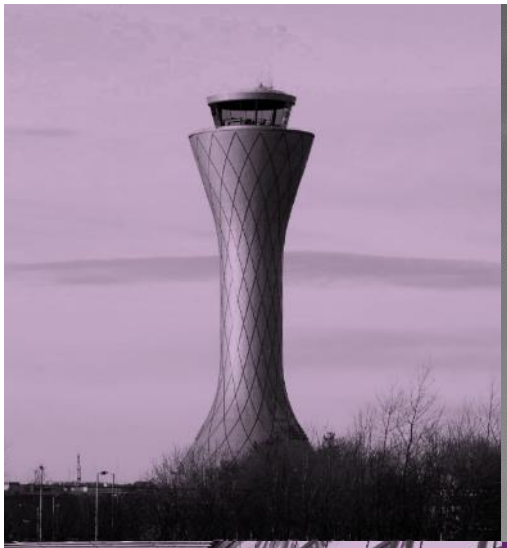

The Economic Impact of Changes to the German Aviation Security Fee

Ryanair

Final Report

July 2023

York Aviation

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0. Key Points

0.1. In June 2023, Ryanair commissioned York Aviation to undertake an assessment of the potential economic impact of the potential changes to the Aviation Security Fee ("Luftsicherheitsgebühr") in Germany. This per-passenger Fee is intended to cover the costs of passenger security processing and baggage screening at German airports up to a cap of €10. The German Government is, however, currently considering increasing this cap.

0.2. The Aviation Security Fee and the potential raising of the current cap needs to be viewed in terms of a broader high cost regulatory environment in Germany that is significantly damaging its competitiveness as a location to locate aircraft capacity.

0.3. This analysis demonstrates that the great majority of German airports are now charging up to the €10 cap and that there has been a marked increase in the level of per passenger charge since 2019. Some airports have experienced an increase of nearly 100% (Dusseldorf has experienced an increase of 113%). Others, such as Hamburg, Hannover and Berlin, have experienced increases of around 50%. Overall, it seems clear that the recent rise in per passenger charges in relation to the Aviation Security Fee does not reflect an increase in the costs of provision but instead demonstrates a failure of the system to deliver value for money for consumers travelling through German airports.

0.4. Aviation security provision in Germany is both expensive and inefficient. The priority for the German government should be to address the significant issues around productivity before seeking to raise the €10 cap. In truth, it would seem reasonable to suggest that the Government should in fact be seeking to reduce the cap to drive efficiency.

0.5. For the purposes of this assessment of the economic impact, we have examined two hypothetical scenarios:

- €15 Cap – this assumes that all airports in Germany charge to the cap over the next few years;
- €28.50 Cap – this assumes that all airports in Germany ultimately charge to the €28.50 cap in the medium term.

0.6. The German air transport market is already struggling with an anaemic recovery, fuelled by the high regulatory costs in the country. Making this situation worse, by increasing the Aviation Security Fee, would likely do significant further damage, especially at small and medium sized airports. Airports charging up to a €15 cap could result in the loss of 5 million passengers and 42 routes. With a cap of €28.50, these impacts would increase to around 16.4 million passengers and 95 lost routes. This impact is felt disproportionately at small and medium sized airports, where markets are less resilient and more vulnerable.

0.7. The potential economic impacts of raising the Aviation Security Fee cap at German airports for the German economy are significant. With the cap increased to €15, the German economy would lose around €2.5 billion each year. Around half of this would come from reduced activity in the aviation sector. Within this overall effect, there would be a €200 million reduction in net tourism expenditure in Germany. It should also be noted that, while the such a move might increase direct tax revenues from the Aviation Security Fee, the impact on indirect taxes would be such that the pubic sector would in fact suffer a net loss of revenue of around €40 million.

0.8. If the cap is increased to €28.50, the effects become markedly larger. The overall negative impact on German GDP increases to around €8.5 billion, of which €4.3 billion directly relates to the aviation sector. Net tourism expenditure falls by around €800 million, while public sector tax revenues decline by around €130 million.

1. Introduction

Purpose of the Report

1.1. In June 2023, Ryanair commissioned York Aviation to undertake an assessment of the potential economic impact of potential changes to the Aviation Security Fee in Germany. This per-passenger fee is intended to cover the costs of passenger security processing and baggage screening at German airports up to a cap of €10. The German Government is, however, currently considering increasing this cap.

1.2. The Aviation Security Fee is already a significant deterrent to locating aircraft capacity in Germany, as it drives up the effective marginal cost of operations in the country, and therefore the fares charges to passengers. This hampers growth in demand and connectivity. It is noticeable in this context that Germany is one of the slowest recovering markets in Europe post-COVID and many of its airports are losing ground on their European competitors. Further increases in the Aviation Security Fee can only exacerbate what is already a problem for Germany's airports.

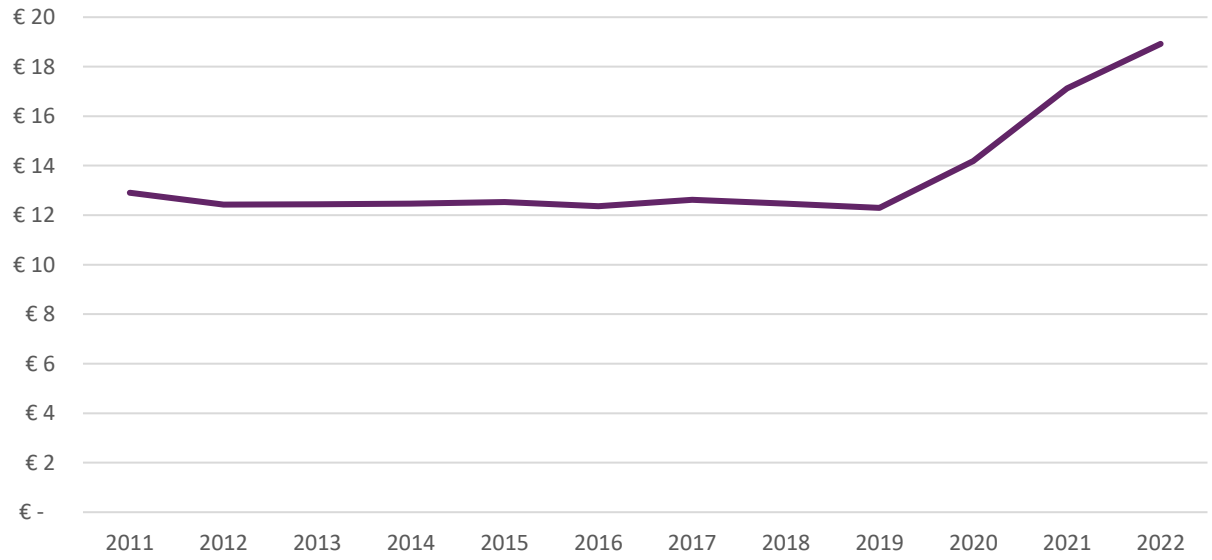
1.3. This report considers the recent history of the Aviation Security Fee, its effect on the competitiveness of German airports, the case for increasing the current cap and the potential effects of the potential changes on the air transport market and, ultimately, the economic damage that the potential changes will do to the German economy.

The Broader High Cost Regulatory Environment in Germany

1.4. The Aviation Security Fee and any potential raising of the current cap also need to be viewed in terms of a broader high cost regulatory environment in Germany that is significantly damaging its competitiveness as a location to locate aircraft capacity.

1.5. In addition to the Aviation Security Fee, passengers departing from German airports face the German Aviation Tax. This tax was introduced in 2011 and one of the highest of its kind in Europe. This tax has risen markedly since 2019 (see Figure 1.1). Currently, the tax rates range from €12.88 for most European and North African destinations, to €32.62 for destinations mainly in the Sub-Saharan Africa and the Middle East, to €58.73 for longer haul destinations. Figure 1.1 shows the total aviation tax revenue collected divided by total passengers departing from German airports. This provides a weighted average of the German aviation tax paid by a departing passenger over time.

Figure 1.1: Weighted Average German Aviation Tax Paid Per Departing Passenger



Source: Federal Statistical Office (Destatis), 2023.

1.6. Air Traffic Control costs in Germany have also risen markedly in recent years. Alongside the Aviation Security Fee, especially with the potential amendments to the cap, this represents a regulatory environment in Germany that is uncompetitive and an anathema to airline capacity investment and growth. There are simply better options across Europe for airlines seeking to locate capacity and grow.

Scope of the Analysis

1.7. Our analysis is based on a wide range of information sources. These include both publicly available sources and confidential information available to us from our work with airports and airlines across Europe. The assessment is based on existing well recognised research. We have not undertaken any primary research as part of this analysis.

1.8. In terms of the geographic scope of our work, our analysis considers the impact of the Aviation Security Fee on all routes departing from German airports and the consequent 'knock-on' to reciprocal arrivals to German airports. We have not reported the results of our analysis in terms of individual airports in Germany but have provided analysis of impacts on airports in different size bands. Similarly, we have not reported impacts on individual airlines, but, where appropriate, we have reported on differential effects between full service airlines and low cost carriers.

1.9. Our analysis of the quantitative effects of the potential increases in the Aviation Security Fee has focussed on two aviation market effects:

- passenger demand for air services;
- the number of destinations served from German airports, as a measure of network connectivity.

1.10. The impact on the German economy has been considered in terms of the impact on Gross Domestic Product (GDP). Our analysis has considered both the impact in terms of lost GDP associated with air transport and associated industries, and the impact in the wider economy stemming from lost connectivity and its effect on trade, foreign direct investment, tourism and overall labour productivity.

About York Aviation

1.11. York Aviation is a specialist aviation strategy consultancy based in the UK. The company was founded in 2002 and has been providing advice to a wide range of clients including airlines, airports, governments, investors and regulators since that time. It is the leading provider of air transport economic impact services in Europe, having undertaken over 100 such studies for clients across the continent. The company's previous experience includes extensive work on the effects of aviation taxes, such as Air Passenger Duty in the UK and the Aviation Tax in Ireland.

Structure of the Report

1.12. This report is structured as follows:

- in Section 2, we examine the Aviation Security Fee in Germany further and consider some potential future scenarios for the per passenger costs of the fee in the future;
- in Section 3, we analyse the efficiency of aviation security provision in Germany;
- in Section 4, we consider the air transport market impacts of the potential changes in terms of passenger demand and connectivity;
- in Section 5, we estimate the economic impacts of the potential changes on the German economy;
- in Section 6, we present our conclusions and recommendations.

2. The Aviation Security Fee in Germany and the Potential Changes

Introduction

2.1. In this Section, we provide an overview of how the Aviation Security Fee works and consider how it has evolved in recent years. We also examine the key drivers that underlie the Aviation Security Fee and set out the potential changes to the current cap.

Overview of the Aviation Security Fee in Germany

2.2. The Aviation Security Fee in Germany is charged to cover the costs associated with searching passengers and their luggage at airports to protect against attacks on aviation infrastructure and passengers. The legal basis for this fee is the Aviation Security Fees Ordinance (LuftSiGebV) of May 23, 2007 in conjunction with the Annex to Section 1 Number 2 of the LuftSiGebV. It should be noted that the fee does not cover staff security screening, duty free screening, armed protection of checkpoints, patrol of secure areas and armed guards for aircraft.

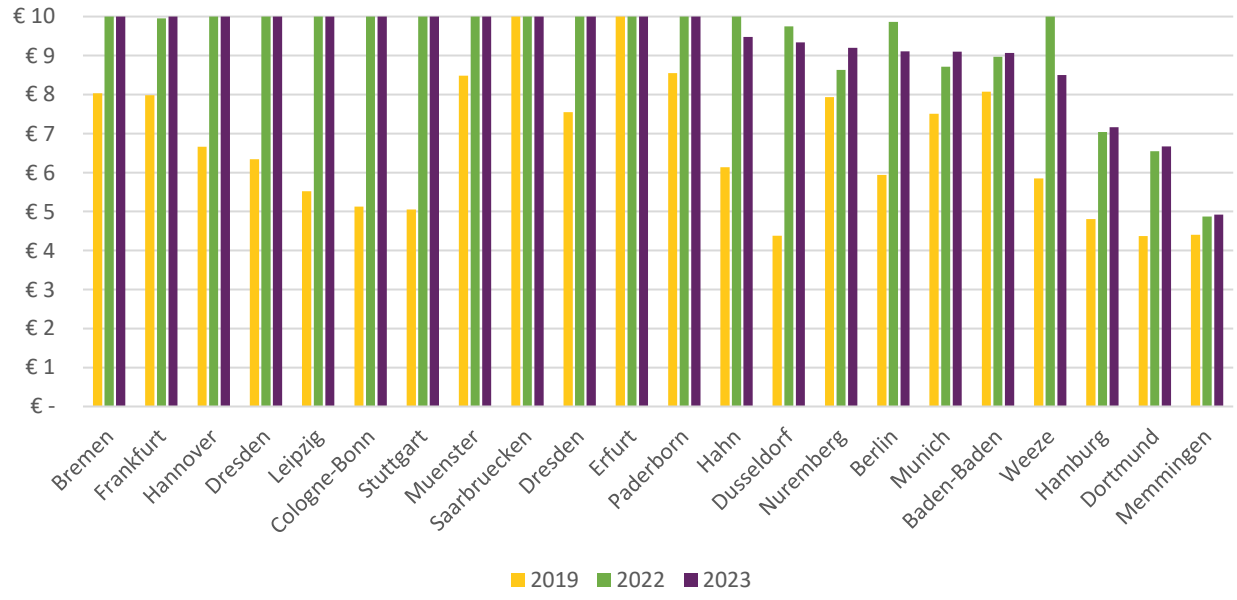
2.3. At large airports, such as Frankfurt, Munich and Berlin, the level of the Aviation Security Fee is set by the Federal Ministry of the Interior and Community (BMI). At smaller airports, the charge is approved by the relevant state government, or sub-state district governments. It should be noted that this does potentially create a mis-match and the potential for different approaches and inconsistent charging across Germany's airports.

2.4. Broadly, the Aviation Security Fee is intended to cover the personnel costs associated with the services, material costs and the rental of terminal space for security provision. The existing regulation allows for a per departing passenger charge of between €2 and €10. It should be noted that many airports make an additional charge to cover the security activities that fall outside of the scope of the Aviation Security Fee. These activities are tendered separately, which is in itself a source of inefficiency in provision.

Recent History of the Aviation Security Fee

2.5. The per departing passenger Aviation Security Fees at a range of German Airports for 2023 are shown in Figure 2.1. This chart also shows how charges have evolved in recent years in each case.

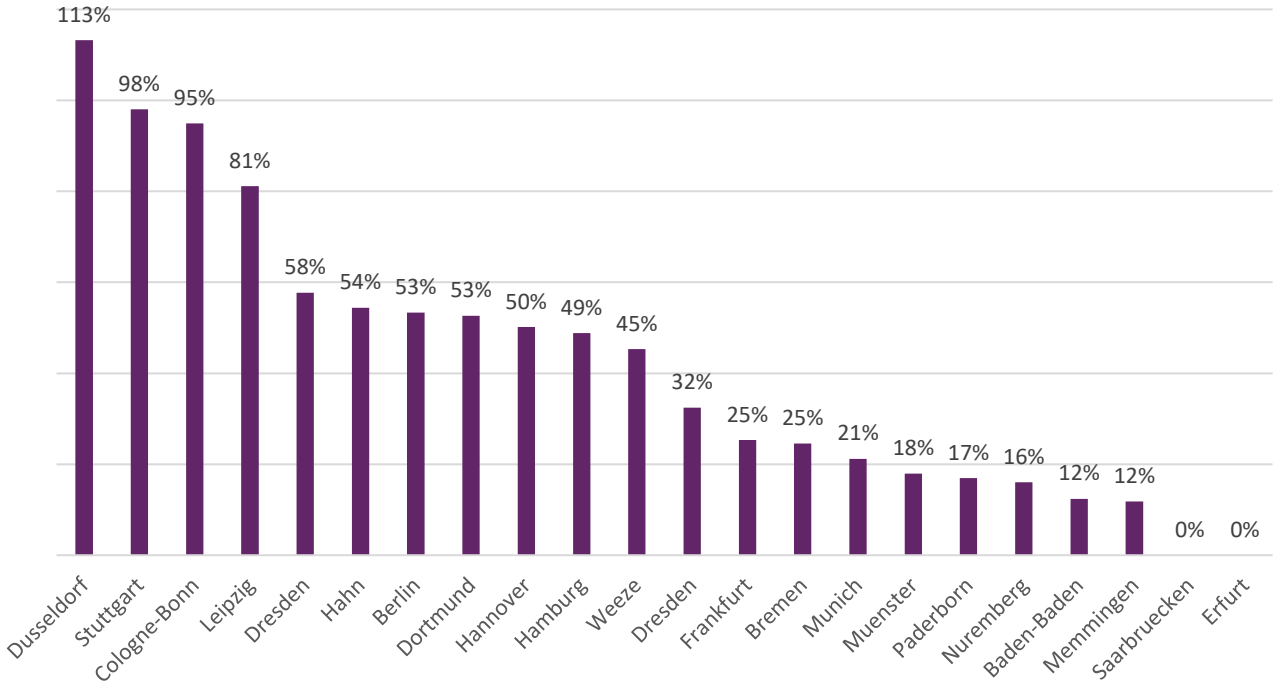
Figure 2.1: Examples of Regulated Aviation Security Fees at Airports in Germany



Source: Ministry of the Interior and Homeland & BMI Transparency Records.

2.6. This analysis demonstrates that the great majority of German airports are now charging up to the €10 cap and that there has been a marked increase in the level of the charge since 2019, as can be seen in Figure 2.2. Some airports have experienced an increase of nearly 100% (Dusseldorf has experienced an increase of 113%). Others such as Hamburg, Hannover and Berlin have experienced increases of around 50%.

Figure 2.2: Growth in the Per Passenger Aviation Security Fee at Key Airports



Source: Ministry of the Interior and Homeland & BMI Transparency Records.

2.7. The levels of this increase are a substantial cause for concern, as they are well above what might be considered normal inflationary increases. In relation to our analysis here, there are two key points to consider:

- it is profoundly unclear as to why costs have increased so much in recent years. There have been no significant changes to security requirements and, while wage inflation has been relatively high (5% up to 2022), this is nowhere near sufficient to explain the increases observed. What has changed is that there have been a significant number of new contracts put in place over the period between the Federal Police and aviation security companies. It would appear that these new contracts offer poor value for money and are certainly not incentivising efficiency. This is not a reason to increase the current cap and it is certainly does not justify additional costs being passed on to airlines. What it suggests is that the process of contracting and tendering needs to be looked at much more closely to improve value for money;

- another possible reason for the rapid increases in recent years might be the existence of fixed costs within the required provision such that the reduced passenger volumes seen during the COVID-19 pandemic have led to higher per passenger costs. As Germany has been slow to recover from the pandemic, this effect is lingering into 2023. This, again, is not a reason to increase the current €10 cap on the Aviation Security Fee. As markets continue to recover and passenger numbers rise again, this phenomenon would operate in reverse with per passenger charges falling again. There is, therefore, no reason to increase the per passenger cap. In fact, it is potentially counterproductive as it would delay recovery of passenger demand.

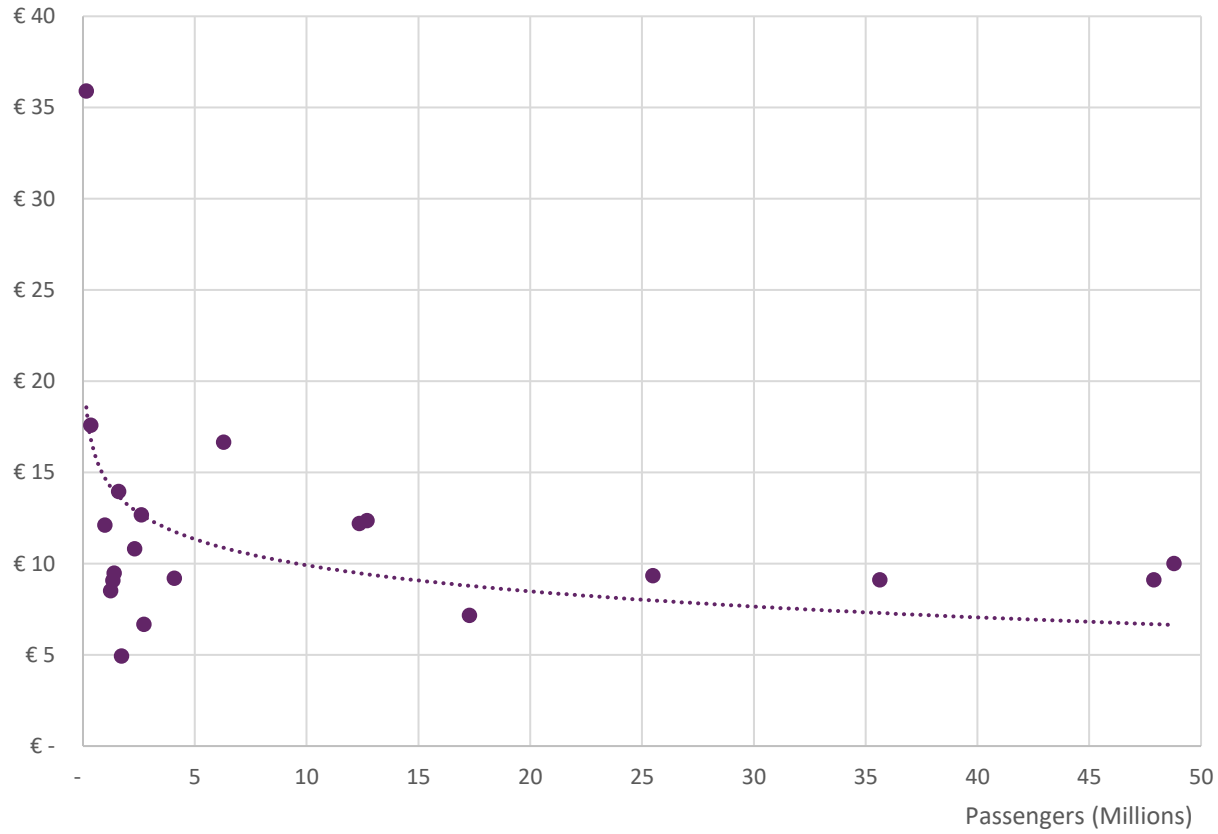
2.8. Overall, it seems clear that the recent rise in per passenger charges in relation to the Aviation Security Fee does not reflect an increase in costs of provision but instead demonstrates a failure of the system to deliver value for money for consumers travelling through German airports. In this context, any decision to increase the current €10 cap would establish a dangerous disincentive to efficiency and productivity growth. If the cap is simply increased every time it becomes likely that it will be breached substantively, then it ceases to act as any form of incentive on either

the Federal Police to secure appropriate value for money contracts (at present the state must cover any costs over and above the €10 cap) or on aviation security companies to drive efficiency in provision. This will ultimately lead to even more inefficient security provision than there is now (a topic we consider further below), higher fares to air passengers, reduced demand, reduced connectivity, and, ultimately, stunted economic growth across the German economy.

What Would Be the Immediate Effect of Removing the Cap?

2.9. It is also important to consider to what extent the €10 cap is currently insulating airlines from additional security charges. This is important because the BMI has consistently maintained that there are only a few airports where the Aviation Security Fee would increase should the existing €10 cap per lifted. This analysis is shown in Figure 2.3.

Figure 2.3: Actual Costs of Security Provision at German Airports by Passenger Throughput,



Source: Ministry of the Interior and Homeland, BMI Transparency Records, & EuroStat.

2.10. This analysis demonstrates a number of points:

- nearly half of the airports in the group have aviation security costs that are at €10 per passenger or above. There are a further six airports that are within €1 of the existing cap. The additional charge would be passed through at most German airports either straight away or in the very near future. This is a real and current threat to the cost and competitiveness position of German airports;
- the line of best fit suggests that Aviation Security Fees are higher on a per passenger basis at smaller airports. This is unsurprising given the economies of scale that can be achieved at larger airports. However, it does mean is that at smaller airports that the effect of the removal of the cap will be the most extreme. This is highly problematic as it is these airports that are essential in providing regional connectivity within Germany

and supporting economic development in more peripheral areas. They are also likely to be the airports at which route viability is most fragile;

- despite their significantly greater scale, neither Frankfurt nor Munich, the two largest airports on the chart, have been able to realise significant economies of scale compared to other smaller airports in Germany. This is surprising and concerning, suggesting again that the market for aviation security services in Germany is not operating effectively;

- it is also noticeable that there is a substantial variance in the Aviation Security Fee at different airports, even where they are of a similar scale. This begs the question as to why some airports appear to be so much more efficient in provision compared to others? It again suggests that there is considerable inefficiency in the market for security provision in Germany and that in many cases public authorities are not attaining value for money in procuring services.

2.11. The analysis strongly suggests that there would be an immediate rise in costs for passengers, particularly those at smaller regional airports. It also suggests that there is substantial room for improvements in the efficiency of operations at some airports, which would negate the need for an increased cap. Efficiency gains are, however, unlikely to be achieved in an environment where there is no incentive to achieve them. The €10 cap is essential for the existence of this incentive. It should also recognised that there is in reality a strong argument to suggest that rather than looking at raising the cap, the Government should be seeking to push down the Aviation Security Fee cap to drive improvements in the efficiency of provision. Currently, the level costs seen in the market are simply not reflective of an efficient operation and this inefficiency is adversely affecting consumers and the German economy.

How Might the Aviation Security Cap Develop in the Future?

2.12. For the purposes of this analysis, we have postulated two hypothetical scenarios whereby the Aviation Security Fee cap is raised to €15 per passenger in the first instance, before being increased to €28.50 per passenger in the medium term.

2.13. Exactly how Aviation Security Fees at individual airports will react to a change in the cap is, of course, hard to predict. However, it is clear that some small and medium sized airports would charge to the €15 cap straight away and, given the pattern in recent years of charging to the €10 cap at many German airports and the removal of the incentive for efficiency, it seems reasonable to assume that many others will see increases to €15 per passenger in relatively short order.

2.14. The timescales over which a €28.50 cap might be reached are, of course, more speculative but, again, given recent patterns, it would seem reasonable to suggest that many airports could reach the higher cap over the next five to ten years.

2.15. For the purposes of this assessment of the economic impact, we have examined two scenarios:

- €15 Cap – this assumes that all airports in Germany charge to the cap over the next few years;
- €28.50 Cap – this assumes that all airports in Germany ultimately charge to the €28.50 cap in the medium term.

2.16. Our analysis does not define a precise timescale for these scenarios to occur and is based on traffic levels and GDP levels from 2022. To the extent that passenger markets continue to recover and grow post-COVID, the estimates of impact presented later in this report are, hence, inherently conservative.

3. The Efficiency of Aviation Security Provision in Germany

Introduction

3.1. In this Section, we consider further the available evidence on the efficiency or otherwise of security provision at German airports and, hence, the validity of the case for raising the existing €10 per passenger cap. We have considered two key pieces of evidence:

- the level of similar security charges in other parts of Europe;
- the available information on security processing rates at German airports compared to some available benchmarks.

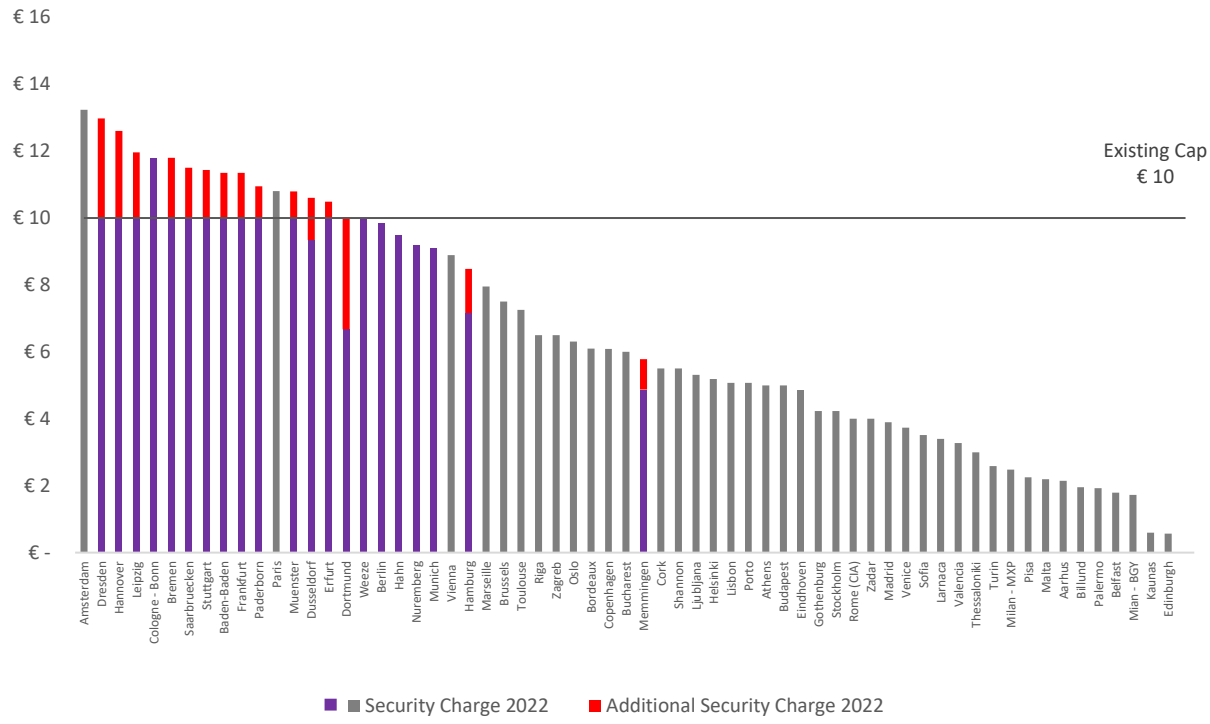
3.2. We examine each of these in turn below.

Benchmarking of Aviation Security Fees

3.3. Germany is not the only country that levies an Aviation Security Fee. Such charges are relatively common and there are a range of comparators that can be identified. We have sought to ensure that the scope of security charges shown is comparable to that which is levied in Germany and certainly that the scope of the charge is not smaller than that in Germany.

3.4. Figure 3.1 shows the per departing passenger Aviation Security Fees at a wide range of airports across Europe. German airports are those denoted with the colours purple and red. Purple highlights the level of charge as dictated by the German government's Aviation Security Fee and red denotes the additional charge levied by the airports for other security activities per departing passenger. German airports, irrespective of size, command the largest passenger security fees in Europe.

Figure 3.1: Per Passenger Aviation Security Fees at German Airports and Comparators



Source: Ministry of the Interior and Homeland, BMI Transparency Records, & Airport Published Fees and Charges.

3.5. The average passenger security charge amongst the capital cities listed here is €6.06. However, in 2022, Frankfurt's effective passenger security charge was €11.35, Munich was €9.10 and Berlin was €9.86

3.6. This gulf in charges, versus other European peer group airports, has widened further still for regional German airports. The 22 peer group regional airports in Figure 3.1 have an average security charge of €3.66. However, in 2022, Hannover's effective passenger security charge was €12.60, Leipzig €11.96, Bremen €11.80 and Baden-Baden €11.35.

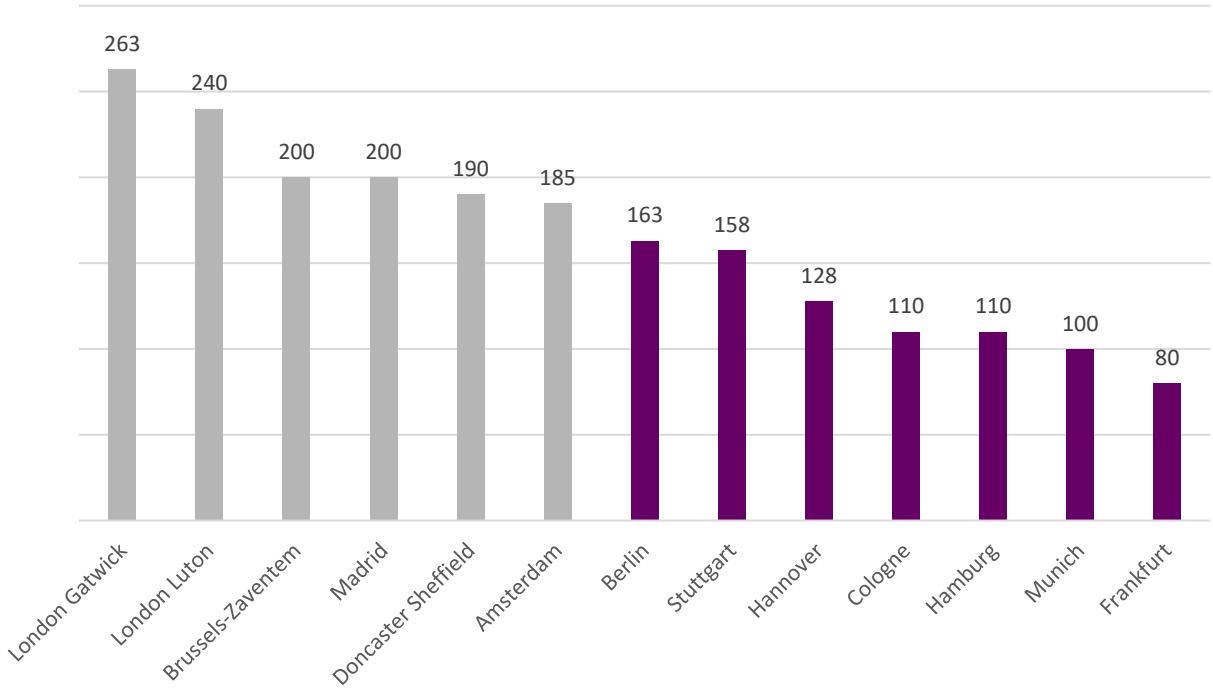
3.7. 95% of European peer group airports operate below the existing €10 cap. No airport in Europe, with the exception of Amsterdam, has charges remotely close to the hypothetical €15 charge. Given the Airport Charges Directive and ICAO guidelines expect cost-relatedness of airport charges, it is reasonable to assume that security costs are fully recovered through the comparator charges examined here, as they are in Germany.

Benchmarking of Security Processing Rates

3.8. Alongside any assessment of the costs associated with aviation security provision it is also important to consider the efficiency of the operations in terms of passenger processing rates. Given that the largest cost element within the German Aviation Security Fee by some margin is personnel costs, it is important to understand whether these resources are delivering efficiently. At the outset, it should be recognised that data on processing rates at individual airports is limited and there is no public source that provides a comprehensive view. Hence, what is set out here is a review of available evidence that compares some airports in Germany with benchmarks elsewhere.

3.9. For some time there have been comments from the airline community and, indeed, some airports, concerning the slow processing rates that are achieved at German airports. Figure 3.2 shows a comparison of the number of passengers that can be processed by a single security lane in an hour at a number of German airports and comparators across Europe. This highlights an alarming pattern in terms of security provision at German airports. While they are amongst the highest cost per passenger in Europe, they are also amongst the least efficient in terms of passenger processing rates. None of the German airports for which data has been identified come close to the rates achieved by the benchmark airports in Europe. Frankfurt, the worst performing of the German airports, is 70% slower than that achieved at London Gatwick.

Figure 3.2: Passenger Security Processing Rates per Lane Per Hour



Source: Fluko, Transparency Reports, Press Articles and York Aviation data.

3.10. Together, this suggests very poor productivity performance in Germany and that, as a result, rather than seeking to raise the Aviation Security Fee cap, the German government should be seeking to drive improvements in productivity, thereby reducing the need for an increase and potentially even reducing the cost burden.

3.11. New scanner technologies will improve processing rates and a number of trials at German airports have seen significant improvements. For instance, Munich is expecting to achieve a 160% improvement with the new CT scanners, taking its rate to around 260 passengers per hour per lane. However, this needs to be seen in the context of what others are expecting to achieve with the same technology. London City and Luton airports have cited expected processing rates of between 390 and 450 passengers per lane per hour. This highlights that the problem in Germany stems from poor labour productivity. It is also worth noting that there seems to be no relationship between the Aviation Security Fee and the efficiency of provision. For instance, Berlin is cheaper than Frankfurt, but has recovered less after Covid and has higher processing rates. This reflects a market that is not functioning well and is offering poor value for money and inconsistency across Germany.

Conclusion

3.12. Aviation security provision in Germany is both expensive and inefficient. The priority for the German government should be deploying new technology and addressing productivity issues before seeking to raise the €10 cap. In truth, it would seem reasonable to suggest that the Government should in fact be seeking to reduce the cap to drive efficiency.

4. The Impact of the Potential Changes on Demand and Connectivity

Introduction

4.1. In this Section, we begin to consider the potential effects of raising the Aviation Security Fee cap in terms of what will happen to passenger demand at German airports and to the route network at those airports. We initially consider likely reactions to an increase in the charges, before considering how the already high cost environment in Germany has impacted on recovery from COVID-19. Finally, we consider the passenger and connectivity impacts of raising the Aviation Security Fee cap to €15 and to €28.50.

How Will Demand and Supply React to an Increase in the Aviation Security Fee?

4.2. Airlines operate in a highly competitive market in Europe and, hence, in the great majority of cases they will be charging at marginal cost[1]. Hence, any additional costs that will impact on the fare ultimately paid by passengers, such an increase the Aviation Security Fee, cannot be absorbed by airlines and would have to be passed on to passengers. This will ultimately lead to an increase in the fares paid by passengers travelling to or from Germany. In such circumstances, we would expect there to be a reduction in demand as some people choose to no longer travel at the higher price or choose to travel elsewhere (passengers that were visiting Germany).

4.3. This reduction in demand will ultimately impact on the viability of individual routes, as the reduced demand will lead to lost revenue for the airline against a cost base that is to a large extent fixed. This will lead to a reduction in profitability that will lead to the withdrawal of some of these routes and a reduction in the connectivity offered by German airports. It should be noted that it is not in fact necessary for the increased Aviation Security Fee to make a route loss making for it to be withdrawn. It is sufficient for it to make the German route opportunity less attractive than another opportunity elsewhere. In other words, we will see an effect whereby Germany loses competitiveness as a place to locate aircraft capacity. In combination, the demand and supply effects will lead to a loss of economic activity in the economy, both from the air transport sector and in the wider economy.

4.4. York Aviation has used an elasticity model to consider the demand and connectivity effects of raising the Aviation Security Fee cap. This model estimates an average air fare at each German airport based on the airlines operating at that airport, and then uses price elasticities developed by IATA[2] to estimate the number of passengers lost if the price cap is increased. This passenger loss is then translated to a loss in the number of destinations served using a elasticity of destinations served to demand, based on a panel regression analysis of the German market over the last ten years. This suggests an elasticity of routes served to demand of around 0.47 for LCCs and 0.4 for mainline airlines.

How Has Germany Performed Post-COVID?

4.5. **Figure 4.1** shows the overall level of seat capacity recovered, by peer country, versus 2019. Of the 5 largest European aviation markets, Germany remains significantly behind the recoveries of other peer countries. It has achieved a 77% recovery of 2019 seat capacity in 2023. This compares very poorly with Spain and Italy who have fully recovered and surpassed 2019 levels. The UK and France have also recovered to around 95% of 2019 capacity.

4.6. **Figure 4.2** shows the level of seat capacity recovered by airline business model, split between low-cost carriers (LCCs) and mainline carriers. In all peer group countries LCC's have recovered capacity to more than 2019 levels. France has seen LCCs deliver 24% more seats. Germany is the only leading European country that has not seen LCC's recover strongly. In Germany, LCC's remain 34% behind 2019 capacity levels.

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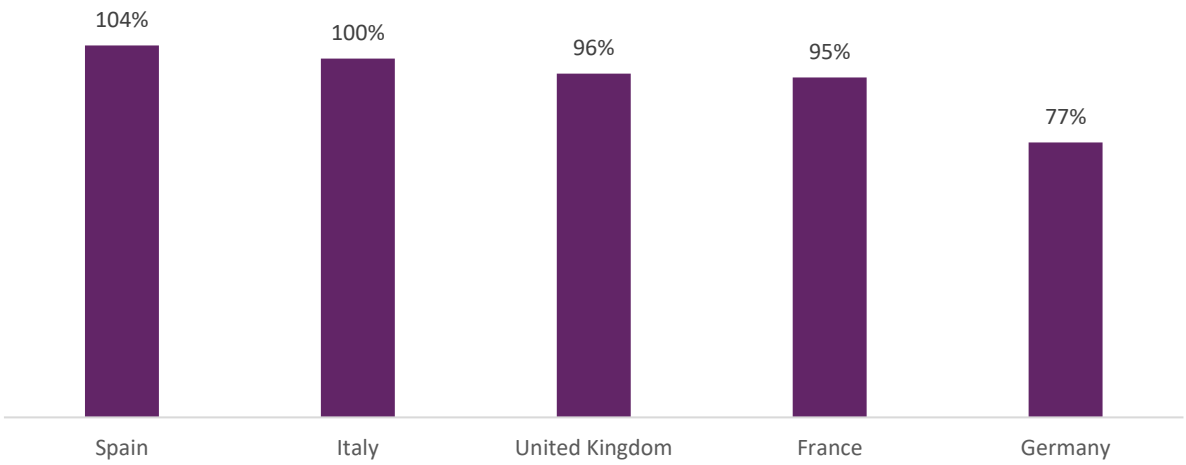
[1] If they were not, economic theory would suggest that another airline would simply enter the market offering a lower price and force them to reduce prices or exit the market.

[2] Air Travel Demand Measuring the responsiveness of air travel demand to changes in prices and incomes – IATA (2008).

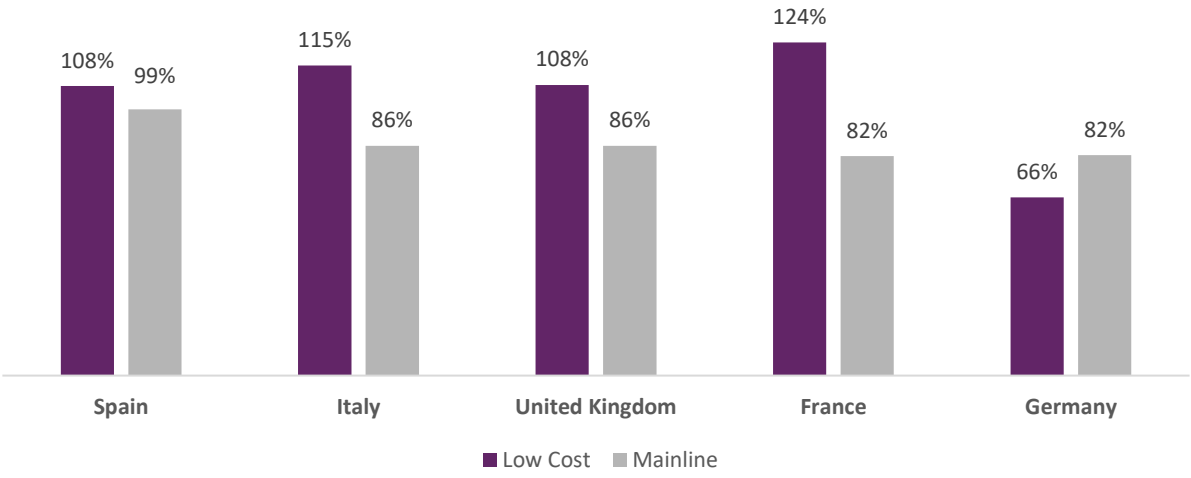
4.7. Across the leading European aviation markets, mainline carriers have not fully recovered to 2019 capacity levels and are unlikely to do so for some time. Mainline carrier recovery in Germany is the weakest in the group, with only 82% of seats recovered. The best performing market is Spain, where mainline carriers have recovered to 99% of 2019 capacity. In other European countries the slower recovery of mainline carriers is offset by significant LCC growth. This is not the case in Germany where both models are poorly performing. This weak recovery likely reflects the high cost regulatory environment in Germany, stemming from high Aviation Security Fees and the high air passenger tax.

Figure 4.1: Capacity Recovery 2023 versus 2019



Source: OAG, York Aviation Analysis

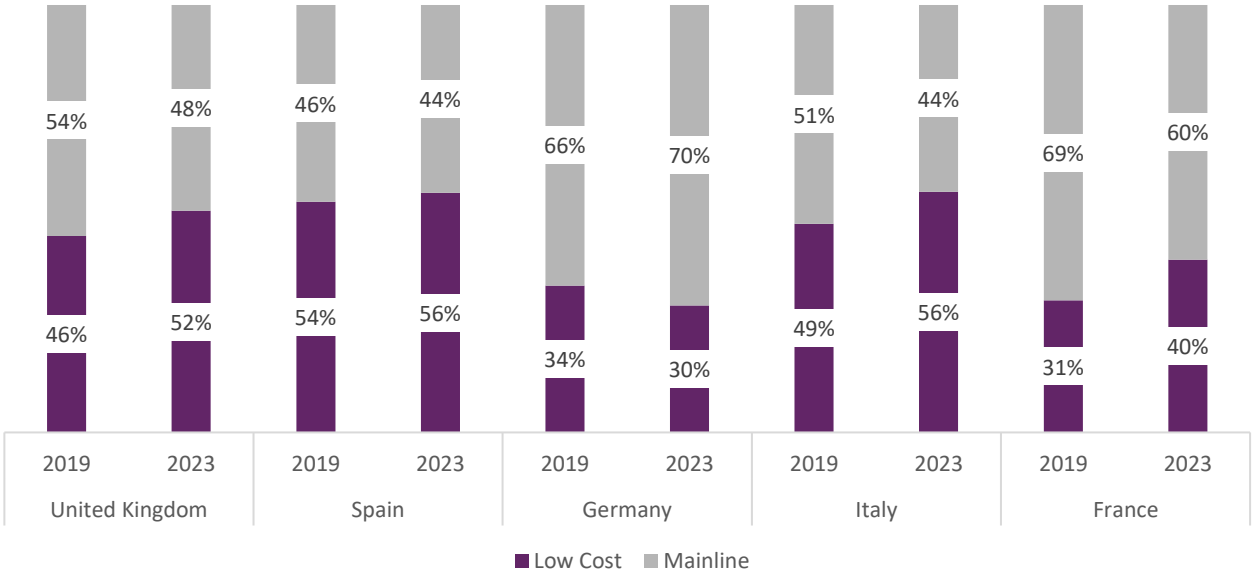
Figure 4.2: Capacity Recovery 2023 versus 2019 by Airline model for Leading European Markets



Source: OAG, York Aviation Analysis

4.8. As can be seen in **Figure 4.3**, the lack of LCC seat capacity in Germany is not a new pressure on Germany's ability to grow. Over successive years new and increased charges have resulted in a market dominated by mainline carriers, who typically operate from a concentrated number of airports at higher fares, thus denying the overall economy and importantly, regional economies, the benefits of competitive air fares and the breadth of connectivity that LCCs can bring. Post-pandemic, Germany is the only leading European country that has seen the share of LCC seat capacity decline.

Figure 4.3: Share of Capacity by Airline model for Leading European Markets, 2019 and 2023



Source: OAG, York Aviation Analysis

4.9. Given the existing threat to Germany's post-COVID aviation recovery and the sustained brake applied to the development of regional airports, because of the existing requirement for airlines to bear the cost of systematic inefficiencies at some smaller regional airports, there is significant concern around any measure that further increases the already high regulatory costs of operation in the German market.

Connectivity and Demand Impact Scenarios

4.10. Table 4.1 sets out our estimates of the impacts associated with the two scenarios for future levels of Aviation Security Fee. As described above, as there is considerable uncertainty over the future growth in demand and when cap levels might be reached, these reflect impacts against 2022 demand levels and a Summer 2023 route network.

Table 4.1: Passenger Demand and Connectivity Impact Estimates by Aviation Security Fee Scenario

Airport Size	2022 Passengers	Destinations Served Summer 2023	€15 cap				€28.5 cap			
			Passengers Lost		Destinations Lost		Passengers Lost		Destinations Lost	
Large	80	491	-1.7	-2%	-6	-1%	-5.8	-7%	-17	-3%
Medium	67	815	-2.7	-4%	-18	-2%	-8.8	-13%	-51	-6%
Small	18	363	-0.6	-4%	-18	-5%	-1.9	-11%	-27	-7%
Total	**165**	**1,669**	**-5.0**	**-3%**	**-42**	**-3%**	**-16.4**	**-10%**	**-95**	**-6%**

Source: York Aviation.

4.11. The impact of German airports charging up to a new €15 Aviation Security Fee cap is a loss of around 5 million passengers each year (around 3% of total demand) and 42 routes from German airports. These losses are concentrated in medium size airports particularly, which collectively lose around 2.7 million passengers each year and 18 destinations. Small airports are disproportionately affected by connectivity losses, with 18 routes going or around 5% of the total, and demand losses, with around 600,000 passengers lost. Large airports, Frankfurt and Munich, together lose around 1.7 million passengers per annum and six destinations.

4.12. As the cap rises to €28.50, the losses become more extreme. At 2022 demand levels, the number of passengers lost from German airports would be around 16.4 million, with medium sized airports taking the brunt of the impact, losing 8.8 million passengers. This equates to 13% of total passengers. Small airports are also heavily affected, losing 1.9 million passengers (11%). The large airports are proportionally less affected by the increased cap but in

absolute terms still lose a significant 5.8 million passengers. Connectivity losses are also substantially more dramatic, with 95 routes lost across the country or 6% of the total. The bulk of losses are at small (27 routes) and medium (51 routes) sized airports.

Conclusions

4.13. The German air transport market is already struggling with an anaemic recovery, fuelled by the high regulatory costs in the country. Making this situation worse by increasing the Aviation Security Fee would likely do significant further damage, especially at small and medium sized airports. Airports charging up to a €15 cap could result in the loss of 5 million passengers and 42 routes. With a cap of €28.50, these impacts would increase to around 16.4 million passengers and 95 lost routes.

5. Impact of Increased Aviation Security Fee on German GDP

Introduction

5.1. In this Section, we consider how increasing the Aviation Security Fee will impact on the German economy over time. Initially, we describe briefly the mechanisms by which air services impact on the economy, before presenting the impacts on GDP from the €15 and €28.50 caps.

How Do Airports Impact on Economies?

5.2. The importance of airports to economies has been long established. They are recognised as both significant centres of employment in their own right, with attendant supply chain effects (referred to as indirect effects) and income expenditure effects (referred to as induced effects), but also as catalysts of economic activity in the wider economy.

Airports as Centres of Employment

5.3. Airports are the geographic centres for the air transport industry. They are where the service is ultimately delivered to its end users, passengers or freight customers. However, airports are now about much more than simply loading passengers or freight on to an aircraft. They are centres for the delivery of a wide range of ancillary goods and services that either directly support the delivery of air services or service the broader demand for goods and services from passengers passing through the airport. As such, they are often major centres for employment and economic activity within the region's they serve and are diverse economies in their own right, offering employment opportunities in a wide range of sectors and at different skill levels.

5.4. This concentration at and immediately around an airport is known as its direct economic impact. However, an airport's economic footprint does not stop there. Organisations at airports have supply chains that enable them to provide the goods and services that they offer. Purchases in this supply chain within the region around airports support further employment and prosperity (indirect effects). Expenditure of the wages and salaries earned by those employed by the direct and indirect impacts injects further consumer expenditure in to the economy, which in turn supports more economic activity and jobs in the region.

5.5. Research for ACI EUROPE undertaken by InterVISTAS Consulting into the economic impact of airports in Europe estimated the direct, indirect and induced impact of German airports at around €39 billion in GDP and 522,000 jobs, equating to around 1.4% of German GDP.

Why Aviation Connectivity Matters for the Wider Economy

5.6. The ways in which air connectivity provided by airports impacts on economic performance in the wider economy are summarised below. This overall effect is sometimes referred to as the wider economic impact or catalytic impact of airports. While this effect is multifaceted, it can be explained in terms of a number of channels of effect:

- Foreign Direct Investment;
- Trade;
- Labour Market Effects;
- Agglomeration;
- Tourism.

5.7. At the outset, it is important to note that Germany has a highly global economy. Hence, air connectivity is more important to all parts of Germany than is necessarily the case in other countries of the world. The importance of air connectivity to Germany must be seen in this context as global connectivity is a vital component of the current and future economic performance. Connectivity must also be considered as a dynamic element in underpinning growth, i.e. the level of connectivity available to businesses in a region has to keep pace with that available to competitor regions.

5.8. Each of the channels through which air connectivity delivers benefit to the wider economy in the region around any airport are described below.

Foreign Direct Investment (FDI)

5.9. Research has established the existence of a linkage between air transport and the attraction or retention of inward FDI. Whether the investment is inward or outward, strong connectivity is needed between the head office and the branch locations to ensure that operations are efficiently managed. The availability of a strong and growing network of air connections is an important factor in both attracting inward investment and enabling local firms to exploit investment opportunities overseas.

Trade

5.10. The importance of air travel and air connectivity in increasing levels of trade is again well established. In relation to trade in goods, air cargo is a quick and efficient means of transporting goods around the world, which makes economic sense in relation to the transport of some goods, primarily those that are high-value, low weight or time critical.

5.11. Passenger connectivity is also important in terms of trade. This is the aspect that is of primary interest in relation to the potential impact of the German Aviation Security Fee. In relation to the trade in goods, companies need staff to travel to meet potential customers, to secure deals and to provide after sales care. This relates to both exports and imports. Trade in services is also heavily reliant on air passenger connectivity. Air connectivity is exceptionally effective at reducing the perceived distance between markets.

5.12. Hence, air service connectivity is important in facilitating trade in both goods and services. Whilst this is bi-directional, encouraging imports as well as exports, ultimately enabling bi-directional international trade facilitates economic growth through enabling countries to develop comparative advantage. As a consequence, better connected regions will be further up the productivity curve and better able to avail themselves of trading opportunities than parts of Germany that are less well connected.

Labour Market Effects

5.13. An area that is increasingly being identified as one of the channels of impact through which air connectivity operates is its effect on the labour market through its ability to influence individuals' decisions around where and how much labour to supply. This effect can, in broad terms, be divided in to two parts:

- air connectivity is important for Germany in being able to attract talented individuals to live and work in the country on a permanent basis as air connectivity is needed to support the quality of life of this group through the ability to visit family and friends in their countries of origin.
- air connectivity is also essential in supporting the lifestyle choice of an increasing number of high value added individuals who use air services to commute for short periods or even weekly while living overseas. These individuals often provide specialist or high value services that are part of what enables Germany's competitive advantage. The importance of this dynamic is heightened by the serious labour shortages in Germany at present and the ageing population, which is shrinking the labour force.

Agglomeration

5.14. Agglomeration effects are productivity benefits that can be achieved by firms located close to each other, perhaps through knowledge spillovers between firms, improved access to suppliers or to larger labour markets. They relate to the concentration of economic activity in an area. In other words, the more firms located within an area the greater the likely agglomeration effects. In the context of air connectivity, there are two potential agglomeration impacts:

- as a direct impact from the way in which air services can increase effective density across large areas by reducing travel times and increasing the ease with which agglomeration effects may occur across national borders. This is essentially the boost in productivity within firms as air services make the world smaller, facilitating innovation and cooperation and widening markets for both goods and labour;

- as an indirect impact relating to the potential impact of air services in terms of influencing FDI decisions, which in turn result in clustering of firms in locations around major airports, again resulting in an increase in effective density and greater agglomeration.

Tourism

5.15. Air services make Germany easier and faster to get to for potential visitors travelling either for business or leisure purposes. Hence, the availability of air services influences the decisions that visitors make. The importance of air services for attracting inbound tourism holds true at a regional and sub-regional level as if a region is not easy to reach directly, visitors from overseas are far less likely to visit. If a city, sub-region or region is not easily accessible, by air or by another mode, then it is either unlikely ever to reach consideration in the first instance or, ultimately, to be chosen as a preferred option for a visit.

5.16. We would also note the importance of outbound tourism in supporting economic prosperity in Germany. The ability to travel and experience other countries and other cultures is an extremely important part of life for many people, while for others the ability to visit friends and relatives in other parts of the world is vitally important. In this context, access to air travel is a key component in making cities and regions 'liveable' places for people. Hence, access to an airport with a good range of services is an increasingly important factor in attracting people to live and work in an area, particularly in the context of what is an increasingly global workforce. Ultimately, this will support population growth and additional economic activity in an area, provide prosperity and create the conditions that are needed for economic recovery and growth.

The Economic Impact of Increasing the Aviation Security Fee in Germany

5.17. Our assessment of the economic impact of raising the Aviation Security Fee cap in Germany is based on a range of existing research examining the economic impact of air transport in Germany and on the impact of aviation taxes in Germany. Most notably we have drawn on:

- research by PwC on the impact of aviation taxes in Europe from 2017 and specifically the Germany country report. This analysis used a complex computable generalised equilibrium model to examine impacts across the economy;

- the Europe wide ACI Europe report in to the economic impact of airports in Europe undertaken by InterVISTAS Consulting in 2015;

- a report by Oxford Economics for IATA on the economic importance of air transport to Germany from 2018.

5.18. Our assessment considers the full range of economic impacts on the economy, encompassing direct, indirect, induced and wider / catalytic impacts. It builds particularly on the PwC computable generalised equilibrium analysis, which accounts for changes and displacements in the economy as it moves to a new equilibrium, and therefore presents a net economic impact from the changes to the Aviation Security Fee cap. The results of the analysis for the two cap scenarios are shown in Table 5.1. These results represent the impact in the medium term once effects have matured.

Table 5.1: Net Economic Impact on Germany from Increasing the Aviation Security Fee Cap (€ billions)

	€15 cap	€28.5 cap
Total GDP Impact by 2030	-€2.5	-€8.5
of which Aviation	-€1.3	-€4.3
Net Tourism Expenditure	-€0.2	-€0.8
Tax Income	-€0.04	-€0.13

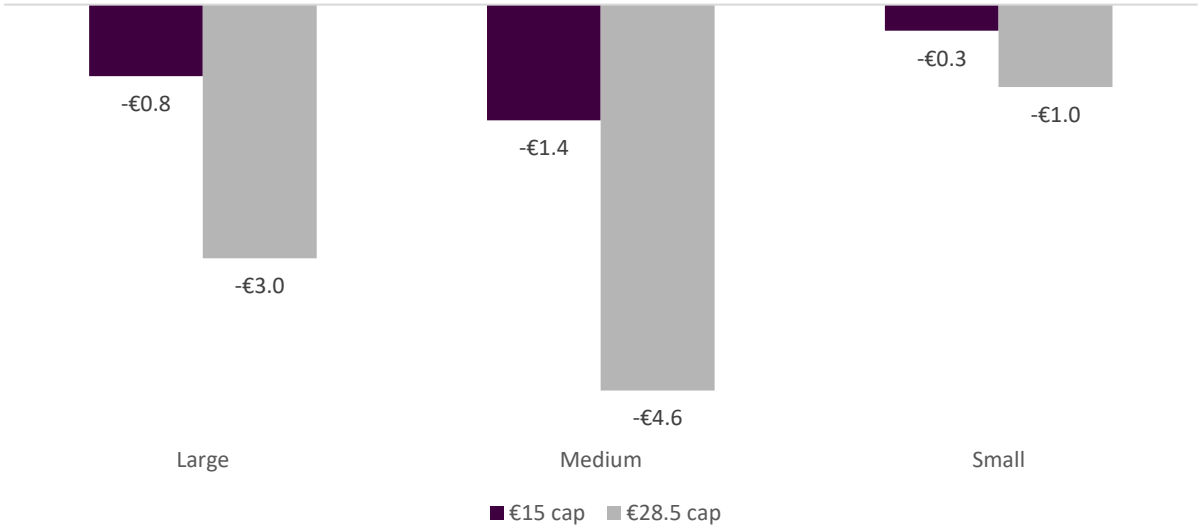
Source: York Aviation.

5.19. The potential economic impacts of raising the Aviation Security Fee cap at German airports for the German economy are significant. With the cap increased to €15, the German economy would lose around €2.5 billion each year. Around half of this would come from reduced activity in the aviation sector. Within this overall effect, would be a €200 million reduction in net tourism expenditure in Germany. It should also be noted that while such a move might increase direct tax revenues from the Aviation Security Fee, the impact on indirect taxes would be such that the public sector would in fact suffer a net loss of revenue of around €40 million per year.

5.20. If the cap is increased to €28.50, the effects become markedly larger. The overall negative impact on German GDP increases to around €8.5 billion, of which €4.3 billion directly relates to the aviation sector. Net tourism expenditure falls by around €800 million, while public sector tax revenues decline by around €130 million per year.

5.21. Figure 5.1 shows the total GDP effects of the increased cap scenarios by airport size group. This shows the particular impact on medium sized airports in Germany, which are essential element in supporting regional economic development in the country.

Figure 5.1: Total GDP Impacts by Airport Size Band



Source: York Aviation.

Conclusions

5.22. The potential negative economic consequences of raising the Aviation Security Fee cap are significant, with the potential to result in a significant loss of economic activity in both the aviation sector and in the wider economy. Total lost GDP ranges from between €2.5 billion annually, up to €8.5 billion. The majority of losses relate to activities at medium sized airports in Germany, which are central to regional economic development.

6. Conclusions

6.1. The Aviation Security Fee is part of a high cost regulatory regime in Germany that is damaging the country's position as a place to locate aircraft and it is damaging the economy. These taxes have risen markedly in recent years with no apparent reason for the change that would require reconsideration of the existing cap. Seeking to increase the current €10 cap in line with the current proposals will further damage the already weak recovery in the German market following COVID-19.

6.2. Our analysis of the efficiency of security provision in the German market suggests that the issue is not that there is a need to increase the current cap but that there is a need to significantly improve the productivity of provision. German airports have amongst the highest security charges in Europe and amongst the lowest passenger processing rates. Movement towards European norms would significantly reduce the pressure on the per passenger charge and likely reverse recent trends.

6.3. In terms of the impacts on demand and connectivity, our analysis suggests that airports charging up to a €15 cap could result in the loss of 5 million passengers and 42 routes. With a cap of €28.50, these impacts would increase to around 16.4 million passengers and 95 lost routes.

6.4. This loss of demand and connectivity would knock on to the aviation sector and the rest of the economy. The potential negative economic consequences of raising the Aviation Security Fee cap are significant, with the potential to result in a significant loss of economic activity in both the aviation sector and in the wider economy. Total lost GDP ranges from between €2.5 billion annually, up to €8.5 billion. The majority of losses relate to activities at medium sized airports in Germany, which are central to regional economic development.

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