestão e Atividades - 2021*. Brasília: ANAC, 2022. Available at: https://www.gov.br/anac/pt-br/centrais-de-conteudo/publicacoes/publicacoes-arquivos/ANAC_Relatorio_de_Gestao_e_Atividades_2021_low.pdf. pp. 73-76.

[849] ANAC. *Relatório de gestão e atividades – 2022.* p. 12.

Ministry in charge of civil aviation (currently, the Ministry of Ports and Airports). Nevertheless, there is still room for additional regulatory changes in order to foster more competition in the sector. Improving pro-competitive evaluations is thus crucial for further advancing such reforms.

For instance, although ANAC has made relevant progress in RIA and *ex-post* evaluation, it can still improve such regulatory initiatives. As recognised by ANAC itself, further capacity building efforts are necessary, especially as regards the methodologies to be used in RIA and *ex-post* evaluation.[850]

In addition, implementing a more systematic review strategy could be positive to ensure that regulations remain up to date, effective and efficient, without unduly restricting competition. For instance, incorporating clauses in each regulation (or at least the most relevant ones) that impose regular assessments – similar to the common practice in the European Union, mentioned in section 4.2.1.1 – could facilitate the institutionalisation of these reviews.

Furthermore, while ANAC has increasingly included quantitative analysis within its RIAs and *ex-post* evaluations,[851] this relevant regulatory tool still needs to be further developed.[852] As will be discussed in section 4.2.2, one of the challenges in implementing quantitative methodologies relates to availability of data. Nevertheless, ANAC collects granular firm-level data on the civil aviation industry, which could be better used to carry out more quantitative assessments.

Moreover, as mentioned above, ANAC does not always include pro-competitive evaluations in its RIAs and *ex-post* assessments. On the one hand, this might be attributed to the fact that indeed most regulations do not have the potential to impact competition and therefore do not require a competition review.[853] Yet, even if this is the case, ANAC should consider clearly state in the RIA or *ex-post* evaluation that the proposed or existing regulation is not likely to distort competition. On the other hand, the absence of pro-competitive evaluations may happen, at least on some occasions, when the regulation in question has the potential to impact competition. In fact, undue restrictions on competition can occur unintentionally when the regulations at stake do not focus on economic regulation and not seek

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[850] ANAC. *Qualidade Normativa.*
[851] *Id.*
[852] MARTINS, Maria Luiza Costa. *Simplificação, validação e melhoria nas análises de impacto regulatório e avaliações de resultado regulatório: os exemplos do Reino Unido*. Cadernos Enap, nº 115. Brasília: ENAP, 2022. Available at: https://repositorio.enap.gov.br/bitstream/1/7213/2/Caderno_115_relat%C3%B3rio-completo.pdf. p. 98.
[853] OECD. *Competition Assessment Toolkit - Volume 1: Principles.* p. 34.

to affect competition in any way.[854] Additionally, even when ANAC incorporates pro-competitive evaluations in its RIAs and *ex-post* assessments, the competition analysis is not very robust, which could stem from a lack of expertise in competition matters.

Fostering greater co-operation with CADE and SEAE could allow ANAC to better identify potential anti-competitive effects and to improve its pro-competitive evaluations. Co-operation with civil aviation regulators from other jurisdictions could also be useful in this regard.[855] This could empower ANAC to advocate before other policy makers more actively for further pro-competitive reforms in the civil aviation sector.[856]

Finally, other policy makers, notably the Parliament and the Ministry of Ports and Airports, should also conduct RIA and *ex-post* evaluations for the laws and regulations under their purview. For this purpose, they could improve co-operation with ANAC, CADE and SEAE, which could contribute to these exercises with their expertise on civil aviation, regulatory policy making and competition.

b. Competition advocacy by competition authorities

According to Law No. 12.529/2011 (Brazilian Competition Act), competition advocacy is one of the three pillars of the Brazilian System of Defence of Competition, alongside merger control and the fight against anti-competitive behaviour. The competition advocacy mandate is shared between CADE and SEAE.

Pursuant to Article 19 of Law No. 12.529/2011, SEAE is entitled to promote competition within government entities and society. For instance, this may occur through: (i) opinions on competition aspects of proposed regulations subject to public consultation; (ii) opinions on competition aspects of bills under review in the Parliament; (iii) market studies; and (iv) recommendations to review federal or sub-national laws and regulations that may harm competition. In addition, according to Article 53 of Decree No. 11.344/2023, SEAE can issue opinions on RIAs or *ex-post* evaluations conducted by regulatory agencies or other bodies of

[854] OECD. *Recommendation of the Council on Competition Assessment*.
[855] For instance, the 2012 OECD Recommendation on Regulatory Policy and Governance provides that "governments should co-operate with other countries to promote the development and diffusion of good practices and innovations in regulatory policy and governance" (OECD. *Recommendation of the Council on Regulatory Policy and Governance*).
[856] As mentioned above, the enactment of Law 14.368/2022 illustrates a successful example in this regard and could be replicated in other regulations.

the federal government, carry out RIAs itself and submit proposals for improving regulatory quality.[857]

As mentioned above, Law No. 13.848/2019, Law No. 13.874/2019 and Decree No. 10.411/2020 imposed mandatory RIA and *ex-post* evaluations to be conducted by regulators themselves. In this decentralised system,[858] SEAE can play a relevant role in overseeing and assisting regulators to implement RIA and *ex-post* evaluations in a high-quality standard, as well as ensuring that pro-competitive evaluations are integrated into these exercises.[859] The involvement of SEAE can be particularly relevant in cases where an in-depth competition assessment is required, namely when any of the red flags provided in the OECD Competition Checklist and in Article 4 of Law No. 13.874/2019 are present.

Likewise, CADE – mainly through the Department of Economic Studies and the cabinet of CADE's President – examines bills and proposed regulations with potential impact on competition, issuing opinions to ensure that competition is not distorted. CADE can also conduct market studies and sectoral reviews and issue recommendations for pro-competitive reforms, often in co-operation with sector regulators.[860] In 2020, CADE established a new unit within its Department of Economic Studies, responsible for market analysis and competition advocacy, with the objective of strengthening and institutionalising CADE's competition advocacy activities.[861]

In recent years, both SEAE and CADE have worked in the promotion of competition in the airport sector, through different initiatives that have resulted in increased competition within

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[857] SEAE has issued several guidelines on pro-competitive evaluations, RIAs and *ex-post* assessments. See SEAE. *Guia de Advocacia da Concorrência*. Brasília: Ministério da Economia, 2020. Available at: https://www.gov.br/economia/pt-br/centrais-de-conteudo/publicacoes/guias-e-manuais/defeso/guiaadvocaciaconcorrencia_ascom.pdf; SEAE. G*uia para Elaboração de Análise de Impacto Regulatório (AIR)*; MINISTÉRIO DA ECONOMIA. *Guia Orientativo para Elaboração de Avaliação de Resultado Regulatório – ARR*. Brasília: Ministério da Economia, 2022. Available at: https://www.gov.br/mdic/pt-br/assuntos/air/guias-e-documentos/GuiaARRverso5.pdf.

[858] DOMINGUES, Juliana Oliveira; SILVA, Pedro Aurélio de Queiroz P. da. Lei da Liberdade Econômica e a Defesa da Concorrência. In SALOMÃO, Luis Felipe; CUEVA, Ricardo Villas Bôas; FRAZÃO, Ana (ed.). *Lei de Liberdade Econômica e seus Impactos no Direito Brasileiro*. São Paulo: Revista dos Tribunais, 2020. p. 284.

[859] OECD. *Regulatory Reform in Brazil, OECD Reviews of Regulatory Reform*. pp. 111-112. Indeed, according to the OECD Recommendation on Competition Assessment, competition bodies or officials with expertise in competition should be associated with the process of competition reviews (OECD. *Recommendation of the Council on Competition Assessment*. 2019).

[860] OECD. *OECD Peer Reviews of Competition Law and Policy: Brazil*. Paris: OECD Publishing, 2019. Available at: https://www.oecd.org/daf/competition/oecd-peer-reviews-of-competition-law-and-policy-brazil-ENG-web.pdf. pp. 132-136.

[861] BRAZIL. *Annual Report on Competition Policy Developments in Brazil - 2020*. 2022. Available at: https://one.oecd.org/document/DAF/COMP/AR(2021)39/en/pdf. p. 2. In 2023, CADE released a study aiming to implement a methodology to measure the impact and effectiveness of its competition advocacy initiatives (CADE. *Metodologias de Avaliação das Ações de Advocacia da Concorrência*. Documento de Trabalho nº 004/2023. Brasília: CADE, 2023. Available at: https://cdn.cade.gov.br/Portal/centrais-de-conteudo/publicacoes/estudos-economicos/documentos-de-trabalho/2023/DT_004-Avocacia-da-Concorrencia.pdf).

the industry. For instance, SEAE has participated actively in the process of designing airport concessions.[862] In particular, SEAE issued opinions in favour of cross-ownership limitations with the goal of promoting competition between airports.[863]

SEAE has also played a role in advancing pro-competitive reforms. For example, to provide inputs to ANAC's review of Resolution ANAC No. 338/2014 on slot allocation, SEAE conducted, in partnership with the World Bank, a study on the Brazilian regulation on the topic. Gathering international experiences and examining their applicability to the Brazilian context, the study presented recommendations to regulatory reforms, which were considered by ANAC in the process of developing Resolution ANAC No. 682/2022.[864]

SEAE also contributed to the legislative process leading to the enactment of Law No. 14.368/2022, mentioned above. SEAE provided comments on elements related to competition and regulation, with the aim of achieving a regulatory environment that fosters efficiency and reduces bureaucracy in civil aviation services, with reduced costs for the sector.[865]

Furthermore, a landmark example of competition advocacy initiative carried out by CADE in the airport sector concerns the reallocation of Avianca's slots at São Paulo/Congonhas airport, the most congested airport in the country. In 2019, Avianca – then the fourth largest Brazilian airline – went bankrupt, raising a discussion on how to redistribute its slots at that airport. At the time, the slots at São Paulo/Congonhas were allocated as follows: Latam had 236 slots; Gol, 234; Avianca, 41; and Azul, 26. Resolution ANAC No. 338/2014, the regulation then in force, stated as a general rule that an airline was considered an incumbent if it held more than five daily slots at a specific airport. According to this provision, Azul would be considered an

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[862] See, for instance, SEAE. *Secretaria de Acompanhamento Econômico - SEAE - Relatório de Gestão 2011*. Brasília: Ministério da Fazenda, 2012. Available at: https://www.gov.br/fazenda/pt-br/acesso-a-informacao/auditorias/secretaria-de-acompanhamento-economico-seae/relatorio-de-gestao2011.pdf/view. p. 19; SEAE. *Secretaria de Acompanhamento Econômico - SEAE - Relatório de Gestão 2012*. Brasília: Ministério da Fazenda, 2013. Available at: https://www.gov.br/fazenda/pt-br/acesso-a-informacao/auditorias/secretaria-de-acompanhamento-economico-seae/relatorio-de-gestao-2012.pdf/view. p. 115; SEAE. *Parecer No. 43/2018/COGTS/SUPROC/SEPRAC-MF*, of 11 July 2018. Available at: https://www.gov.br/fazenda/pt-br/central-de-conteudo/notas-tecnicas-e-pareceres/advocacia-da-concorrencia/2018/parecer-43-2018/view.

[863] SEAE. *Nota Técnica nº 23/2017-COGCR/SUCON/SEAE/MF*, of 22 February 2017, available at: https://www.gov.br/fazenda/pt-br/central-de-conteudo/notas-tecnicas-e-pareceres/advocacia-da-concorrencia/2017/nt-23_2017.pdf/view.

[864] SEAE. *Secretaria de Advocacia da Concorrência e Competitividade - Relatório Anual - Ano 2021*. Brasília: Ministério da Economia, 2021. Available at: https://www.gov.br/economia/pt-br/acesso-a-informacao/reg/relatorios-de-gestao-seae/arquivos/relatorio-de-gestao-seae-2021.pdf. pp 41-42; SEAE. *PARECER SEI Nº 20496/2021/ME*, of 21 December 2021. Available at: https://www.gov.br/mdic/pt-br/acesso-a-informacao/reg/advocacia-da-concorrencia/2020-2021/agencia-nacional-de-aviacao-civil-anac/parecer-20496.pdf/view.

[865] SEAE. *Secretaria de Advocacia da Concorrência e Competitividade - Relatório Anual - Ano 2021*. p. 62; SEAE. *Relatório de Gestão - Secretaria de Acompanhamento Econômico - SEAE - 2022*. Brasília: Ministério da Economia, 2022. Available at: https://www.gov.br/economia/pt-br/acesso-a-informacao/reg/relatorios-de-gestao-seae/arquivos/relatorio-de-gestao-seae-2022.pdf/view. pp. 38-39.

incumbent and, consequently, subject to the same treatment as Latam and Gol in the allocation process of Avianca's slots. In practice, this would further increase the market power of Latam and Gol at São Paulo/Congonhas airport.[866]

In this context, CADE, through the Department of Economic Studies, issued an opinion highlighting that this regulatory measure would significantly distort competition. CADE also indicated that, within the regulation in force at the time, it was possible to change the co-ordination parameters, including the definition of new entrants and the percentage of the slots from the pool that must be allocated to new entrants. By adopting a more flexible approach (e.g. considering new entrant airlines with less than 60 daily slots and allocating 100% of the slots from the pool to new entrants), ANAC could increase market contestability, allowing Azul to gain scale – i.e. obtain more slots – and compete more effectively against the two incumbent airlines.[867]

Following CADE's opinion, ANAC implemented a more pro-competitive approach in the reallocation of Avianca's slots at São Paulo/Congonhas airport. Indeed, ANAC decided to allocate Avianca's slots to new entrants first. In addition, it changed the definition of new entrants, which were considered to be airlines with less than 54 daily slots at the airport (i.e. 10% of the airport's total slots).[868] ANAC also decided to review Resolution ANAC No. 338/2014, in order to assess more pro-competitive regulatory measures in this market, which resulted in Resolution ANAC No. 682/2022.[869]

Moreover, in 2021, CADE requested the OECD to conduct a competition assessment of the civil aviation and ports sectors in Brazil. The OECD examined the most relevant pieces of

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[866] CADE. *Nota Técnica nº 23/2019/DEE/CADE*, of 13 June 2019. Available at: https://cdn.cade.gov.br/Portal/centrais-de-conteudo/publicacoes/estudos-economicos/advocacy/QIP-2019/SEI_CADE%20-%200626627%20-%20Nota%20T%C3%A9cnica%2023%20-%2008700003081-2019-32.pdf.

[867] *Id*. It should be mentioned that SEAE also provided ANAC with a similar opinion (see https://sei.anac.gov.br/sei/modulos/pesquisa/md_pesq_documento_consulta_externa.php?9LibXMqGnN7gSpLFOOgUQFziRouBJ5VnVL5b7-UrE5RgrEi3w9COUfh5ONEbxbbL7Aug5SSChn5hcN6dvqzbfDoWjbHBCpvbfrKfbMZ7J2Kae99X0kcwouCjA7gSDBuL).

[868] Thus, Avianca's slots were reallocated to Azul (15 slots) and two other smaller airlines (14 slots to Passaredo and 12 slots to MAP). Latam and Gol did not acquire any slots (ARAÚJO, Gilvandro Vasconcelos Coelho de; GUIMARÃES, Marcelo Cesar. *op. cit.* p. 141).

[869] ANAC's decision No 109 of 25 July 2019, following Acting Director-President Juliano Alcântara Noman's vote, of 8 August 2019, Administrative Proceeding ANAC No. 00058.026533/2019-74. As mentioned above, with the entry into force of Resolution ANAC No. 682/2022, the co-ordination parameters at São Paulo/Congonhas airport were established in ANAC's decision No. 533 of 7 June 2022, according to which: (i) an airline is considered a new entrant if it holds up to 18 daily slots; (ii) 100% of the slots from the pool are first allocated to new entrants; and (iii) one airline must not hold more than 45% of the airport's total slots. After these changes, the allocation of slots at the airport was as follows: Latam (240), Gol (238), Azul (84), Voepass (20) (ARAÚJO, Gilvandro Vasconcelos Coelho de; GUIMARÃES, Marcelo Cesar. *op. cit.* p. 142).

legislation relating to these sectors, and identified some areas where competition could be enhanced. The exercise was carried out in close co-operation with CADE and involved many relevant Brazilian authorities, including ANAC.[870]

In 2022, the OECD released the results of the review, providing the Brazilian government with recommendations for improving the level playing field in the civil aviation and ports sectors. It is worth mentioning that several recommendations related to airport regulations, for instance as regards technical-experience requirements for airport concession auctions, airport cross-ownership limitations, harmonisation of airport concession contracts, slot allocation, provision of ground handling services (including jet fuel supply) and airport commercial services.[871] For example, the recommendations on jet fuel supply were taken into account by ANAC to implement pro-competitive reforms in 2023 (namely Resolution ANAC No. 717/2023), as described in section 3.3.2.

This exercise also had an educational purpose by assisting in building up the capabilities of Brazilian authorities (including CADE, SEAE and ANAC) in pro-competitive evaluations. In fact, the OECD conducted workshops to explain the methodology, providing practical examples of successful experiences with competition assessments worldwide, with the aim of incentivising the country to carry out additional reviews on its own in the future.[872]

However, despite the efforts of CADE and SEAE in pushing for pro-competitive reforms in Brazil, including in the airport sector, competition advocacy initiatives could be improved. While this does not specifically relate to the airport industry, developments in competition advocacy more broadly could greatly benefit that sector, contributing to a more pro-competitive airport regulation in Brazil.

Both CADE and SEAE have concurrent competition advocacy competences, which increases the number of public officials responsible for competition advocacy and enhances the dissemination of competition expertise within the government structure. Nonetheless, this institutional set-up carries the risk of duplicative actions and uncoordinated approaches, for instance with different or even conflicting conclusions on the same issue.[873] .

These risks are aggravated by the fact that co-operation between CADE and SEAE is very limited in practice. For instance, there is no clear separation of tasks and the establishment of a common competition advocacy agenda. This may result in instances where neither of the

[870] See https://www.oecd.org/competition/oecd-competition-assessment-reviews-brazil.htm.
[871] OECD. *OECD Competition Assessment Reviews: Brazil.*
[872] *Ibid.* p. 236.
[873] *Ibid*. p. 133.

authorities actively work to foster pro-competitive reforms, while in other cases both agencies intervene (once again, with a risk of divergent views).

Therefore, CADE and SEAE should enhance co-ordination (for instance by defining more clearly their tasks), also increasing co-operation with policy makers, such as sector regulators. A new set-up could also be envisaged in the future, aiming at concentrating all competition advocacy powers within a single body. CADE seems to be best placed to perform this function, considering its status as an independent agency and its ability to leverage the sectoral expertise developed in competition enforcement cases.[874]

Besides the institutional design issue mentioned above, current competition advocacy initiatives are also limited. In general, CADE and SEAE adopt a more reactive approach, mainly responding to ongoing regulatory reforms. For example, SEAE issues an opinion on all public consultations opened by ANAC (and all other federal regulatory agencies), although the assessment is typically not deep. Furthermore, SEAE's role in overseeing RIAs and *ex-post* evaluations carried out by the federal government – including regulatory agencies and other policy makers – remains limited. Likewise, CADE often submits opinions on bills under review in the Parliament that may have an impact on competition. Most of these advocacy initiatives rely on qualitative analyses, and very few quantitative assessments have been developed, despite their crucial role in the regulatory policy making (see section 4.2.2 below). In addition, there is no clear and structured follow-up of the implementation of advocacy activities, which would also increase the effectiveness of these exercises.

Moreover, CADE and SEAE have conducted very few market studies and sectoral reviews. They should engage more frequently in such initiatives, taking a more proactive role in proposing pro-competitive reforms, for instance to ANAC and other policy makers such as the Parliament and the Ministry of Ports and Airports. For this purpose, CADE and SEAE could establish a more consistent advocacy strategy, with definition of priority areas, such as ANAC's regulatory agenda mentioned above, in which the airport sector could be considered. Enhancing international co-operation with foreign competition authorities (e.g. by sharing successful experiences in competition advocacy and pro-competitive reforms) could also contribute to this process.

[874] A common argument against this proposal is that SEAE is part of the Ministry of Finance, being involved in all legislative and policy issues. Therefore, SEAE might respond more efficiently to regulations that could restrict competition and leverage its political and budgetary influence to promote more pro-competitive reforms (OECD. *OECD Peer Reviews of Competition Law and Policy: Brazil*. pp. 132-133).

4.2.2 Quantification of benefits from pro-competitive reforms

As previously mentioned, when a regulation may potentially restrict competition, pro-competitive evaluations involve identifying regulatory options that can achieve the relevant public policy objective in question and then comparing these alternatives, by balancing their costs and benefits, in order to select the least restrictive measure.

In this context, one important element of pro-competitive evaluations (and of RIAs and *ex-post* evaluations more broadly) concerns the quantification of costs and benefits that may arise following the implementation of regulatory reforms. Quantitative methods enable a better comparison between regulatory alternatives, often as a complement to qualitative analysis, being a crucial tool to improve evidence-based policy making.[875]

Quantitative assessments entail careful and rigorous use of data to estimate the benefits of a specific regulatory alternative vis-à-vis others, providing a sense of relative importance of preferring options (i.e. the value of benefits). This also provides a strong argument in favour of pro-competitive reforms, being more difficult to be challenged than qualitative assessments. Thus, quantitative analysis tends to be the preferred method for particularly significant or controversial matters.[876]

Quantitative methods are relevant in both *ex-ante* and *ex-post* evaluations. In the case of *ex-ante* reviews, quantifying the potential benefits and costs of an intervention aims to predict the outcomes of a regulatory reform, given assumptions on individual behaviour and markets. In this context, quantitative analysis can help deciding which regulatory option to select and implement. On the other hand, in *ex-post* assessments, quantitative methods are based on actual data gathered before and after the implementation of a regulatory reform. In this case, quantitative analysis seeks to measure the real impact of regulatory reforms, helping to understand their effectiveness and eventually suggesting the need for further changes.[877]

Data subject to quantitative exercises often include consumer benefits, costs, employment, output, productivity, time and profitability. These involve monetary variables (e.g. costs), variables that can be converted into monetary measures (e.g. consumer benefits) and also primarily non-monetary variables that can be monetised (e.g. employment).[878]

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[875] OECD. *Recommendation of the Council on Regulatory Policy and Governance.*
[876] OECD. *Competition Assessment Toolkit - Volume 3: Operational Manual*. pp. 81-82.
[877] KHANDKER, Shahidur R.; KOOLWAL, Gayatri B.; SAMAD, Hussain A. *Handbook on Impact Evaluation: Quantitative Methods and Practices*. Washington D.C.: The World Bank, 2010. Available at: https://openknowledge.worldbank.org/entities/publication/f89faa3e-3aba-5b06-ab9c-5fc4dce9be59. p. 4.
[878] OECD. *Competition Assessment Toolkit - Volume 3: Operational Manual*. pp. 91-92.

Nevertheless, quantitative analysis also poses significant challenges and has its limits. For instance, it demands more technical skills and is more time consuming. This approach also requires significant data to be conducted, which is not always available or of good quality. Furthermore, some impacts can be practically unmeasurable (e.g. equity, fairness and distributional effects). Thus, quantitative methods are typically reserved to complex or controversial issues, as a supplementary element to qualitative analysis.[879]

There are different methods that can be used to quantify the impacts of regulatory reforms. According to the subject of the regulation, the type of data available (or potentially available) and the time to perform the exam, these methods can vary from simple exercises to complex ones, relying on econometrics and more sophisticated analysis. Simple methods to establish quantitative estimates provide results that are comprehensible, testable and transparent, usually being more accessible and persuasive to policy makers than complex methods. Examples of simple methods include price comparisons, results from regulatory reforms in other jurisdictions and experiments. A more complex methodology involves estimating the effects of regulatory changes on consumer surplus, based on changes from one point on the demand curve to another (i.e. change in equilibrium approach). This is particularly appropriate for regulatory reforms that have an effect on supply and/or price.[880]

The use of quantitative analysis can be found in international experiences involving pro-competitive evaluations. The European Commission, for example, usually seeks to apply quantitative methods when reviewing EU regulations. For instance, the assessments on Regulation No. 95/93, governing slot allocation, carried out quantitative analysis of potential regulatory reforms.

As mentioned in section 3.1.3, one of these studies quantified the producer and consumer benefits of the introduction of secondary slot trading at European airports, based on previous international experiences. The assessment compared the forecast for 2025 without slot trading with the post-trading forecast, indicating the marginal impact on slot use. The conclusion was that the regulatory reform would improve consumer welfare by EUR 31 billion annually (at 2006 rates). It also estimated that producer welfare would increase by EUR 1.2 billion annually. In addition, the study estimated that secondary slot trading would improve the finances of major airports by around 7%, significantly benefiting economies around these airports, although the overall impact on the EU economy was likely to be limited. Moreover,

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[879] *Ibid*. pp. 81-82; KHANDKER, Shahidur R.; KOOLWAL, Gayatri B.; SAMAD, Hussain A. *op. cit.* pp. 28-29; OECD. *Recommendation of the Council on Regulatory Policy and Governance.*

[880] OECD. *Competition Assessment Toolkit - Volume 3: Operational Manual*. pp. 90, 94-106.

the quantitative analysis suggested that the regulatory changes could lead to an increase of 7.2% in passenger numbers and an increase of 17.1% in terms of revenue passenger kilometres, leading to additional 51.6 million passengers being carried at European congested airports in 2025.[881]

The Impact Assessment prepared by the European Commission, which underpinned the proposal for a new slot allocation regulation in 2011, also included a quantitative analysis of the three regulatory options in question. The Commission estimated the operational impact of each alternative in terms of impact of passengers carried, flights operated and average flight length, calculating economic, social (employment) and environmental effects. The option with the greater benefits involved the incorporation of market-based mechanisms (for instance, an explicit provision for secondary trading), as well as pro-competitive proposals, including reviewing the new entrant rule and making the criteria for granting grandfather rights slightly stricter. The estimates indicated that these changes would result in an average annual increase of 1.6% (or 23.8 million) in the number of passengers carried, a net economic benefit of EUR 5.3 billion and the creation of 62 000 full-time jobs, for the 2012-2025 period. Nevertheless, it was also estimated that the regulatory reform would negatively impact CO_2 emissions due to the greater number of flights.[882]

In The United Kingdom, the CMA used quantitative methods in an *ex-post* evaluation of the interventions of the former Competition Commission on BAA airports in the late 2000s, resulting in the sale of Gatwick, Edinburgh and Stansted airports, in 2009, 2012 and 2013, respectively. The CMA conducted an exercise to quantify the benefits that passengers have experienced with the implementation of these changes. It was identified that, from 2009 to 2015, the three divested airports had between 25 and 34 million additional passenger journeys, accounting for an average increase of 9% to 12%, much higher than non-divested airports. The estimated growth in value terms between 2009 and 2015 was GBP 295 million, without taking into account other non-quantifiable benefits, such as service improvements and efficiency gains. The benefits were estimated to achieve GBP 607 million by 2020.[883] This quantitative

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[881] MOTT MACDONALD. *op. cit.*

[882] EUROPEAN COMMISSION. *Commission Staff Working Paper - Impact Assessment Accompanying the document Proposal for a Regulation of the European Parliament and of the Council on common rules for the allocation of slots at European Union airports (Recast)*; STEER DAVIES GLEAVE. *European Commission Impact assessment of revisions to Regulation 95/93, Final report (sections 1-12)*.

[883] CMA. *BAA airports: Evaluation of the Competition Commission's 2009 market investigation remedies*. pp. 10-12. These figures resulted from the analysis in which Glasgow and Heathrow were included in the control group of comparator airports. The numbers would be even higher if Glasgow and Heathrow were omitted from the control group, which could be adequate since they were affected by the CC remedies, although not directly subject to them.

analysis complemented the qualitative assessment carried out by the CMA, reinforcing that the reforms implemented in the airport sector was indeed pro-competitive, significantly benefiting consumers and the economy as a whole.

Furthermore, in the pro-competitive evaluations carried out by the OECD in specific jurisdictions, the benefits of the implementation of recommended regulatory reforms are examined quantitatively, whenever feasible, more commonly by estimating the potential consumer benefits.[884]

For instance, in the exercise carried out in Brazil, the OECD quantified the impact on airfare of the implementation of a recommendation to reform the jet fuel supply regulation to ensure open access for new on-airport suppliers, promoting entry and lowering prices through more competition. The consumer benefit was calculated for selected airports accounting for around a third of air traffic in Brazil. The exercise used the following data: percentage change in airfare prices due to new entry into the jet fuel supply market (based on a market test conducted in a previous merger case in Brazil), airfare revenue at selected airports (based on seat and airfare data released by ANAC), price elasticity of demand for air travel (based on literature estimates for the Brazilian industry, also in line with international estimates) and pass-through from the fuel-cost reduction to the airfares (based on literature for airlines and jet fuel). The study concluded that the estimated aggregated consumer benefit from 2022 to 2032 would be between BRL 896 million to BRL 1 351 million.[885]

However, as described in section 4.2.1.2, the use of quantitative methods in pro-competitive evaluations is not very common in Brazil, either when they are carried out by policy makers (such as ANAC) or by competition authorities (CADE or SEAE). Increasing the quantification of benefits, particularly in the most significant or controversial cases, would make pro-competitive evaluations more sophisticated and robust, strengthening the persuasive value of such exercises and ultimately resulting in more pro-competitive reforms. As mentioned above, ANAC has access to substantial pre-collected data on the civil aviation sector, regularly gathered from regulated firms, which can help overcome one of the main challenges in conducting quantitative analysis.

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[884] All competition assessment exercises conducted by the OECD are available at: https://www.oecd.org/competition/assessment-toolkit.htm.

[885] OECD. *OECD Competition Assessment Reviews: Brazil.* pp. 111-114.

4.2.3 Market investigations

A few jurisdictions, such as Iceland, Mexico and the United Kingdom, have introduced market investigations, a tool other than enforcement and advocacy activities aiming at further promoting competition. Market investigations are used to analyse the effectiveness of competition in a market or sector as a whole (e.g. structural aspects and the behaviour of customers) rather than a single dimension or specific undertakings within it.[886]

Market investigations are somehow similar to market studies, as both involve broad-based assessment of competition conditions in specific markets or sectors to identify causes of competition issues, outside the context of a merger review or anti-competitive investigation, and therefore are not appropriate to scrutinise the individual behaviour of firms. On the other hand, while market studies are essentially a tool to inform competition advocacy (resulting in non-binding recommendations to public and/or private agents) and enforcement (if evidence of anti-competitive behaviour is detected), market investigations enable competition authorities to impose structural and/or behavioural remedies if competition distortions are identified. Therefore, market investigations can be a more powerful instrument for market reforms.[887]

Unlike enforcement against anti-competitive behaviour, a conclusion from a market investigation indicating that features of a market negatively impact competition does not mean that the investigated firms are guilty of wrongdoing. In fact, a market investigation may require changes in a firm's future behaviour, but it does not amount to sanctions for past conduct nor to the payment of compensation to anyone harmed by the practice under investigation.[888]

It should be noted that the remedial powers incorporated in market investigations go beyond traditional competition law approaches, being closer to sector regulation tools – or what has been mentioned above as regulatory competition law. Indeed, market investigations provide competition authorities with the power to shape markets and direct private behaviour, being a robust tool for market control.[889]

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[886] OECD. *Market Studies: The Results of an OECD Survey - Note by the Secretariat*. 2015. Available at: https://one.oecd.org/document/DAF/COMP(2015)7/en/pdf. p. 20.
[887] *Ibid*. p. 20; OECD. *Market Studies Guide for Competition Authorities*. Paris: OECD Publishing, 2018. Available at: https://www.oecd.org/daf/competition/OECD-Market-Studies-Guide-for-Competition-Authorities-2018.pdf. p. 23; DUNNE, Niamh. *Competition Law and Economic Regulation.* pp. 279-280.
[888] WHISH, Richard. Market Investigations in the UK and Beyond. In MOTTA, Massimo; PEITZ, Martin; SCHWEITZER, Heike (ed.). *Market Investigations - A New Competition Tool for Europe?* Cambridge: Cambridge University Press, 2022. p. 220.
[889] DUNNE, Niamh. *Competition Law and Economic Regulation.* p. 294.

However, competition authorities cannot impose top-down regulatory reforms to public authorities (e.g. to abolish or reform anti-competitive regulations), but rather submit recommendations thereof – from this perspective, market investigations are not significantly different from market studies. Moreover, unlike sector regulation, remedies applied through market investigations should focus on creating opportunities for competition to develop and must not aim at achieving non-competition objectives, such as universal service or environmental protection.[890]

Market investigations are subject to the general criticisms against a more pro-active use of competition law as regulatory instrument, as mentioned in the introduction of Chapter 4. For instance, it is argued that this tool can give competition authorities substantial power, while liberating them from both the restrictions of the discrete competition law prohibitions and the need for political support inherent in sector regulation.[891]

Although market investigations are not designed to be used in relation to anti-competitive firm behaviour – which should instead be addressed through competition enforcement – there is a risk that this remedial power is applied against a single firm, circumventing limitations within competition law enforcement and possibly usurping the latter.[892]

Additionally, there is not always legal certainty regarding what can be qualified as competition distortion to justify intervention from the competition authority. It is also argued that the procedures of market investigations are often non-adversarial, preventing investigated parties from exercising the full rights of defence available in anti-competitive behaviour cases – although they have some rights, such as the opportunity to understand how the investigation is affecting them and to be consulted before the conclusion of the investigation. Moreover, the fact that market investigations can only take into account market elements that restrict competition prevents non-competition factors from being balanced against competition objectives. This can particularly impact regulated markets, in which regulation is often necessary to achieve non-economic goals, sometimes to the detriment of competition. In this context, involving sector regulators in market investigations within regulated sectors could ensure that competition and regulatory policies are not contradictory.[893]

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[890] *Ibid.* pp. 285-288.
[891] *Ibid.* p. 294.
[892] *Ibid.* pp. 289, 291. For example, this could be the case of the BAA market investigation, discussed below.
[893] *Ibid.* pp. 291-293; OECD. *Market Studies: The Results of an OECD Survey - Note by the Secretariat*. p. 23; OECD. *OECD Peer Reviews of Competition Law and Policy: Mexico*. Paris: OECD Publishing, 2020. Available at: www.oecd.org/daf/competition/oecd-peer-reviews-of-competition-law-andpolicy-mexico-2020.htm. pp. 65-66.

In any case, if used with caution while guaranteeing due process and the rights of defence, market investigations are a powerful tool to enhance competition, including in the airport sector, as illustrated by examples from jurisdictions that provide for such an instrument. These experiences could also inspire Brazil to consider incorporating market investigations in the future.

For example, as mentioned in section 2.5.1, the former Competition Commission conducted a market investigation into the supply of airport services in the United Kingdom to assess whether that market prevented, restricted or distorted competition. In 2009, the CC concluded that the BAA common ownership of airports gave rise to adverse effects on competition related to the supply of airport services by BAA. To address the negative effects on competition, the CC imposed structural remedies consisting of divestments by BAA of airports in the region of London and Scotland. It also presented recommendations to the Department for Transport for improving the economic regulation of airports.[894]

These remedies resulted in the sale of Gatwick, Edinburgh and Stansted airports, in 2009, 2012 and 2013, respectively. In addition, the Civil Aviation Act 2012 addressed the recommendations on the economic regulation of airports. As described in sections 2.5.1 and 4.2.2, the implementation of these measures enhanced competition and consumer welfare in the United Kingdom, as confirmed by the CMA in an *ex-post* evaluation carried out in 2016 on the package of remedies imposed in the BAA market investigation.[895]

Furthermore, as referred to in section 3.3.1, in 2023 COFECE concluded a market investigation on the jet fuel market in Mexico, including the production, import, storage, transportation, distribution, retail and related services. According to COFECE, there were various barriers to competition in that market, affecting airlines and consumers. In particular, COFECE highlighted the fact that the SOE ASA was vertically integrated in various market segments and did not effectively complete functional, operation and accounting separation. COFECE imposed behavioural remedies on ASA, which was required to make a clear distinction in the separation of functions, procedures and staff in the different market segments in which the SOE operates. COFECE also submitted several recommendations to public authorities regarding the implementation of pro-competitive reforms in the jet fuel market.[896]

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[894] CC. *op. cit.* pp. 14-15.
[895] CMA. *BAA airports: Evaluation of the Competition Commission's 2009 market investigation remedies*.
[896] COFECE. *Cofece determined the existence of barriers to competition in the relevant markets of the value chain of jet fuel.*

Moreover, as mentioned in section 3.1.3.2, in 2017 COFECE concluded a market investigation on slot allocation at Mexico City International Airport. COFECE understood that landing and take-off services, as well as the use and control of platforms by airlines at that airport characterised an essential facility. In addition, according to COFECE, the management of slots of AICM was producing anti-competitive effects in the air transport market. Thus, the airport operator was required to allocate slots through auctions, in accordance with the Airports Law. COFECE also presented recommendations to Mexican authorities, particularly suggesting that the Parliament should amend the regulation on slot allocation to establish an independent slot co-ordinator.[897] However, the Mexican government implemented regulatory changes in opposition to COFECE's decision, and the Mexican courts ultimately ruled that COFECE could not replace the sector regulator in regulating access to essential facilities.[898]

Similarly, in the early 2010s, the Icelandic Competition Authority (ICA) also conducted a market investigation on slot allocation at Keflavik airport. In its conclusion, in 2013, the ICA indicated that the incumbent Icelandic air carrier – which held a high market share and even a monopoly in some of the most important routes – had a priority not only in the allocation of pre-existing slots (due to grandfather rights), but also in the allocation of new slots. According to ICA, the slot co-ordinator had not considered competition when the new slots were allocated, which prevented other airlines from entering the market, thereby distorting competition to the detriment of consumers. The ICA ordered the airport operator to allocate slots to new entrants, enabling them to compete with the incumbent airline. Nonetheless, ICA's decision was later overturned by the Icelandic courts, which ruled that the competition authority had no powers to intervene in the slot allocation process, carried out by an allegedly independent entity.[899]

These cases illustrate that the effectiveness of market investigations may be more challenging and limited in regulated sectors, especially when they do not involve close interaction with sector regulators. This further emphasises the importance of co-operation between competition authorities and sector regulators in market investigations within regulated sectors, as mentioned above.

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[897] COFECE. *DATOS relevantes de la Resolución emitida en el expediente IEBC-001-2015 por el Pleno de la Comisión Federal de Competencia Económica*.

[898] MEXICO. *Interactions between Competition Authorities and Sector Regulators - Contribution from Mexico*, OECD Global Forum on Competition. 2022. Available at: https://one.oecd.org/document/DAF/COMP/GF/WD(2022)20/en/pdf. p. 8.

[899] ICELAND. *Airline Competition - Note by Iceland*. OECD Competition Policy Roundtable. 2014. Available at: https://one.oecd.org/document/DAF/COMP/WD(2014)45/En/pdf.

4.3 Conclusion of Chapter 4

Competition law, through both enforcement and advocacy initiatives, can influence sector regulation, contributing to the development of pro-competitive regulatory frameworks.

Competition law enforcement can shape pro-competitive regulation through remedies imposed in merger control and investigations of anti-competitive practices. Competition law has increasingly departed from its traditional model, incorporating procedures and substantive elements of sector regulation with the aim of achieving more pro-competitive markets rather than merely preventing anti-competitive consolidation and behaviour. This has been called regulatory competition law.

When enforcing competition law, competition authorities can adopt a more pro-active approach and implement regulatory, less traditional remedies to complement sector regulation when the latter is not effective or does not address the problems in question. In those cases, competition enforcement imposes regulatory obligations on market players to prevent the misuse of market power, thereby improving sector regulation. In the airport sector, such interventions have already been undertaken, for instance, to ensure a better use of airport slots and to guarantee open access to on-airport jet fuel supply infrastructures.

However, as competition enforcement focuses on specific conduct(s) of individual market player(s), sector regulation may be better suited to address certain market problems, providing a more thorough and efficient approach to remedying the issues, while also ensuring that all agents are subject to the same rules. In such instances, competition enforcement only provides a temporary solution until regulatory reforms are implemented, often in line with the content previously applied by competition authorities. In this context, competition enforcement can underscore the existence of market issues that require sector regulation and push for its adoption accordingly.

Moreover, when competition authorities apply regulatory remedies, they must do so cautiously to avoid invading the competences of sector regulators, which could lead to institutional conflicts and divergence between competition and regulatory policies. This suggests that competition authorities must closely interact with sector regulators in such circumstances.

Besides competition enforcement, competition advocacy can also play a pivotal role in shaping pro-competitive regulation. Indeed, pro-competitive evaluations seek to identify potential competition restrictions and suggest alternative ways to prevent or mitigate those

harms. These exercises can be conducted by policy makers themselves (e.g. sector regulators, government ministries or legislators) or by competition authorities and other government authorities (e.g. sector regulators when they are not the competent body in question), for instance through *ex-ante* and *ex-post* evaluations, as well as opinions on proposed regulations and market studies or sectoral reviews. Competition assessments have proven to be effective instruments in pushing for regulatory reforms to foster competition, including in the airport sector, for instance as regards slot allocation, economic regulation of airport charges and jet fuel supply.

At least for the most complex and controversial cases, in addition to qualitative assessments, employing quantitative analysis to identify the benefits that may arise or have arisen from pro-competitive reforms is a relevant tool to strengthen competition reviews and to better persuade policy makers to implement such reforms. Close co-operation between competition authorities and policy makers in the area of competition advocacy is also important to ensure a more efficient and complementary approach to pro-competitive evaluations.

Lastly, certain competition authorities can conduct market investigations, enabling them to examine a market or sector and impose regulatory remedies to address competition issues even in the absence of any competition infringement. If well implemented, avoiding bypassing traditional competition law limitations while respecting due process and the rights of defence, market investigations can be a powerful instrument for enhancing competition, as illustrated in some cases within the airport sector.

CONCLUSION

This thesis has demonstrated the emergence of a pro-competitive regulatory approach in the airport sector worldwide in the past decades. In fact, airport regulation has increasingly incorporated competition policy in its policy-making process, fostering competition, both between and within airports, and leading to lower prices, better quality products and services, economic growth and job creation.

Some examples analysed in the previous chapters illustrate this trend. For instance, airport concessions in Brazil have disrupted the market, traditionally controlled by a monopolist in charge of managing almost all airports with no incentives for competition. Since the 2010s, new players have entered the market, and the regulatory provisions limiting cross ownership, particularly in the initial concession rounds, played a crucial role in achieving a diversified market. Currently, various operators from different nationalities and with distinct experiences operate Brazilian airports, engaging in active competition, at least for some services and market segments. This approach was also significant for implementing yardstick competition, allowing the regulator to better monitor airports' performance and creating incentives for airports to enhance efficiency.

Another example concerns airport slots. The bankruptcy of an airline in 2019 prompted the civil aviation regulator to reconsider the regulatory framework for slot allocation, with the involvement of competition authorities and various public and private entities. This has led to the adoption of a new regulation on slot allocation in 2022, incorporating pro-competitive elements with the aim of facilitating entry and increasing contestability at congested airports. For instance, a cap of slots per airline can now be established if deemed necessary to prevent a single carrier from attaining such a dominance, through grandfather rights, that would hinder entry and effective competition. This pro-competitive regulatory measure has already been implemented at the most congested airport in Brazil. Furthermore, the introduction of a market-based mechanism (i.e. secondary market for slot trading), in complement to the traditional administrative system, intends to enhance economic efficiency and competition. This also addresses the fact that the prohibition of commercialising slots could be easily circumvented through mergers and acquisitions. This new regime also includes conditions to prevent abusive behaviour and anti-competitive outcomes, such as the requirement that only slots operated for at least three seasons can be traded.

A third example of pro-competitive reform was the amendment of the regulation governing on-airport jet fuel supply infrastructure. In the past the regulatory framework was not sufficiently clear about the existence of an open-access system to these facilities, and in practice incumbent suppliers prevented newcomers from entering the market. Following investigations by CADE and ANAC, as well as various pro-competitive evaluations, a new regime was finally adopted in 2023. It provides for a detailed governance process to facilitate access for new players to on-airport jet fuel supply facilities and to prevent anti-competitive behaviour in the operation of these infrastructures. These reforms are expected to increase competition in the jet fuel supply market, ultimately reducing airfares.

Nevertheless, this trend towards more pro-competitive regulations is still incipient and must be improved and expanded to cover all aspects of airport regulation. Indeed, the market calls for further reforms. Recent regulatory setbacks, such as the debate on limiting the traffic at a particular Brazilian airport to prevent competition with another airport within the same city, indicate that the pro-competitive regulatory approach mentioned above has not yet been fully institutionalised in Brazil.

As suggested by this thesis, embedding competition policy into airport regulatory policy can be further implemented through competition enforcement and advocacy. Whitin merger control and anti-competitive behaviour investigations, CADE must remain vigilant to potential market failures that are not appropriately addressed by sector regulation, either due to a lack of regulation or inadequate regulation. In such cases, regulatory remedies can be imposed to address these market problems, although this intervention often serves only as a second-best solution until sector regulation is adjusted to tackle the issues. In this context, CADE should closely interact with ANAC and other policy makers in the airport sector to avoid encroaching on the competences of the latter and ensure a consistent approach.

Additionally, if well structured, competition advocacy, primarily through pro-competitive evaluations, can be an effective tool to advance regulation that promotes competition. These exercises can be conducted by the policy maker responsible for designing or reviewing the regulation, typically through Regulatory Impact Assessments and *ex-post* evaluations, or by third parties, such as competition authorities or sector regulators (when they are not the competent authorities in question), in the form of opinions/recommendations to policy makers.

However, policy makers in the airport sector do not consistently carry out pro-competitive evaluations and, even when they do, the assessments are not always of high quality.

It is necessary for legislators, the Ministry of Ports and Airports and ANAC to implement a more systematic review strategy to ensure that airport regulation remains effective and efficient, without unduly restricting competition. For instance, this could be achieved by incorporating obligations that impose regular assessments of regulations, including from a competition perspective. Moreover, greater co-operation with CADE and SEAE could help to improve such exercises, for example as regards the identification of potential harm to competition and the development of less restrictive regulatory alternatives.

On the other hand, most of the time, CADE and SEAE have been reactive in carrying out competition advocacy initiatives, typically responding to ongoing regulatory reforms. They have conducted very few market studies and sectoral reviews on their own initiative, which could result in more pro-active proposals of pro-competitive reforms to policy makers. In addition, CADE and SEAE share concurrent competition advocacy competences, increasing the risk of uncoordinated approaches, for example with different or even conflicting views. Therefore, there should be more co-operation between CADE and SEAE, with a clearer and more strategic definition of tasks – and eventually considering merging both bodies into a single entity.

Furthermore, both policy makers and competition authorities could more frequently, especially in the most significant or controversial cases, seek to quantify the benefits that may arise or have arisen from the implementation of regulatory reforms. By complementing qualitative assessments, quantitative analysis makes competition reviews more sophisticated and robust, serving as a powerful persuasive mechanism to justify pro-competitive initiatives.

The introduction of market investigations, allowing competition authorities to impose regulatory remedies outside the context of merger control and anti-competitive behaviour investigations, as already implemented in a few jurisdictions, could also be an effective tool to address competition distortions regardless of the existence of a wrongdoing.

In conclusion, regulatory and competition policy must be regarded as two sides of the same coin. They are complementary instruments of state intervention to ensure that markets function well and consumers can benefit from cheaper and better products and services. Competition authorities, sector regulators and other policy makers should work together to achieve this objective.

Therefore, it is necessary to establish a common agenda focused on airport pro-competitive regulatory policy in Brazil, integrating all the relevant stakeholders mentioned above. By leveraging the expertise and available instruments of each authority in a constructive

and synergic way, it could be possible to ensure that competition policy is indeed integrated into airport regulation.

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