
The European Commission's consultation on the 2014 Aviation State Aid Guidelines

An economic analysis of airports'
profitability

Prepared for
the ACI EUROPE and the UAF

4 November 2019

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Contents

1	Introduction	1
1A	Structure of this report	2
2	Operating aid to airports	3
2A	Operating aid for airports in the EU and the relationship between airports' size and profitability	4
2B	Analysis of the operating aid state aid rules based on case study examples	8
3	Conclusions	25
A1	Appendix	28

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Figures and tables

Table 2.1	Eligibility for operating aid under the current state aid framework by size of airport	5
Table 2.2	Break-even traffic thresholds by airport size	7
Table 2.3	Characteristics of the airports included in the study	9
Figure 2.1	Aeronautical revenues per passenger (before taking into account incentive payments to airlines) (€)	10
Figure 2.2	Incentive payments per passenger (€)	11
Figure 2.3	Aeronautical revenues per passenger including incentive payments to airlines (€)	12
Figure 2.4	Non-aeronautical revenues per passenger (€)	13
Figure 2.5	Average share of aeronautical revenues relative to non-aeronautical revenues 2014–19 (%)	15
Figure 2.6	Operating costs per passenger (excluding interest, taxes, depreciation and amortisation, €)	17
Figure 2.7	Costs relating to non-economic activities per passenger (€)	19
Figure 2.8	Operating costs per passenger (excluding costs relating to non-economic activities, interest, taxes, depreciation and amortisation, €)	20
Figure 2.9	EBITDA excluding costs relating to non-economic activities and excluding operating aid (€m)	22
Figure A1.1	EBIT excluding costs relating to non-economic activities and excluding operating aid (€m)	28

1 Introduction

- 1.1 In January 2019, the European Commission launched a comprehensive policy evaluation of current state aid rules ('the Fitness Check').¹ This exercise includes the evaluation of the state aid rules in the aviation sector, namely the 2014 Aviation State Aid Guidelines ('the Aviation Guidelines').² The objective of the Commission's evaluation is to gather stakeholders' views on how the state aid rules are working, and whether to further prolong or possibly update the rules.³
- 1.2 In light of these developments, the Airports Council International Europe (ACI EUROPE) and the French Airports Association (Union des Aéroports Français, UAF) have commissioned Oxera to consider specific questions raised by the Commission in relation to the state aid rules for operating aid to airports.
- 1.3 In particular, in this report, we consider the following questions:
- is the transitional period of 10 years (i.e. 2014–24), as set out in the Aviation Guidelines, sufficient to allow airports to reach operational cost coverage by the end of this period?
 - are the aid intensity thresholds for operating aid to airports adequate in view of current market conditions?
- 1.4 To answer these questions, we collected data from a sample of member airports from the ACI EUROPE in various EU member states and the UAF in France. We also engaged with the management of the airports to understand their views on the current state aid rules for operating aid for airports. This report sets out the results from the analysis of the data obtained from the airports considered in this study.

¹ European Commission (2019) 'State aid: Commission to prolong EU State aid rules and launch evaluation', press release, 7 January.

² European Commission (2014), 'Guidelines on State aid to airports and airlines', Communication from the Commission, *Official Journal of the European Union*, C 99/3, 4 April, paras 43 and 25 (12).

³ European Commission (2017) 'Better Regulation Guidelines', Staff Working Document, Chapter IV, Guidelines on evaluation (including fitness checks).

1A Structure of this report

1.5 This report is structured as follows.

- Section 2A sets out the current state aid rules for operating aid to airports, in particular under the Commission's 2014 Aviation Guidelines. We then contrast the different traffic thresholds that are applied by the Commission to define airports' eligibility for operating aid with findings from empirical studies.
 - Section 2B covers the results of the case study analysis undertaken based on a sample of European airports. To examine whether the airports under assessment are able to reach operational cost coverage by the end of the transitional period in 2024, we analyse the airports' revenue and cost drivers separately. The results of the case study analysis provide an indication of whether the current traffic thresholds set by the Commission to determine the eligibility for operating aid are still suitable under the current market conditions.
 - Section 3 provides an overall conclusion and sets out specific policy recommendations in relation to possible future changes to the state aid rules for operating aid to airports.
 - The Appendix presents further details on the results from the case study analysis.
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2 Operating aid to airports

- 2.1 Under the current Aviation Guidelines, the possibility of granting operating aid to airports with traffic between 200,000 passengers per year (ppa) and 3 million passengers per year (mppa) will be phased out in 2024. The Commission assumes that, by April 2024, airports of such size will in general be able to operate profitably. The analysis presented in this section explores whether the transitional period of 10 years is sufficient to allow airports to reach operational cost coverage by the end of this period, and whether there is a continued need for operating aid for smaller airports.
- 2.2 In section 2A, we first set out the current state aid rules for operating aid to airports, including the different traffic thresholds that are applied by the Commission to define airports' eligibility for operating aid. We then assess if the relationship between airports' size and profitability, as implied by the current state aid framework, is supported by findings from empirical studies. Although the Commission assumes that airports with traffic above 200,000ppa are able to become profitable by 2024, as discussed in this section, empirical research suggests that airports are only able to achieve profitability with traffic of approximately 700,000ppa to 1mppa. Notably, one of the key factors that affects an airport's ability to achieve higher traffic throughput is its competitive position within its catchment area.
- 2.3 To complement the results from the empirical research and to further assess the suitability of the traffic thresholds that determine airports' eligibility for operating aid, in section 2B, we undertake case study analysis based on a sample of European airports of different sizes. To examine whether the airports under assessment are able to reach operational cost coverage by the end of the transitional period in 2024, we analyse the airports' revenue and cost drivers separately. As discussed in this section, due to limited possibilities for smaller airports to increase revenues, in particular aeronautical revenues, and due to a high share of fixed costs, the majority of the airports under assessment are unlikely to break-even financially by 2024. As a result, an option would be to increase the current traffic thresholds such that more airports are eligible for operating aid under the GBER.
-

2A Operating aid for airports in the EU and the relationship between airports' size and profitability

2.4 The Aviation Guidelines foresee the possibility for small airports below 3mppa to receive operating aid during a transitional period of 10 years. By April 2024, airports were expected to have reached profitability, and therefore the granting of operating aid is no longer allowed after April 2024 (except under horizontal state aid rules, such as for regional aid).⁴

2.5 The Commission considers that airports' financial viability, and thus their eligibility for operating aid, depends on their size. The Commission defines five distinct size categories (see Table 2.1), that determine the maximum amount of operating aid that airports are allowed to receive. Overall, under the current state aid rules, only airports with traffic below 3mppa are eligible for operating aid.

- For airports with annual traffic between 700,000ppa and 3mppa, the maximum aid intensity is 50% of the airport's initial operating funding gap (i.e. the airport's annual average funding gap in the years 2009–13).⁵
- For airports with annual traffic between 200,000ppa and 700,000ppa, the Aviation Guidelines stipulate a higher aid intensity of 80% of the airport's initial operating funding gap.⁶
- For airports with annual traffic of less than 200,000ppa, operating aid can be granted without prior notification to the Commission under the General Block Exemption Regulation (GBER).⁷ In contrast to the Aviation Guidelines, the GBER does not foresee a phasing out of operating aid for airports, with operating aid allowed to cover 100% of airports' annual losses including a reasonable profit.

⁴ European Commission (2013), 'Guidelines on regional State aid for 2014-2020', 23 July.

⁵ According to para. 25 (23) of the Aviation Guidelines, the 'operating funding gap' is defined as the operating losses of an airport over the relevant period, discounted to their current value using the cost of capital. In other words, the 'operating funding gap' is defined as the shortfall (in net present value terms) between airports' revenues and operating costs.

⁶ Initially, the specific rules for smaller airports were limited for five years, i.e. until 3 April 2019. On 18 December 2018, the Commission extended the specific rules until 3 April 2024, aligning the transitional period for the application of the specific rules for smaller airports with that applicable for airports with more than 700,000ppa. For further details, see European Commission (2018), 'Communication from the Commission concerning the prolongation of the specific regime for operating aid for airports with up to 700 000 passengers per annum provided for in the Guidelines on State aid to airports and airlines', *Official Journal of the European Union*, 2018/C 456/06, 18 December.

⁷ European Commission (2017), 'Commission Regulation (EU) 2017/1084 amending Regulation (EU) No 651/2014 and No 702/2014', Article 56a, 'Aid for regional airports,' 14 June.

Table 2.1 Eligibility for operating aid under the current state aid framework by size of airport

Category of airports	Maximum aid intensity	Reference value	State aid framework
>3mppa (category 4 airports)	0%	-	Aviation Guidelines
700,000ppa–3mppa (category 3 airports)	50%	airport's initial average operating funding gap	Aviation Guidelines
200,000ppa–700,000ppa (category 2 airports)	80%	airport's initial average operating funding gap	Aviation Guidelines
<200,000ppa (category 1 airports)	100%	airport's operating losses and a reasonable profit	GBER

Sources: European Commission (2014), 'Guidelines on State aid to airports and airlines', *Official Journal of the European Union*, C 99/3, 4 April; and European Commission (2017), 'Commission Regulation (EU) 2017/1084 amending Regulation (EU) No 651/2014 and No 702/2014', Article 56a, Aid for regional airports,' 14 June.

- 2.6 A number of empirical airport studies have analysed the relationship between airport size and profitability. Although the results vary, a number of studies indicate that the 'critical traffic threshold' (i.e. the minimum number of passengers at which airports break-even financially and cover their operating costs) is significantly higher than the annual 200,000ppa threshold underpinning the GBER, as outlined below.⁸
- 2.7 Research conducted by the ACI suggests that airports with less than 1mppa are often unable to reach profitability, due to high fixed costs being spread over a limited number of passengers.⁹ This threshold was confirmed by a recent analysis of worldwide airports in 2016.¹⁰ Furthermore, the Commission itself notes in the current Aviation Guidelines that airports with traffic below 1mppa are typically not able to cover their operating costs.¹¹
- 2.8 A study, completed in 2002, analysed competition between airports and found that 'the transition point for an airport to become profitable appears to be

⁸ The empirical studies cited in this report use both Earnings Before Interest and Taxes ('EBIT') and Earnings Before Interest, Taxes, Debt and Depreciation ('EBITDA') as profitability measures. As the Aviation Guidelines define operating costs as excluding depreciation of eligible investment costs, in the case study analysis presented in this report, we focus on EBITDA as the appropriate measure of profitability. However, as the empirical studies measure profitability on both an EBIT and EBITDA basis, we present the EBIT results for the airports considered in this study in Appendix A1. As shown in the Appendix, the choice of the measure of profitability does not affect the conclusions from this report. Furthermore, it should be noted that EBITDA is often focused on by smaller airports to measure profitability, as this is the metric that is specified by the Aviation Guidelines to determine the amount of operating aid that an airport would be eligible to receive. In other contexts, as well as for larger airports, however, a more suitable measure to capture an airport's profitability is a measure of return on assets.

⁹ ACI (2015), 'ACI Economics Report', as cited in Mott Macdonald (2017), 'Air Transport Market 2016', p. 100.

¹⁰ Vogel, H.-A., (2016), 'Challenges of airport economics for financial management', *Journal of Airport Management*, 10:3, pp. 416–35, as cited in Zuidberg, J. (2017), 'Exploring the determinants for airport profitability: Traffic characteristics, low-cost carriers, seasonality and cost efficiency', *Transportation Research Part A: Policy and Practice*, 101, July, p. 62.

¹¹ European Commission (2014), 'Guidelines on State aid to airports and airlines', Communication from the Commission, *Official Journal of the European Union*, C 99/3, 4 April, para. 5.

approximately 500,000ppa'.¹² However, some more recent studies have found that the break-even point for airports has substantially increased since 2002.

- 2.9 In 2012, a study commissioned by the Norwegian Ministry of Transport and Communication found that the level of traffic at which European airports break-even increased from approximately 200,000ppa in 2002 to approximately 800,000ppa in 2010.¹³ The study argued that this was due to an increase in safety and security costs at an EU level. Similarly, a 2013 benchmarking study that covered smaller European airports (with average traffic of approximately 200,000–900,000ppa) reported a significant increase in the level of traffic required for airports to break-even, the level rising from approximately 170,000ppa in 2002 to 460,000ppa in 2009. The 2013 study similarly argued that this was partly due to additional security regulations.¹⁴ The study, however, pointed out that the break-even level of traffic could be significantly lower if operational efficiencies were implemented—such as the outsourcing of ground handling or fuelling services. The study thus implied that, from a profitability perspective, it would be beneficial for airports to outsource these activities.¹⁵ However, some of the airports covered in the case studies in section 2B, report that outsourcing is not a viable option, due to a lack of service providers that are willing to operate at smaller regional airports.
- 2.10 Furthermore, a 2012 study on Spanish airports concluded that if the airports were able to fully exploit opportunities to maximise revenues on a per-passenger basis, the airports would be able to achieve profitability once traffic exceeded 500,000ppa.¹⁶
- 2.11 There are also individual examples where airports with relatively low levels of traffic are able to operate profitably. For example, due to lower wage levels in the Czech Republic, the level of passenger traffic required for Ostrava Airport to break-even was approximately 243,000ppa.¹⁷ Additionally, in 2017, the

¹² Air Transport Group, Cranfield University (2002), 'Study on Competition between Airports and the Application of State Aid Rules', Volume 1, pp. 1-2.

¹³ GAP (2012), 'Comparative study (benchmarking) on the efficiency of Avinor's airport operations. Revised report submitted to the Norwegian Ministry of Transport and Communication', p. 7.

¹⁴ Adler, N. Ülkü, T. and Yazhemy, E. (2013), 'Small regional airport sustainability: Lessons from benchmarking', *Journal of Air Transport Management* 33, October, pp. 22–31.

¹⁵ As mentioned in Adler et al. (2013) similar results were found by Adler and Liebert (2010) and Tovar and Martín-Cejas (2009), which analysed Spanish airports. See Adler, N., Liebert, V. and Yazhemy, E. (2013), 'Benchmarking airports from a managerial perspective', *Omega* 41:2, pp. 442–58; Tovar, B., Martín-Cejas, R. R. (2010), 'Technical efficiency and productivity changes in Spanish airports: a parametric distance functions approach', *Transportation Research Part E: Logistics and Transportation Review*, 46:2, pp. 249–60.

¹⁶ Fageda, X. and Voltes-Dora, A. (2012), 'Efficiency and profitability of Spanish airports: a composite non-standard profit Function approach', Universitat de Barcelona.

¹⁷ Kazda, A., Hromádka, M. and Mrekaj, B. (2017), 'Small regional airports operation: unnecessary burdens or key to regional development', *Transportation Research Procedia*, 28, pp. 59–68.

Commission approved an operating aid measure to Lappeenranta Airport in Finland, which was expected to be economically viable with 230,000–300,000ppa.¹⁸

- 2.12 In contrast, Aarhus Airport in Denmark, which also notified operating aid to the Commission, is only expected to reach cost-coverage by 2019 at higher levels of traffic of approximately 700,000ppa.¹⁹ In addition, in 2019, the Commission approved operating aid to Dortmund Airport, with recorded traffic of approximately 2.3mppa in 2018, and which is located in a region with relatively high labour costs.²⁰ The Commission found that the airport was not profitable and would need until 2023 to reach operational cost coverage.²¹ This example shows, that in some instances, airports with traffic above 1mppa might also not be able to achieve financial profitability, at least in the short to medium term.
- 2.13 Table 2.2 summarises the empirical findings on the level of passenger traffic required for airports to break-even. The results from academic research show that for airports with traffic of up to 1mppa there are a wide range of break-even estimates. Furthermore, airports' profitability can also depend on country-specific factors (e.g. wage levels), which can make it difficult to establish a uniform EU-wide threshold under state aid rules for determining airports' eligibility for operating aid.

Table 2.2 Break-even traffic thresholds by airport size

Break-even traffic thresholds	Reference area	Sources
1mppa	UK/worldwide	Vogel (2016) ACI (2015)
800,000ppa	Europe	GAP (2012)
500,000ppa	(i) Spain (ii) Europe	(i) Fageda and Voltes-Dora (2012) (ii) Air Transport Group (2002) ¹
460,000ppa	Europe	Adler et al. (2013)
166,000ppa ²	Europe	Adler et al. (2013)

Note: ¹ For the purposes of the above table, work load units (WLU) have been converted into passenger numbers (one WLU is equivalent to one passenger or 100kg of freight). ² This assumes that airports operate efficiently, by outsourcing ground handling or fuel services produced in-house, for example.

¹⁸ European Commission, (2017), 'State Aid SA.44097 (2016/N) Finland, Operating aid to Lappeenranta airport', para. 12.

¹⁹ European Commission, (2017), 'State Aid SA.44377 (2016/NN) – Denmark - Aarhus Airport', paras. 21 and 36.

²⁰ According to Eurostat, in 2018, the estimated hourly labour costs in Germany amounted to €34.6 compared to the EU average of €27.4. See: https://ec.europa.eu/eurostat/statistics-explained/index.php/Hourly_labour_costs, accessed on 25 October 2019.

²¹ Based on discussions with the ACI. The Commission's decision regarding operating aid to Dortmund Airport (SA.46373) has not been published in the Official Journal of the EU at the time of writing this report in October 2019. For further details see: https://ec.europa.eu/germany/news/20190705-flughafen-dortmund_de, accessed on 25 October 2019.

Source: Various empirical studies, as outlined above.

- 2.14 Although the Commission defines aid eligibility in terms of airports' size and their ability to achieve profitability, we understand that the main argument for extending the GBER to cover operating aid for small regional airports in 2017 was based on considerations related to the proportionality of the measure, i.e. the positive effects were expected to outweigh any potential impact on competition and trade between member states. The Commission suggested that the measure would be proportionate as the risk of competitive distortions would be low, while at the same time, the administrative burden for public authorities would be reduced.²²
- 2.15 In this context, it is important to assess whether the current thresholds underpinning the GBER and the Aviation Guidelines are still appropriate, including whether airports with more than 200,000ppa are able to reach profitability by 2024, or whether there is a continued need for operating aid. This will be explored in the following section by analysing data received from a sample of European airports.
- 2B Analysis of the operating aid state aid rules based on case study examples**
- 2.16 The case study covers seven small European airports. Based on the Commission's classification of the size of airports (see Table 2.3), five of the airports fall within size category 2 and two airports fall within size category 3 (as of 2018/19). Therefore, in theory, all airports would have been eligible for operating aid during the transitional period between 2014 and 2024.
- 2.17 The airports are located in five different EU countries across Central and Western Europe.²³ Table 2.3 presents an overview of the characteristics of the airports included in the study.

²² European Commission (2017) 'Commission Regulation (EU) 2017/1084 of 14 June 2017', para. 2.

²³ Member airports from the ACI EUROPE and the UAF were selected randomly for this study. As the airport-specific data is confidential, it has been anonymised in the report.

Table 2.3 Characteristics of the airports included in the study

	Passengers (2018/19)	Freight (2018/19) (t)	Main airline¹	Main passenger type	Flights
Airport 1	200,000– 250,000	-	LCC	O&D ² Leisure ² VFR ²	Intra-European and international commercial flights
Airport 2	250,000– 300,000	-	LCC	O&D Leisure/VFR	Intra-European commercial flights
Airport 3	300,000– 350,000	-	LCC	O&D Leisure VFR	Intra-European and international commercial flights
Airport 4	500,000– 550,000	50–100	LCC	O&D Leisure VFR	Intra-European commercial flights
Airport 5	650,000– 700,000	50–100	LCC	O&D Leisure/VFR	Intra-European commercial flights
Airport 6	850,000– 900,000	-	LCC	O&D Leisure/VFR	Intra-European commercial flights
Airport 7	1,500,000– 2,000,000	-	LCC	O&D Leisure/VFR	Intra-European and international flights

Note: ¹ The main airline is defined as an airline with more than a 40% share of total traffic at the airport. ² The abbreviations are as follows: LCC: low-cost carrier, O&D: origin/destination and VFR: visiting friends and relatives.

Source: Oxera analysis, based on airports' financial data.

2.18 The objective of the case studies is to consider specific questions raised by the Commission in the consultation on the 2014 Aviation Guidelines, that is:

- whether the transitional period of 10 years (i.e. 2014–24), as set out in the Aviation Guidelines, is sufficient to allow airports to reach operational cost coverage by the end of this period ;
- whether the categorisation of airports assumed in the Aviation Guidelines to establish the need for operating aid is suitable.

2.19 In light of the characteristics of the airports included in the study, the responses to the above questions discussed in this report are mainly based on analysis of the financial situation of airports with less than 1mppa.²⁴

2.20 To study the evolution of airports' profitability, and, therefore, the need for operating aid, we have analysed the individual components determining operating profitability separately. A consideration of aeronautical revenues, non-aeronautical revenues and operating costs is set out in the sections below.

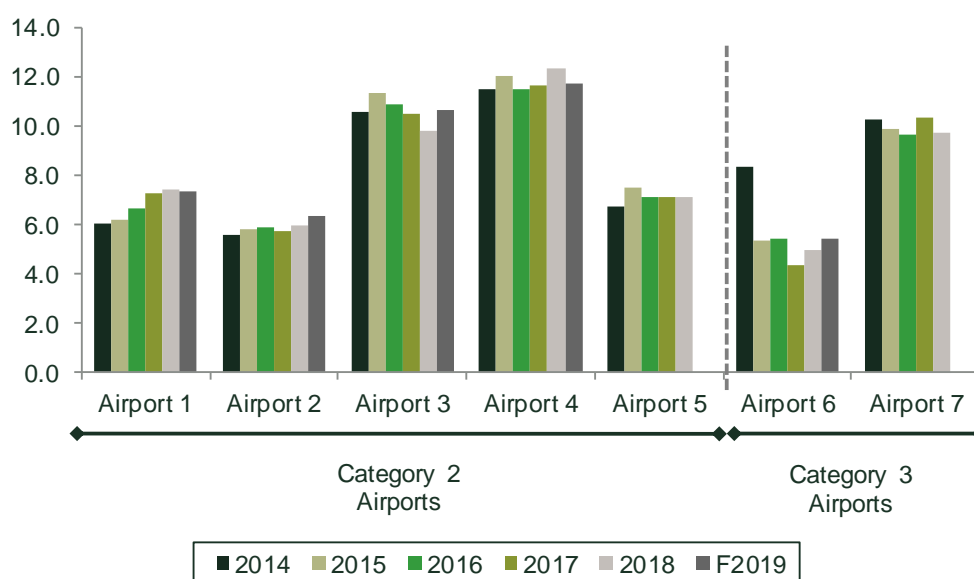
²⁴ In this report, we do not examine in any detail the need for operating aid by airports with more than 1mppa.

2B.1 Trends in aeronautical and non-aeronautical revenues

Aeronautical revenues

2.21 Figure 2.1 provides an overview of the evolution of aeronautical revenues per passenger (before taking incentive payments to airlines into account)²⁵ at the airports in the sample over the period 2014–19. Average aeronautical revenues per passenger vary from €5.7 at Airport 6 to €11.8 at Airport 4. Airports 1 and 2 recorded an increase in aeronautical revenues per passenger of around 20% and 15% respectively over the period, while Airport 6 recorded a significant decrease in aeronautical revenues of around 40% from 2014 to 2015. At the remaining airports, aeronautical revenues per passenger remained broadly constant.

Figure 2.1 Aeronautical revenues per passenger (before taking into account incentive payments to airlines) (€)



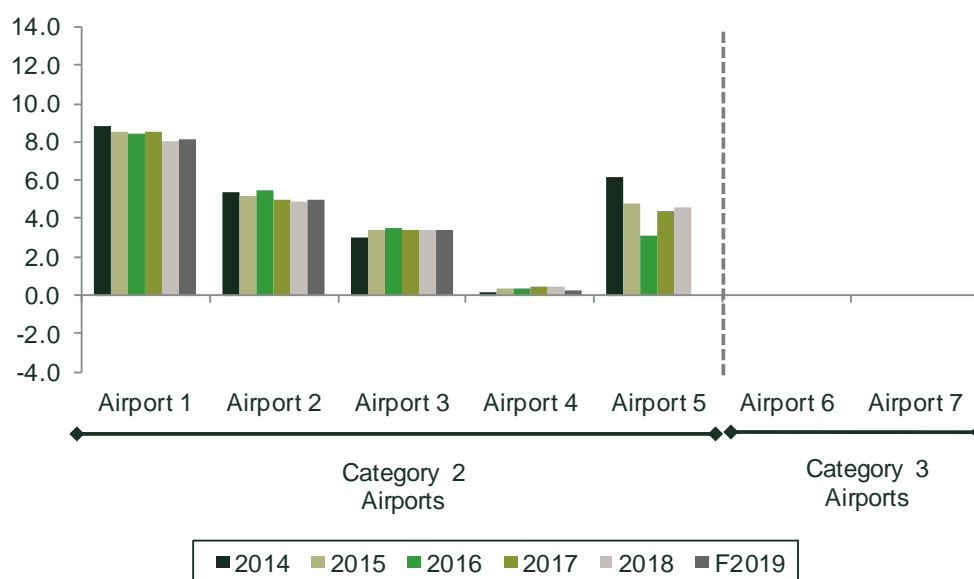
Note: Numbers for 2019 represent forecast values. Forecast values were not available for Airports 5 and 7.

Source: Oxera analysis, based on airports' financial data.

²⁵ Incentives payments to airlines can take two forms. First, airports can offer direct discounts on airport charges. In this case, incentives take the form of foregone revenue, and therefore airports report aeronautical revenues directly net of any incentive payments to airlines. Second, airports can offer incentive payments to airlines separately without discounting airport charges. In this case, incentive payments to airlines need to be deducted from aeronautical revenues to obtain aeronautical revenues net of any incentive payments. Except for Airport 6, all airports included in the study reported incentive payments to airlines separately from aeronautical revenues.

2.22 Airports often offer incentive payments in order to attract airlines, particularly low-cost carriers (LCCs).²⁶ This practice has also been adopted by the airports considered in the case studies. Figure 2.2 shows the incentive payments made by the airports in the sample to airlines, on a per-passenger basis. It should be noted, however, that aeronautical revenues need to be considered net of incentive payments to airlines in order to estimate airports' overall profitability.

Figure 2.2 Incentive payments per passenger (€)



Notes: Airports 6 and 7 do not report any incentive payments to airlines.

Source: Oxera analysis, based on airports' financial data.

2.23 Incentive payments remained broadly constant at Airports 1, 2 and 3 over the period, and amounted, on average, to €8.4, €5.1 and €3.3 per passenger respectively. In contrast, incentive payments at Airport 5 decreased from €6.2 per passenger in 2014 to €4.6 per passenger in 2018.

2.24 While incentive payments at Airport 4 are negligible (on average, €0.3 per passenger), the airport reported that incentive payments are generally offered only for up to five years for airlines opening new scheduled routes. According to the airport, no incentive payments are offered for chartered flights, which account for around one third of traffic.

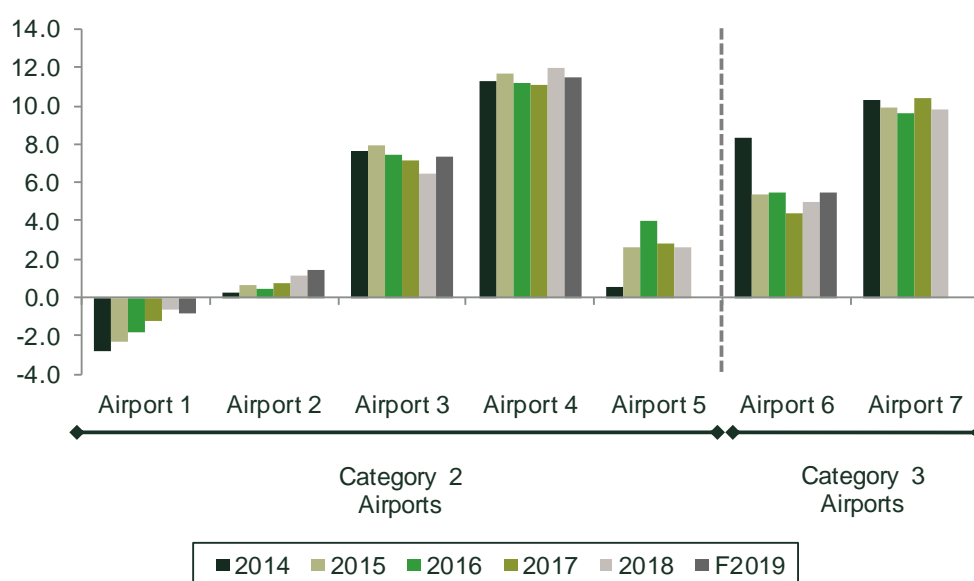
2.25 Airport 6 did not provide information on incentive payments to airlines. However, the substantial decrease in the airport's aeronautical revenues per passenger from 2014 to 2015 could suggest that the airport offered incentive

²⁶ See, for example, Laurino, A. and Beria, P. (2014), 'Low-cost carriers and secondary airports: Three experiences from Italy', *Journal of Destination Marketing and Management*, 3:3, pp. 180–91.

payments to (selected) airlines as a discount on airport charges. The implied discount per passenger at Airport 6 (around €3.4) seems to be broadly in line with the average incentive payment per passenger offered at other airports included in this study (around €4.4).²⁷

- 2.26 Figure 2.3 presents the evolution of aeronautical revenues per passenger including incentive payments to airlines.

Figure 2.3 Aeronautical revenues per passenger including incentive payments to airlines (€)



Source: Oxera analysis, based on airports' financial data.

- 2.27 Due to substantial incentive payments, Airport 1 records negative aeronautical revenues, while those at Airport 2 are only slightly positive, albeit, in both cases, aeronautical revenues have increased slightly over time.
- 2.28 The airports report that they have very limited bargaining power towards the (main) airline(s) operating at the airports. Some airports highlight that due to a number of insolvencies in the LCC market in the recent years, and therefore an increase in concentration in the airlines market, the bargaining power of regional airports has decreased further. In addition, with regard to attracting LCCs, regional airports face increasing competition from hub airports, as some

²⁷ The implied incentive payment per passenger at Airport 6 is calculated as the difference between the average aeronautical revenue per passenger at the airport over the period 2009–14 (€8.5) compared with the period 2015–19 (€5.1). The average incentive payment per passenger offered at other airports (€4.4) is calculated as the average incentive payment per passenger over the period 2014–19 across all airports that report incentive payments, as shown in Figure 2.2.

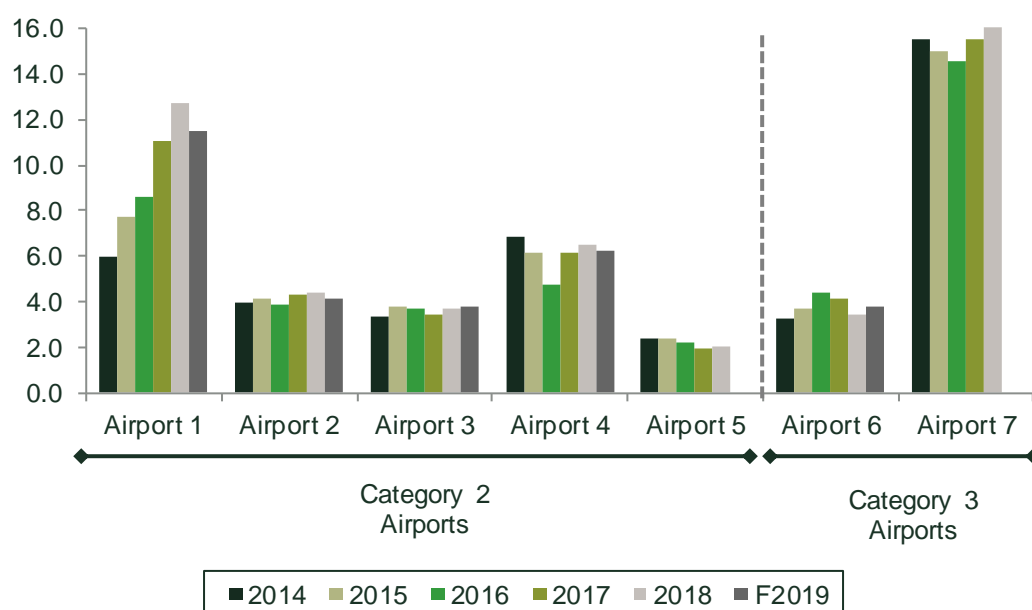
LCCs are increasingly operating from larger hub airports.²⁸ According to the airports, if they were to stop offering incentive payments, airline(s) would most likely stop operating at the airport, risking the closure of the airports.

- 2.29 Economic studies on the impact of LCC activity on airport profitability are not conclusive. However, a number of economic studies point at the increasing vulnerability of an airport if it depends on a single carrier, as it is the case for all except one of the airports considered in this study.²⁹

Non-aeronautical revenues

- 2.30 Figure 2.4 presents the evolution of non-aeronautical revenues at the airports under consideration.³⁰ Average non-aeronautical revenues vary significantly between the airports. At an average of €15.3 per passenger, Airport 7 records the highest non-aeronautical revenues per passenger, which reflects income from fuel and lounge services, as well as other non-aeronautical activities.

Figure 2.4 Non-aeronautical revenues per passenger (€)



Source: Oxera analysis, based on airports' financial data.

²⁸ Oxera (2017), 'The continuing development of airport competition in Europe', prepared for the ACI EUROPE, 15 September.

²⁹ Carlisle, A. (2015), 'Airport business resilience: Plan for uncertainty and prepare for change', *Journal of Airport Management*, 9:2, pp. 118-32; Gillen, D. and Lall, A. (2004), 'Competitive advantage of low-cost carriers: some implications for airports', *Journal of Air Transport Management*, 10:1, pp. 41-50; Laurino, A. and Beria, P. (2014), 'Low-cost carriers and secondary airports: Three experiences from Italy', *Journal of Destination Marketing & Management*, 3:3, pp. 180-91.

³⁰ Non-aeronautical revenues include mainly retail and parking revenues, which vary directly with the level of passenger traffic, as well as rental income, which does not vary directly with the level of passenger traffic.

- 2.31 While non-aeronautical revenues per passenger remained relatively stable over time across the sample, Airport 1 shows a significant increase from €6 per passenger in 2014 to €12.7 per passenger in 2018. This is due to an expansion of commercial, real estate and fuel services at the airport. The airport aims to further develop non-aeronautical revenues in the short-term. Airport 4 also reports that it is exploring a logistics centre and other commercial activities with a view to increasing non-aeronautical revenues. In contrast, non-aeronautical revenues at the other airports remained relatively stable. These airports highlighted difficulties in developing non-aeronautical activities.
- 2.32 According to some of the airports interviewed for this study, their ability to obtain higher non-aeronautical revenues in order to increase profitability seems rather limited. In particular, some airports interviewed for this study link airports' ability to reach financial profitability to the traffic structure of the airport. According to some of the airports, airports with a large share of business passengers are more likely to be profitable. In contrast, the majority of the airports considered in this study have a high share of LCC-passengers. The academic literature on the price sensitivity of LCC-passengers is, however, mixed.³¹ Some studies find that LCC-passengers contribute less to airports' non-aeronautical profits,³² while others report that LCC-passengers spend more at airports than non-LCC-passengers, which might be due to the lack of free in-flight refreshments on LCC-flights. In addition to this, LCC-passengers might utilise more car parking because of the relative remoteness of some secondary airports.³³
- 2.33 Overall, Airport 5 estimates that a level of traffic of 1mppa–1.5mppa would be required to generate sufficient non-aeronautical revenues to balance incentive payments to airlines, and thus to increase the airport's profitability. However, in order to accommodate such levels of traffic, this would require expanding the airport.
- 2.34 In addition, a number of possibilities exist to develop non-aeronautical revenues that are not passenger-dependent. This includes multi-use

³¹ For a literature review on the impact of LCC passengers on non-aeronautical revenues, see Yokomi, M. and Wheat, P. (2017), 'The Impact of Low Cost Carriers on Non-Aeronautical Revenues in Airport: An Empirical Study of UK Airports', *Journal of Air Transport Management*, **64**:A, pp. 77–85.

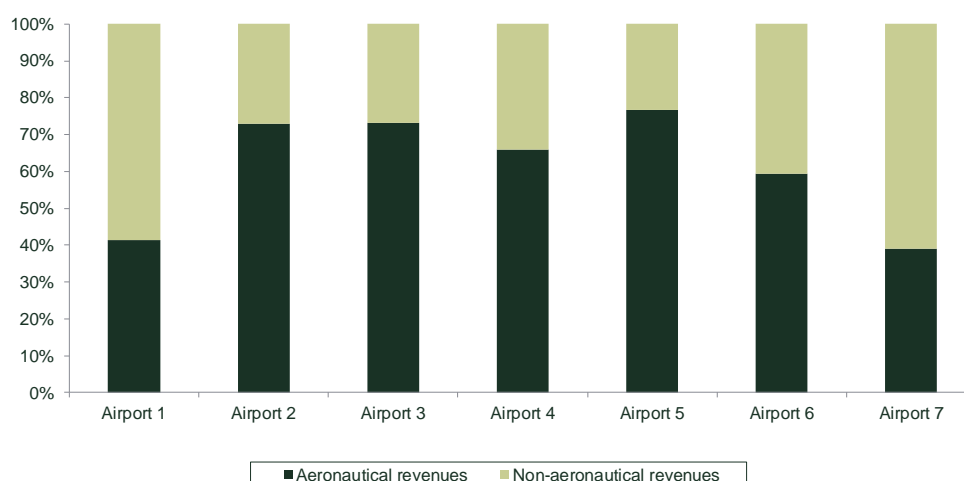
³² Yokomi and Wheat (2017) with reference to Lei, Z. and Papatheodorou, A. (2010), 'Measuring the effect of low-cost carriers on regional airports' commercial revenue', *Research in Transportation Economics*, **26**, pp. 37–43, and Fasone, V., Kofler, L. and Scuderi, R. (2016), 'Business performance of airports: Non-aviation revenues and their determinants', *Journal of Air Transport Management*, **53**, June, pp. 35–45.

³³ *Ibid.*, with reference to Graham, A. (2014), 'Managing airports: an international perspective', *Journal of Airport Management*, **8**:2, pp. 189–90; Gillen, D. and Lall, A. (2004), 'Competitive advantage of low-cost carriers: some implications for airports', *Journal of Air Transport Management*, **10**:1, pp. 41–50.

development of land on the airports' property for the development of general aviation activities, air cargo and logistics centres, hotels, convention centres, office parks, retail centres, and so on.³⁴ However, some airports considered in this study note a lack of demand for such activities and therefore do not plan to expand their activities in this area.

- 2.35 Figure 2.5 presents the average share of non-aeronautical revenues relative to overall revenues (before taking into account incentive payments to airlines) for each airport. The average share of non-aeronautical revenues to total revenues varies from 23% at Airport 5 to 61% at Airport 7.³⁵

Figure 2.5 Average share of aeronautical revenues relative to non-aeronautical revenues 2014–19 (%)



Source: Oxera analysis, based on airports' financial data.

Main findings on the analysis of airports' revenues

- 2.36 While the unprofitable airports included in the sample are similar in terms of traffic and business models, only Airport 1 was able to increase its non-aeronautical revenues. This points to the significant challenges that small airports have in building and expanding non-aeronautical revenue sources.
- 2.37 According to the majority of the airports considered in the study, incentive payments to airlines are necessary to maintain traffic levels. Although such incentive payments limit the airports' scope to maximise aeronautical

³⁴ National Academies of Sciences, Engineering, and Medicine (2010), *Airport Revenue Diversification*, The National Academies Press.

³⁵ The results for Airport 6 as shown in Figure 2.5 may underestimate the airport's share of aeronautical revenues, as data on aeronautical revenues provided by the airport may include discounts on airport charges, which are comparable to incentive payments. If adjustments were to be made to the data on aeronautical revenues provided by Airport 6 such that the airport's aeronautical revenues were to increase by the assumed discount of €3.4 per passenger, this would lead to an average share of non-aeronautical revenues of 30%.

revenues, non-aeronautical revenues play an increasingly important role in diversifying airports' revenue streams.³⁶ This has been confirmed by empirical research, which shows that the promotion of commercial and other non-aeronautical activities helps airports to achieve financial viability.³⁷ While some of the airports included in the study aim to further explore possibilities to increase non-aeronautical revenues, some airports acknowledge that their ability to obtain higher non-aeronautical revenues in order to increase profitability is limited, as there may be relatively limited demand in their catchment area for such services.

- 2.38 Aeronautical revenues are the main income source for small regional airports, as underlined by the results shown in Figure 2.5. For a number of airports, this is not likely to change in the near future, as the airports report to have only limited possibilities to increase non-aeronautical revenues. At the same time, given the high fixed and sunk costs of airport infrastructure, the smaller regional airports have strong reasons to offer incentive payments to attract or maintain traffic, as they are typically not able to currently spread the high share of fixed costs over a sufficiently large number of passengers to break-even. However, high incentives relative to the aeronautical revenues per passenger reduces, rather than increases, airports' actual revenues per passenger.

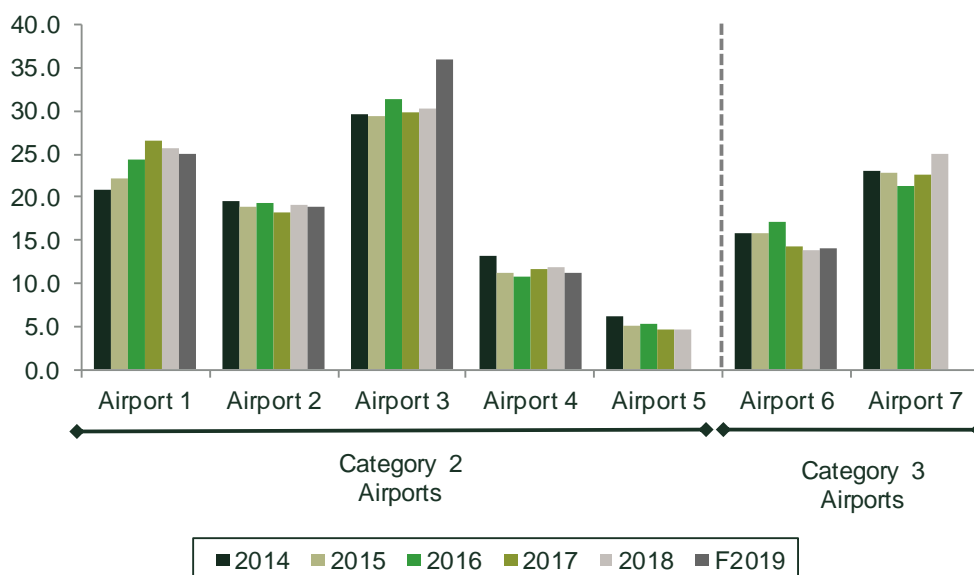
2B.2 Trends in operating costs

- 2.39 Figure 2.6 presents the evolution of operating costs per passenger for the airports in the sample over the period 2014–19. Average operating costs per passenger vary from €31.1 per passenger at Airport 3 to €5.1 per passenger at Airport 5, with personnel costs representing the largest component of operating costs.

³⁶ Mott Macdonald (2017), 'Air Transport Market 2016', pp. 99–100.

³⁷ Chin, A. T. and Ong, D. L. T. (2014), 'Airport revenue management: does airport size matter?', *Academy of World Business, Marketing and Management Development Conference Proceedings*, 6:1, pp. 132–43.; Minato, N. and Morimoto, R. (2011), 'Designing the Commercial Sustainability of Unprofitable Regional Airports Using System Dynamics Analysis', *Research in Transportation and Business Management*, 1:1, pp. 80–90; Adler, N. Ülkü, T. and Yazhemsy, E. (2013), 'Small regional airport sustainability: Lessons from benchmarking', *Journal of Air Transport Management*, 33, October, pp. 22–31; Fageda, X. and Voltes-Dora, A. (2012), 'Efficiency and profitability of Spanish airports: a composite non-standard profit Function approach', Universitat de Barcelona; National Academies of Sciences, Engineering, and Medicine (2010), *Airport Revenue Diversification*, The National Academies Press.

Figure 2.6 Operating costs per passenger (excluding interest, taxes, depreciation and amortisation, €)



Source: Oxera analysis, based on airports' financial data.

2.40 Operating costs at Airport 2 remained relatively constant during the period under assessment. While operating costs at Airports 4 to 6 slightly decreased during the period under assessment, Airports 1, 3 and 7 recorded a slight increase in operating costs. Changes in operating costs per passenger were mainly driven by increases or decreases in salaries and wages and other operating costs.³⁸ At Airport 3, the cost increase was mainly due to an increase in costs related to non-economic activities.

2.41 As costs for non-economic activities are often funded publicly, it is useful to analyse the development of operating costs excluding costs of non-economic activities.

Costs of non-economic activities

2.42 According to the Aviation Guidelines, the public funding of costs related to non-economic activities—i.e. those activities that fall under the responsibility of the State in the exercise of its official powers as a public authority—are typically not classified as state aid. Non-economic activities can include air traffic

³⁸ Other operating costs include all other operating costs except salaries and wages, materials, depreciation, interest and taxes.

control, police, customs, firefighting, activities to safeguard civil aviation navigation and surveillance.³⁹

- 2.43 Based on the Commission's practice, airport activities are considered to be non-economic if there is a framework in place in the member state that ensures the absence of any discrimination between airport operators with respect to the public financing of such activities.⁴⁰ Therefore, funding of non-economic activities depends on the given framework in which airports operate and can be applied differently between member states.⁴¹
- 2.44 As reported by the airports considered in this case study, differences in public funding for non-economic activities could lead to competitive distortions between airports located, in particular, in border regions, as airports receiving higher funding for non-economic activities could potentially offer lower airport charges to attract airlines. As a result, airports that are able to achieve a higher traffic level are more likely to break-even financially and to not require operating aid.
- 2.45 Based on previous Commission decisions, in Germany, fire safety, protection against acts of unlawful interference and air surveillance are considered as non-economic activities.⁴² In contrast, Denmark considers besides fire safety, air navigation, police and customs as non-economic activities.⁴³ Member states will have to consider if future additional incremental costs for airports, related to environmental protection, are considered as non-economic.
- 2.46 As shown in Figure 2.7, costs related to non-economic activities vary across the airports included in the study, and range from an average of €2 per passenger at Airport 5 to €19 per passenger at Airport 3. All airports, except Airport 7, confirmed that they have received public funding to cover expenses relating to non-economic activities.

³⁹ European Commission (2014) 'Guidelines on State aid to airports and airlines 2014/C 99/03', 4 April 2014, para. 35.

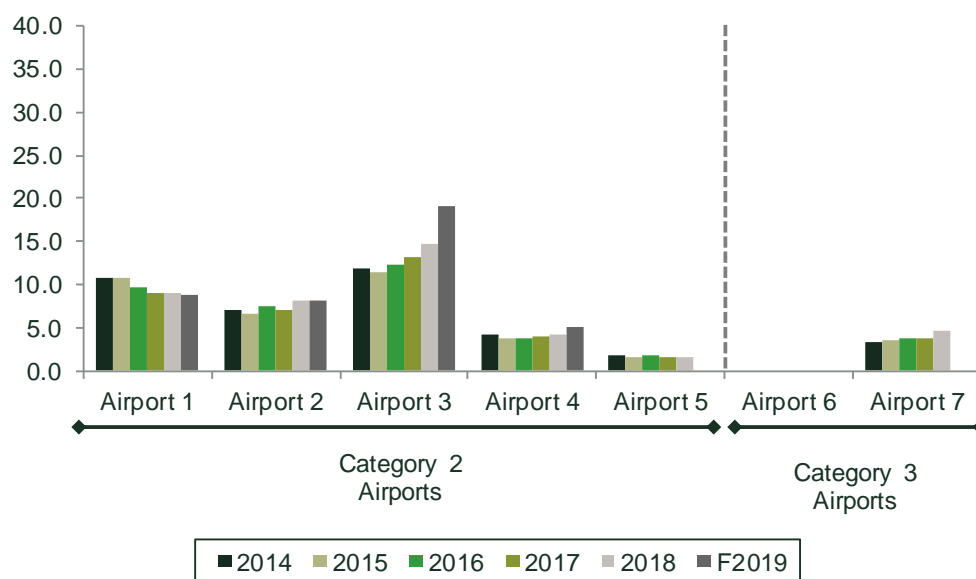
⁴⁰ European Commission Decision (2017), 'State Aid SA.44377 (2016/NN) – Denmark - Aarhus Airport', 9 August, para. 31.

⁴¹ EFTA Surveillance Authority Decision No 3/17/COL of 18 January 2017, paras 12–15.

⁴² European Commission (2018), 'State Aid SA.46945 (2018/NN) – Germany Erfurt-Weimar Airport', 27 June, paras 60, 61, 62–64 and 65.

⁴³ European Commission (2017), 'State Aid SA.44377 (2016/NN) – Denmark - Aarhus Airport', 9 August, para. 31. Although the Danish authorities submitted that certain investments and airports' services were non-economic, the costs were included in the calculation of the funding gap as the Danish authorities did not conclude on whether there is a general system applicable in Denmark that ensures that there is no discrimination between airport operators with respect to the public financing of such activities.

Figure 2.7 Costs relating to non-economic activities per passenger (€)

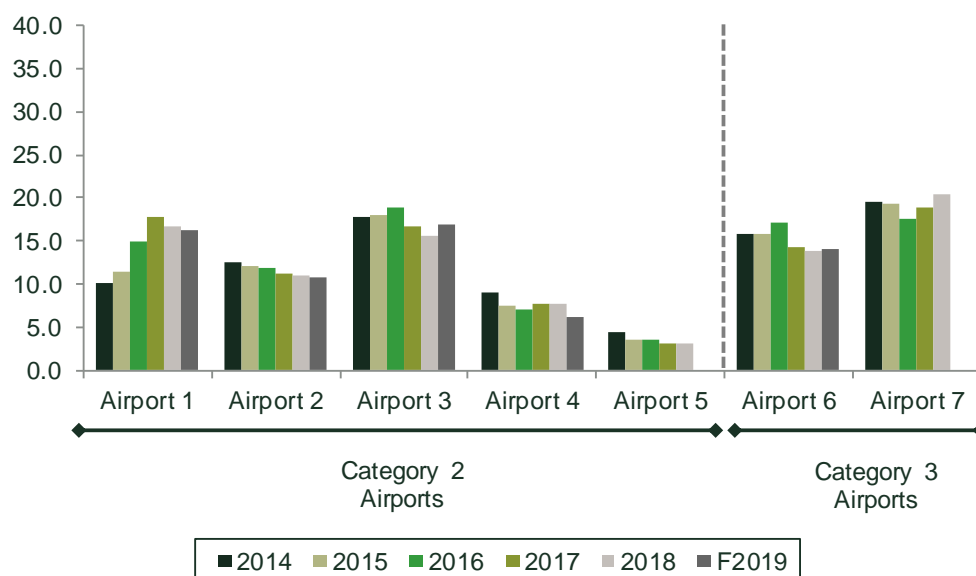


Note: Figure 2.7 shows the total costs of airports' non-economic activities as reported by the airports, without taking into account state funding received by the airports for non-economic activities. Data on costs related to non-economic activities was not available for Airport 6. The classification of costs of non-economic activities has been undertaken by the airports.

Source: Oxera analysis, based on airports' financial data.

2.47 Figure 2.8 presents operating costs per passenger, excluding costs relating to non-economic activities. Over the period 2014–18/19, operating costs per passenger decreased by approximately 30% at Airports 4 and 5. Additionally, Airports 2 and 6 recorded a slight decrease of approximately 15% in operating costs per passenger. In contrast, Airports 3 and 7 do not show any significant changes in operating costs per passenger. Operating costs have increased by approximately 60% at Airport 1 over the period, which can be linked to its expansion in non-aeronautical business activities and associated revenues.

Figure 2.8 Operating costs per passenger (excluding costs relating to non-economic activities, interest, taxes, depreciation and amortisation, €)



Note: All airports, except Airport 7, report to have received public funding to cover non-economic activities. To allow for comparability between airports, for the purpose of the illustration presented in the Figure above, we assume that, for all airports, 100% of the non-economic costs were funded publicly, as allowed under the Aviation Guidelines.

Source: Oxera analysis, based on airports' financial data.

Main findings on the analysis of airports' costs

- 2.48 Some of the airports under consideration seem to have undertaken measures to reduce operational costs. However, according to the airports under consideration, the potential for further cost improvements appear limited due to a high share of fixed costs (i.e. the minimum level of costs required to keep the airport operational).
- 2.49 Overall, the airports included in the sample note that the minimum level of operating costs that could be achieved is €1.5m–€3m per year. This is in line with empirical research that indicates that for smaller European airports (i.e. airports with less than 1.6mppa) the minimum level of operating costs per year amounted on average to around €1.5m in 2009.⁴⁴ The minimum operating costs cover, for example, expenses for obtaining and maintaining aerodrome certification (i.e. the airport's ability to meet regulatory safety requirements), the

⁴⁴ Adler, N., Ülkü, T. and Yazhemy, E. (2013), 'Small regional airport sustainability: Lessons from benchmarking', *Journal of Air Transport Management*, 33, October, pp. 22–31.

minimum level of personnel and utilities as well as the required maintenance of airport infrastructure.⁴⁵

- 2.50 Although the empirical evidence is not conclusive,⁴⁶ it is generally acknowledged that smaller airports have a fixed cost disadvantage compared to larger airports, given that larger airports are more able to achieve economies of scale. This has also been reported by the airports under consideration. Furthermore, some airports report that the smaller airports are less likely to be able to outsource ground handling operations, which could lead to cost inefficiencies.⁴⁷ The Aviation Guidelines acknowledge that fixed costs are generally higher for smaller airports.⁴⁸
- 2.51 The Commission could provide member states with clearer guidance on the treatment of costs of non-economic activities, in order to avoid significant differences between member states. In addition, it could be suggested that certain operating costs relating to required environmental protection measures could qualify as non-economic costs.

2B.3 Trends in profitability

- 2.52 Figure 2.9 presents the evolution of profitability at the airports under consideration, whereby profitability is measured as earnings before interest, taxes, depreciation and amortisation (EBITDA).⁴⁹ Figure 2.9 shows that Airports 4 and 7 have been profitable since 2014 and Airport 5 has generated small surpluses since 2015. In contrast, the remaining airports have not been able to cover their operational costs during the time period under consideration. It should be noted that EBITDA is a useful metric for examining the profitability of airports in the context of state aid assessments of operating

⁴⁵ In some cases, concession agreements include the obligation for airport operators to undertake infrastructure maintenance.

⁴⁶ Chin, A. T. and Ong, D. L. T. (2014), 'Airport revenue management: does airport size matter?', *Academy of World Business, Marketing and Management Development Conference Proceedings*, 6:1, pp. 132–43.

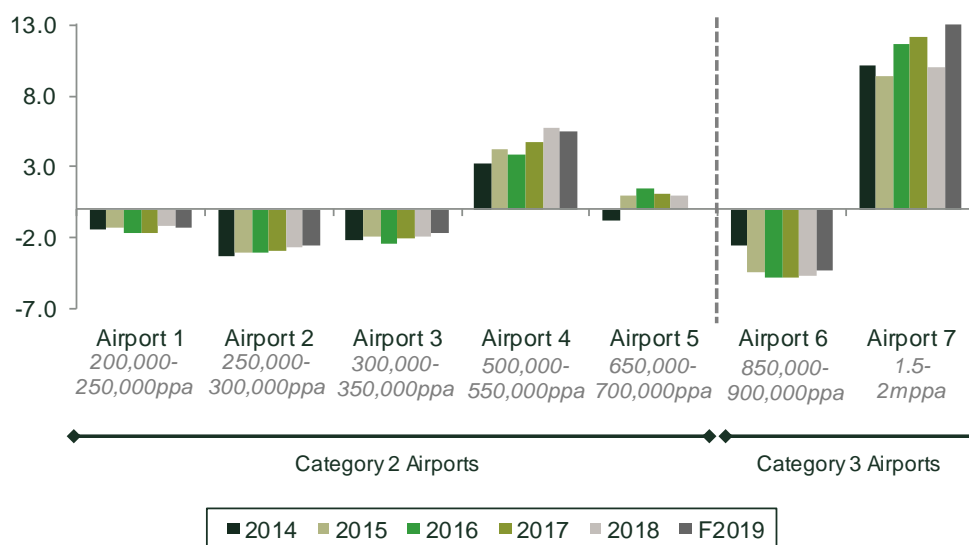
⁴⁷ Adler, N. Ülkü, T. and Yazhemy, E. (2013), 'Small regional airport sustainability: Lessons from benchmarking', *Journal of Air Transport Management*, 33, October, pp. 22–31.

⁴⁸ European Commission (2014), 'Guidelines on State aid to airports and airlines', Communication from the Commission, *Official Journal of the European Union*, C 99/3, 4 April, para. 89.

⁴⁹ EBITDA is calculated excluding costs of non-economic activities and operating aid and including incentive payments to airlines. The Aviation Guidelines do not specify which indicator should be used to measure airport profitability (e.g. EBITDA, EBIT or free cash flow). The Aviation Guidelines specify that operating aid should cover the airport's operating losses, which are defined as the airport's costs relating to the provision of airport services, excluding capital costs (i.e. depreciation of eligible investment costs), marketing support or any other incentives granted to airlines by the airport, and costs falling within a public policy remit (see para. 25 (21) of the Aviation Guidelines). As the Aviation Guidelines exclude capital costs from the calculation of operating losses, EBITDA is an appropriate indicator of profitability, which we therefore focus on in this report. Furthermore, depreciation is excluded from the measure of profitability to allow for comparability between airports. Including depreciation would impact comparison between airports, in particular if there have been recent capital developments. However, as the empirical studies presented in section 2A measure profitability on both an EBIT and EBITDA basis, we present the EBIT results for the airports considered in this study in Appendix A13A1. As shown in the Appendix, the choice of the measure of profitability does not affect the conclusions from this report.

aid, as the metric is used, based on the Aviation Guidelines, to determine the amount of operating aid that an airport would be eligible to receive. However, for a general assessment of airports' profitability, a more suitable measure to capture an airport's profitability is a measure of return on assets.

Figure 2.9 EBITDA excluding costs relating to non-economic activities and excluding operating aid (€m)



Note: The estimates presented for Airport 7 exclude extraordinary results.

Source: Oxera analysis, based on airports' financial data.

2.53 Although loss-making, the profitability of Airports 2 and 3 slightly improved over the period. Due to improved cost efficiency, the annual deficit decreased by 24% at Airport 2 and by 20% at Airport 3. However, even if it is assumed that the current trend will continue, these airports are unlikely to be able to break-even financially by the end of the transitional period in April 2024. This also applies for Airport 6, which was not able to improve profitability during the time period under assessment.

2.54 All airports, except Airports 4 and 7, received public funding to cover operational losses.⁵⁰ Although eligible for aid under the Aviation Guidelines, Airports 4 and 7 did not receive any operating aid due to stricter national legislation. According to Airport 4, the airport only received compensation for costs relating to non-economic activities.

⁵⁰ Airport 6 did not provide information as to whether non-economic costs were funded publicly.

2.55 For the airports under consideration, the amount of operating aid received by the airports has been based on an ex ante amount, which has been calculated as a fixed sum to cover the expected additional costs over a given period, or ex post, based on the actual annual loss recorded by the airport. However, it appears that in some instances, operating aid granted to the airports also covers compensation related to costs of non-economic activities, public service obligations or even (eligible) investment costs and incentive payments for airlines. Furthermore, in some instances, based on discussions with the airports, separate accounts, as required by the Aviation Guidelines, have not been implemented.⁵¹

Main findings from the profitability analysis

2.56 Although loss-making, the profitability of some of the airports considered has improved slightly since 2014 due to an increase in cost efficiency (i.e. the ability to decrease costs on a per-passenger basis) and, to a lesser extent, the ability to increase revenues on a per-passenger basis. However, these airports are unlikely to be able to reach operational cost coverage by the end of the transitional period in 2024, which may partly be due to limited expected traffic growth at some airports. Overall, our findings are in line with a number of economic studies that suggest, depending on country- and company-specific characteristics, airports with traffic below 1mppa, in particular, are unlikely to reach the financial break-even (i.e. to be able to cover their operating costs).

2.57 To avoid the potential closure of a number of airports and the associated adverse impact on the local economy, an option under the state aid framework would be to increase the current traffic threshold applicable to airports eligible for operating aid under the GBER. Specifically, the threshold could increase from 200,000 to 700,000ppa, as suggested by the ACI and the UAF,⁵² or even to 1mppa, based on the results from the empirical literature and the case studies presented in this report.⁵³ Alternatively, it could be considered to extend the GBER for those airports with up to 700,000ppa, and to increase the

⁵¹ European Commission (2014), 'Guidelines on State aid to airports and airlines', *Official Journal of the European Union*, C 99/3, 4 April, para 36. Similar to this, CMS's legal analysis notes that typically publicly owned regional airports have not implemented separate accounts and many costs were supported directly by the administration. Therefore, the 'funding gap' method stipulated by the Aviation Guidelines to calculate the maximum aid intensities might pose practical challenges for airports to implement. See CMS (2019), 'Legal assessment in response to the European Commission's ex-post consultation on the 2014 Aviation Guidelines'.

⁵² ACI EUROPE (2019), 'Response to European Commission's Targeted consultation on the ex-post evaluation of the 2014 Aviation Guidelines', 31 July; UAF (2019), 'Les aides d'État dans le domaine aéroportuaire: un outil au service du développement économique et social des territoires', 30 July 2019.

⁵³ It should be noted that the results from the case studies presented in this report are based on the level of traffic required for airports to be able to cover their operating costs (excluding any investment costs or depreciation costs).

allowed operating aid intensity to 80% (i.e. the amount of aid allowed relative to the airport's eligible costs) under the Aviation Guidelines for airports with traffic of 700,000ppa to 1mppa.⁵⁴

- 2.58 According to the airports considered in this study, the ability to increase aeronautical revenues is constrained due to the strong bargaining position of airlines, in particular LCCs, which have a large presence at smaller regional airports in Europe. In addition, airports report that further improvements in cost efficiencies may be limited due to a high share of fixed costs. Therefore, airports may need to rely, if possible, on increasing their non-aeronautical activities in order to improve profitability. Indeed, the results from empirical research suggest that maximising opportunities to increase non-aeronautical revenues on a per-passenger basis can, where possible, improve airports' profitability.⁵⁵ However, the ability of many smaller airports to increase non-aeronautical revenues may often be limited.

⁵⁴ This would be consistent with the operating aid intensity allowed for airports with 200,000ppa to 700,000ppa under the 2014 Aviation Guidelines.

⁵⁵ Chin, A. T. and Ong, D. L. T. (2014), 'Airport revenue management: does airport size matter?', *Academy of World Business, Marketing and Management Development Conference Proceedings*, 6:1, pp. 132–43.; Minato, N., Morimoto, R. (2011), 'Designing the Commercial Sustainability of Unprofitable Regional Airports Using System Dynamics Analysis', *Research in Transportation Business and Management*, 1:1, pp. 80–90; Adler, N., Ülkü, T. and Yazhensky, E. (2013), 'Small regional airport sustainability: Lessons from benchmarking', *Journal of Air Transport Management* 33, October, pp. 22–31; Fageda, X. and Voltes-Dora, A. (2012), 'Efficiency and profitability of Spanish airports: a composite non-standard profit Function approach', Universitat de Barcelona; National Academies of Sciences, Engineering, and Medicine (2010), *Airport Revenue Diversification*, The National Academies Press.

3 Conclusions

- 3.1 We have undertaken various case studies, based on data provided by members from the ACI EUROPE and the UAF, to consider the specific questions raised by the Commission in the consultation on the 2014 Aviation Guidelines in relation to the state aid rules on operating aid.
- 3.2 As set out in section 2, based on case study examples, we have analysed whether the transitional period of 10 years (i.e. 2014–24), as set out in the Aviation Guidelines, is sufficient to allow airports to reach operational cost coverage by the end of this period.⁵⁶
- 3.3 Our analysis shows that, since 2014, a number of small regional airports have undertaken measures to increase cost efficiency (i.e. their ability to decrease costs on a per-passenger basis) and, albeit to a lesser extent, to increase revenues on a per-passenger basis. However, these airports are unlikely to be able to reach operational cost coverage by the end of the transitional period in 2024.
- 3.4 The results from academic research show a wide range of break-even estimates for airports with traffic of up to 1mppa. Furthermore, airports' profitability can also depend on country-specific factors (e.g. wage levels), which can make it difficult to establish a uniform EU-wide threshold under the state aid rules for determining airports' eligibility for operating aid.
- 3.5 The results from the case studies show that airports' ability to achieve operational profitability depends on a number of parameters and is not solely linked to the airports' size. It depends on the airports' ability to realise cost efficiencies and to maximise revenues, as well as external factors, such as the regulatory and economic environment. In this regard, the Commission could provide member states with clearer guidance on the definition of non-economic costs to support a level playing field between European airports. In particular, the Commission could consider that compensation for costs relating to required environmental protection measures should not fall within the scope of state aid rules given their non-economic nature.
- 3.6 An option that could be considered would be to increase the current traffic threshold that determines airports' eligibility for operating aid under the GBER.

⁵⁶ Based on the data provided by the airports covered in this study, we were not able to analyse whether the aid intensity thresholds for operating aid as set out in the 2014 Aviation Guidelines are adequate in view of the current market conditions.

In particular, the current thresholds in the GBER could be increased from 200,000ppa to 700,000ppa, as suggested by the ACI and the UAF.⁵⁷ However, airports with higher levels of passenger traffic may also face difficulties reaching profitability in the short to the medium term. In particular, research from the ACI and academic research has shown that airports with traffic between 700,000ppa and 1mppa might also face difficulties in achieving long term operational sustainability.⁵⁸ The case studies considered in this report show that, five out of the six airports with traffic of up to 1mppa, appear unable to reach financial profitability in the near future. Therefore, it could also be considered to increase the operating aid intensity for airports with traffic of 700,000ppa to 1mppa to 80% under the Aviation Guidelines.⁵⁹

- 3.7 As in 2017, when the Commission first introduced the GBER to small regional airports, it should be assessed whether the proposed measures (i.e. an extension of the GBER to airports with traffic up to 700,000ppa, and an increase in the allowed operating aid intensity to 80% for airports with traffic of 700,000ppa to 1mppa) would be proportionate. Currently, 84 airports in the EU would benefit from increasing the traffic threshold under the GBER from 200,000ppa to 700,000ppa.⁶⁰ In addition, 12 airports currently have traffic between 700,000ppa and 1mppa.⁶¹ As airports with traffic below 1mppa handle only 3.25% of total passenger traffic in the EU and EFTA States,⁶² this implies that there might be a low risk of competitive distortions in the EU. In addition, the measure would help to decrease the administrative burden for public authorities. Since 2014, when the 2014 Aviation Guidelines came into effect,

⁵⁷ ACI EUROPE (2019), 'Response to European Commission's Targeted consultation on the ex-post evaluation of the 2014 Aviation Guidelines', 31 July; UAF (2019), 'Les aides d'État dans le domaine aéroportuaire: un outil au service du développement économique et social des territoires', 30 July.

⁵⁸ ACI (2015), 'ACI Economics Report', as cited in Mott Macdonald (2017), 'Air Transport Market 2016', p. 100, and Vogel, H.-A., (2016), 'Challenges of airport economics for financial management', *Journal of Airport Management*, **10**:3, pp. 416–35, as cited in Zuidberg, J. (2017), 'Exploring the determinants for airport profitability: Traffic characteristics, low-cost carriers, seasonality and cost efficiency', *Transportation Research Part A: Policy and Practice*, **101**, p. 62.

⁵⁹ This aid intensity would be consistent with the operating aid intensity allowed under the 2014 Aviation Guidelines for airports with 200,000ppa to 700,000ppa.

⁶⁰ This is in addition to 189 airports with traffic below 200,000ppa that are currently eligible for operating aid under the GBER. This includes all airports in the EU with annual traffic between 200,000 and 700,000 passengers in 2018, including airports in the UK and excluding airports that have notified operating aid to the Commission since the 2014 Aviation Guidelines came into force. For further details, see ACI Annual World Traffic Report, 2019 Edition.

⁶¹ Ibid.

⁶² ACI EUROPE (2019), 'Response to European Commission's Targeted consultation on the ex-post evaluation of the 2014 Aviation Guidelines', 31 July.

only six individual operating aid measures were notified to the Commission.⁶³ On average, it took approximately 18 months to reach a final decision.⁶⁴

- 3.8 If the Commission decides to fully phase out the possibility for airports to receive operating aid by April 2024, based on our discussions with the airports, some airports may need to close or to reduce their operations significantly. Although the empirical literature on the impact of regional airports on economic development is mixed,⁶⁵ the Commission has in a number of instances acknowledged the importance of regional airports for connectivity and regional development.⁶⁶ In assessing the proportionality of the proposed measures (i.e. an extension of the GBER to airports with traffic up to 700,000ppa, and an increase in the allowed operating aid intensity to 80% for airports with traffic of 700,000ppa to 1mppa), it should therefore be taken into account that the closure of airports could have adverse effects on the economic and social cohesion of regions in the EU.

⁶³ European Commission (2018), 'State Aid SA.46945 (2018/NN) – Germany Erfurt-Weimar Airport', 27 June 2018; European Commission (2017), 'State Aid SA.44377 (2016/NN) – Denmark – Aarhus Airport', 9 August 2017; European Commission (2017), 'State Aid SA.47969 (2017/N) – Germany Operating Aid to Frankfurt-Hahn Airport', 31 July; 'State Aid SA.44097 (2016/N) Finland Operating aid to Lappeenranta airport', 5 January. The Commission's decisions regarding Dortmund Airport (SA.46373), Rostock Airport (SA.49709) and Erfurt–Weimar for the extension of operating aid from 2019–24 (SA.54496) have not been published in the Official Journal of the EU at the time of writing this report. To calculate the average time to reach a final decision, the time period between the notification or registration date and the decision date was taken into account. Therefore, the average time period does not take into account the pre-notification phase. The first notification and the extension to the first notification regarding Erfurt–Weimar Airport is considered as a single case.

⁶⁴ Ibid.

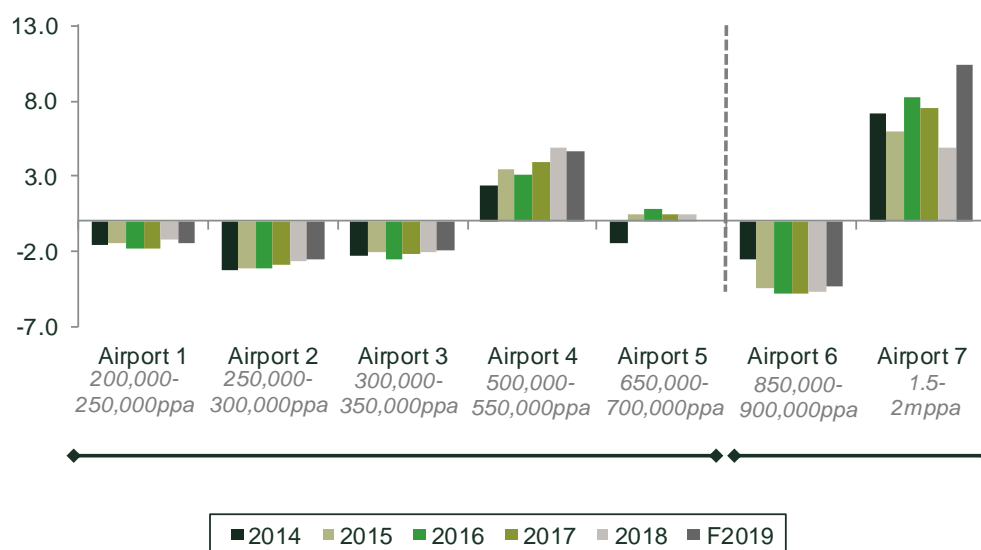
⁶⁵ For examples of empirical papers finding a positive impact of regional airports on economic development, see, Beifert, A. (2015), 'Business Development Models for regional airports – case studies from the Baltic Sea region', *Journal of Security & Sustainability Issues*, 5:2; InterVISTAS (2015) Economic Impact of European Airports: A Critical Catalyst to Economic Growth, Janura. For examples of papers finding no such impact, see, for example, Breidenbach, P. (2015), 'Ready for Take-off? The Economic Effects of Regional Airport Expansion', Ruhr Economic Paper, (549), 15 April.

⁶⁶ See e.g. Commission's decisions mentioned in footnote 43 as well as European Commission (2016), 'SA.24221(2011/C) (ex 2011/NN) implemented by Austria for the Klagenfurt airport, Ryanair and other airlines using the airport', 11 November and European Commission (2014), 'SA.33961 (2012/C) (ex 2012/NN) mise à exécution par la France en faveur de la chambre de commerce et d'industrie de Nîmes – Uzès – Le Vigan, de Veolia Transport Aéroport de Nîmes, de Ryanair et d'Airport Marketing Services', 23 July.

A1 Appendix

A1.1 In this study, we focus on measuring airports' profitability on an EBITDA basis in order to be consistent with the definition of the operating funding gap in the Aviation Guidelines.⁶⁷ Furthermore, the focus on EBITDA more easily enables comparability between airports, because, in contrast to EBIT, it is not affected by differences between airports in their investment cycles. However, as a number of the studies presented in the literature review on financial break-even thresholds of airports presented in section 2A include depreciation costs, we have also analysed the profitability of the airports considered in the case studies, based on EBIT, over the period 2014–19 (see Figure A1.1).

Figure A1.1 EBIT excluding costs relating to non-economic activities and excluding operating aid (€m)



Source: Oxera analysis, based on airports' financial data.

A1.2 Between 2014 and 2019, the share of depreciation to total operating costs varied between 2% at Airport 3 and 20% at Airport 5. Airports 2 and 6 did not report any depreciation, which could be due to the investments being financed by the public owner directly. As shown in Figure A1.1, Airport 7 undertook a relatively large investment in 2017, which is reflected in a decline in EBIT from 2017 to 2018.

⁶⁷ The operating funding gap is defined in the Aviation Guidelines as excluding depreciation of eligible investment costs. All airports, except Airports 4 and 7, report to have received investment aid to cover investment costs.

A1.3 The results show that, even if profitability is measured, taking into account depreciation costs, the overall conclusions do not change. Airports 4 and 7 have been profitable since 2014, while Airport 5 was able to generate small surpluses since 2015. Furthermore, Airports 1–3 and Airport 6 were not able to reach profitability during the time period of the assessment. Overall, most airports with traffic below 1mppa were not able to reach profitability and are likely to need continuing financial support in the future.

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