

STUDY ON CIVIL AVIATION SECURITY FINANCING

Summary of Final Report

September 2004



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1 Study context

The prime purpose of this study is to give information on the ways that aviation security is financed in the European Union, with a view to identifying structural differences. Consequently, it would be erroneous to use the contents of the study to make subjective comparisons between security costs and taxes, charges and surcharges levied by the Member States, airports and air carriers respectively. It should be noted that the study does not seek to benchmark the revenue and cost units per passenger or tonne of air cargo between airports or carriers. Indeed, it is to be expected that in a European Union with different levels of taxation, different average wages, different levels of cost of living that there will be differences in costs between and even within countries for the same services at different airports.

In light of the above, the study is a snapshot of the situation regarding the financing of aviation security in the Member States during 2002. No assumptions are made as to whether 2002 was a typical year for the financing of security.

Systems for levying security charges may have changed during this period and, in particular, thereafter. Wherever possible footnotes, have sought to highlight this.

In addition, some administrations may have levied higher than necessary charges in 2002 and subsequently refunded moneys and/or revised charges in 2003. This information cannot be contained in a study which focuses on 2002 and consequently may lead to the misleading impression that some entities made profits from security taxes or charges, either in 2002 or over longer timeframes.

It is recognised that a study covering two or more years may have reduced the effects of one-off actions, deferred and mid-term revisions of levels of charges. However, since the trigger for the study was the impact of security costs post 11 September 2001, then historic data for 2001 or earlier are of little value. The alternative – studying costs in both 2002 and 2003 – would have meant that the report would have taken twice as long to prepare.

It should also be stressed that all the information contained in the study regarding national authorities, airports and air carriers is based on information that was given voluntarily. Their willingness to act in a transparent manner is to be applauded. It was not part of the work to evaluate the accuracy of such data.

In conclusion, the level of taxes, charges and surcharges as well as the security related expenditure referred to in the report were valid during 2002 and may now have changed over time. However, the purpose of the study is to highlight the various approaches taken to finance aviation security. This information is still pertinent and it, not the level of charges at individual airports or by individual carriers, will be the basis for any Commission communication on the subject.

2 Introduction

Following the events of 11 September 2001, the European Commission (the Commission) was requested by the European Summit and the Council of Ministers to bring forward legislation on harmonised basic standards for aviation security throughout the European Union. On 11 October 2001, the Commission forwarded to the Council and to the European Parliament its proposal for a regulation¹.

In December 2002, through Regulation (EC) No 2320/2002 (the Regulation), the European Commission established common rules in the field of civil aviation security across all Member States.

The responsibility for the provision of security services at European airports varies between Member States. In some States, authorities such as a national police force provide security services. In other States regional or local authorities provide the security, whilst in others it is the responsibility of the airport either with their own staff or through the use of private security companies. Many States permit a mix of security providers. Who provides the security services should have a bearing on how the services should be financed.

The Commission recognised that if the EU legislation leads to additional action this will have a cost. However, it was relatively unclear what additional costs actually resulted from this legislation alone, not least since the basis of the legislation is ECAC Document 30 to which all Member States are signatories but which was applied with different degrees of thoroughness in each State.

Moreover, there already existed many forms of security taxes and charges levied on airlines, passengers and freight operators either nationally, or by individual airports. However, there was no clear picture of either the levels of charges made on an airport-by-airport basis, nor of how this money is actually spent, as the responsibilities for the security measures differ from State to State and even from airport to airport.

As part of the process of adoption of EU legislation, the issue of the financing of aviation security was raised. Whilst it was not relevant that such an issue was addressed directly in the Regulation laying down harmonised basic standards for aviation security, it may be appropriate that the European Commission brings forward a complementary legislative initiative that specifically addresses this issue.

The interinstitutional declaration in October 2002 accompanying the Regulation reiterated the determination of the European Parliament, the Council and the European Commission to continue to strengthen the quality of aviation security systems in the Community.

The three institutions recognised that this policy development raised important questions in relation to its funding aspects and agreed that this issue had to be analysed as a matter of urgency in order to identify both differences existing in the Community over the funding of aviation security and possible solutions.

It is generally accepted that there are increased security related costs coming from security threats that are unlikely to diminish in the foreseeable future.

Airports and air carriers are of the view that there should be more government intervention in the financing of additional security measures. The aviation industry contends that European aviation does not have a level playing field compared to their counterparts in the US where significant federal funds have been and continue to be invested in aviation security measures post 11 September 2001.

¹ COM (2001) 575 – COD 2001/0234 of 10 October 2001, OJ C51 E, 26.2.2002, p.221

2.1 Objective

The objective of the study is to:

‘Provide the Commission with the information and analysis necessary to develop potential legislative actions at the EU level with regard to transparency and harmonisation of the application of aviation security measures, particularly with regard to its financing’.

The primary objective can be summarised as:

- Providing the Commission with accurate information on the current status of financing of civil aviation security measures within the 18 European States (15 EU States plus Iceland, Norway and Switzerland).
- Contributing to an objective decision on whether or not specific legislation at the EU level is necessary and desirable to promote harmonisation of methods of financing aviation security.

2.2 Approach

The study examines the costs of aviation security at a range of sizes of airports and air carriers within the 18 States as well as the levels of security tax, airport charges and carrier surcharges levied by the States, the airports and air carriers respectively.

The approach to carrying out the study had a number of stages. For the 18 States, the study outlines:

- The existing aviation security administrative structure in each of the States - who does what?
- The current aviation security funding methods – who pays for what?
- The estimated revenues generated from aviation security taxes, airport charges and carrier surcharges.
- Detailed analysis of the competitive impacts of income and expenditure for States, airports and carriers.
- Key conclusions.

2.3 Consultation with key stakeholders

The study included a broad consultation exercise with industry stakeholders including 18 State representatives, 41 airport groups or companies (large, medium and small size), 42 carriers (scheduled, charter, regional, no frills operators, freight and express air carriers/integrators).

A detailed questionnaire was developed to provide a framework for stakeholders to provide information. The questionnaire was divided into two main areas:

- Qualitative sections: National Aviation Security Programme (NASP) requirements, impacts post 9/11 and from the EC Regulation, etc.
- Quantitative: financial inputs on taxes, charges, surcharges, security revenues and expenditure.

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Stakeholder organisations including ACI Europe (airports), AEA, ERA, IACA and EEA (carriers)² provided assistance with the distribution of the questionnaires to the various stakeholders and subsequent follow up of queries. The overall response for the stakeholders was circa 75% as illustrated in the figure below.

Figure 1: List of stakeholders contacted and responsees to consultation

Stakeholder group	Number of contacts made	Number of responses received	Number of responses not received
States	18	18	0
Airports	41	31	10
Carriers	42	29	13
AEA Members	21	16	5
ERA Members	14	9	5
IACA Members	5	3	2
Low-cost	2	1	1
Freight carriers*	6	2	4
Total	107	80	27

Key: (*) The freight carrier category includes freight, express carriers and integrators.

Note: Freight forwarders were not included within the stakeholder consultation.

A number of airline and airport stakeholders declined to take part in the study. Air France was the only network carrier to decline participation.

The financial information in the report is based solely on the responses from the participating States, airports and airlines. The use of this information in the report has been checked and verified by the various participants to the study. This included provision of revised information from a number of stakeholders following presentation of study findings on 12th July 2004.

The financial information provided by the participants enabled high level analysis of security related revenues and expenditure at a State, airport and carrier level. The information provided did not allow analysis of the revenues and expenditure associated with particular security activities such as passenger search, hold baggage screening (HBS), etc.

The process of requesting, expediting and analysing responses from the various stakeholders proved to be extremely time consuming. The difficulties associated with the provision of financial information in particular illustrated the lack of focus on the detailed expenditure and revenues related to aviation security by many of the stakeholders.

² ACI Airports Council International; AEA Association of European Airlines; ERA Association of European Regional Airlines; IACA International Air Carriers Association; EEA European Express Association.

3 Background to aviation security policy development

Terrorism has been an ongoing threat to the aviation industry for the last 50 years. Three distinct phases in aviation terrorism have emerged during this period.

Phase 1: 1948 to 1968 - flight from persecution or prosecution.

Phase 2: 1968 to 1994 - the political phase.

Phase 3: 1994 to date - the aircraft as a weapon of destruction.

The initial phase of using hijacking as a means to escape persecution or prosecution migrated to using aviation-targeted terrorism for political gain. These phases have been relatively comprehensible and defensible for the world's governments and the global aviation industry.

Recent events however have marked a change in the philosophy behind the attacks. This latest phase, where aircraft are increasingly being used as a weapon of destruction, has resulted in dramatic changes to how aviation related security is conducted across the world.

There are a number of organisations associated with aviation security policy development including ICAO³, ECAC, IATA, etc. These organisations have the essential tools to enable standardised national programmes to be established worldwide, but until recently have been unable to ensure implementation of their policies.

Historically, improvements to aviation security have been reactive, responding to each crisis as it occurs. States have adopted (or not) recommendations put forward by the various international bodies resulting in an approach that is disjointed and incremental, rather than a coherent global standardised system essential to address the growing threat.

Aviation security policy proposed after the Lockerbie bombing in 1988 was not mandatory, and on 11 September 2001 most States had not implemented many of the proposals put forward to improve the security situation (e.g. 100% passenger and hold baggage screening and positive baggage reconciliation).

Whilst the European States were members of ECAC and were, in theory, implementing the requirements contained in ECAC's Document 30, the speed of implementation varied across the European States. It was generally considered unlikely that the ECAC deadline of 31 December 2002 would have been voluntarily met by all of the States.

Some States, including the UK had been moving ahead with the introduction of 100% passenger and hold baggage screening during the 1990s following the Lockerbie bombing in 1988.

The events of 11 September 2001 resulted in significant aviation security policy and legislation being introduced, in particular Regulation (EC) 2320/2002 in Europe and the Air Transportation Security Act (ATSA) in the US. Both sets of legislation have resulted in fundamental changes to the way aviation security is conducted and managed across the world.

³ ICAO: International Civil Aviation Organisation; ECAC: European Civil Aviation Conference, IATA: International Air Transport Association.

4 European aviation security policy response

In December 2002, through Regulation (EC) 2320/2002, the Commission established common rules in the field of civil aviation security across all Member States. Based on the current recommendations of ECAC Document 30, the main objectives of the Regulation were to:

- Establish and implement appropriate Community measures, in order to prevent acts of unlawful interference against civil aviation.
- Provide a basis for a common interpretation of the related provisions of the Chicago Convention, in particular its Annex 17⁴.

These objectives were achieved by the setting up of common basic standards for aviation security measures and appropriate compliance monitoring mechanisms. The majority of States already had a National Aviation Security Programme (NASP) in place prior to the introduction of the Regulation in December 2002. The majority of these NASPs had been introduced during the 1990s as a result of the Lockerbie bombing in 1988.

Introduction of the Regulation caused the Member States to review their NASPs to reflect any new requirements within the Regulation. All 18 States in the study expected to have completed their national aviation security programmes by the end of 2003, with the only exception being Norway⁵.

The majority of States have supplementary national aviation security legislation, some of which have extended the requirements set in the Regulation. Examples of this include the air marshal programme in Germany and Switzerland.

4.1 NASP impact on stakeholders – airports and carriers

Two key milestones have directly impacted aviation stakeholder operations:

- Implementation of the Regulation, particularly 100% hold baggage screening (HBS).
- Additional security measures post 11 September, particularly those enforced by US authorities (DHS, TSA, FAA, etc) e.g. reinforced cockpit doors.

Based on stakeholder responses, the key areas impacted include:

- **Passenger and baggage:** the screening of all passengers and baggage, passenger embarkation process, etc.
- **Airline operations:** ground and on-board procedures.
- **Aircraft:** protection of aircraft on the ground and the installation of reinforced cockpit doors.
- **Freight:** screening and trans-shipment handling.
- **Performance:** some delays on carrier on-time performance due to longer queues and processing times at security check points, and screening of hold baggage.

⁴ Annex 17 refers to ICAO Annex 17 (Security: Safeguarding International Civil Aviation Against Acts of Unlawful Interference) which is the annex that governs aviation security. Annex 17 is considered to be the rulebook of aviation security and details what is required to produce a valid national aviation security programme.

⁵ The Regulation EC No. 2320/2002 was finally enacted in Norway by the Ministry of Transport on 5th May 2004.

5 Structure of European aviation related security

There are two basic models for the provision of aviation related security activities within Europe:

Centralised Model – the main security activities are primarily the responsibility of the State via a government body (CAA, Ministry of Transport, police force, etc). This is broadly the situation in 11 States (Austria, Finland, Germany, Iceland, Italy, Luxembourg, Norway⁶, Portugal, Spain, Sweden and Switzerland⁷).

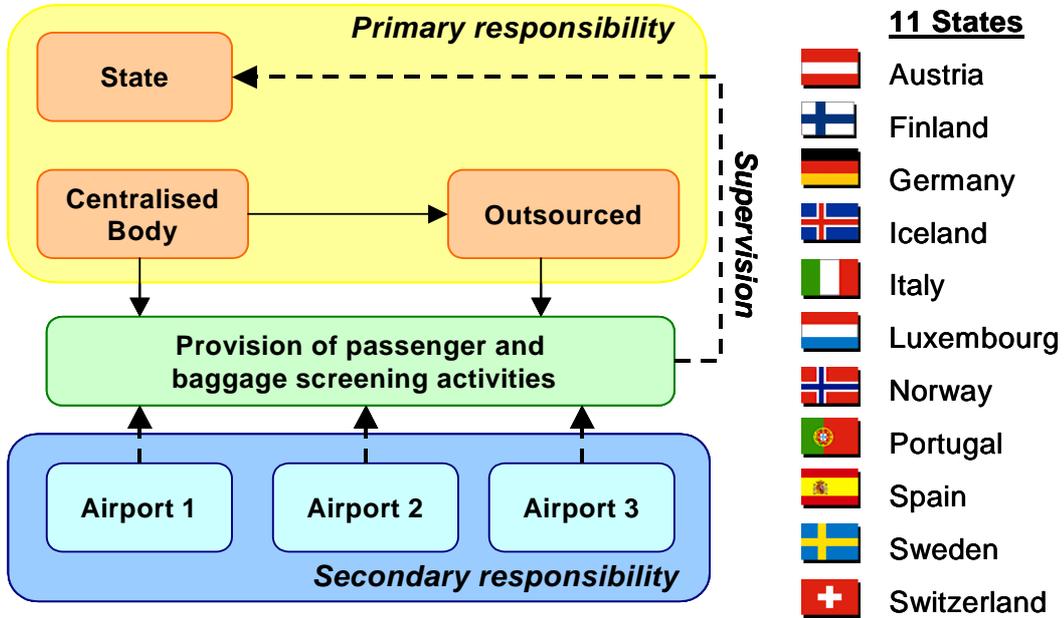
Decentralised model – the main security activities are provided by the airport authorities under the supervision of the relevant authority (normally the CAA). These activities could either be provided by the airport directly or outsourced to a third party. This is broadly the current situation in 7 States (Belgium, Denmark, France, Greece, Ireland, Netherlands⁸ and the UK).

⁶ With the enacting of Regulation EC No. 2320/2002 in May 2004, provision of primary security activities at Norwegian airports is now the responsibility of the airport operator or outsourced to third parties; effectively adopting a more decentralised approach.

⁷ In Switzerland, key security responsibilities such as passenger and baggage screening are undertaken by regional police forces.

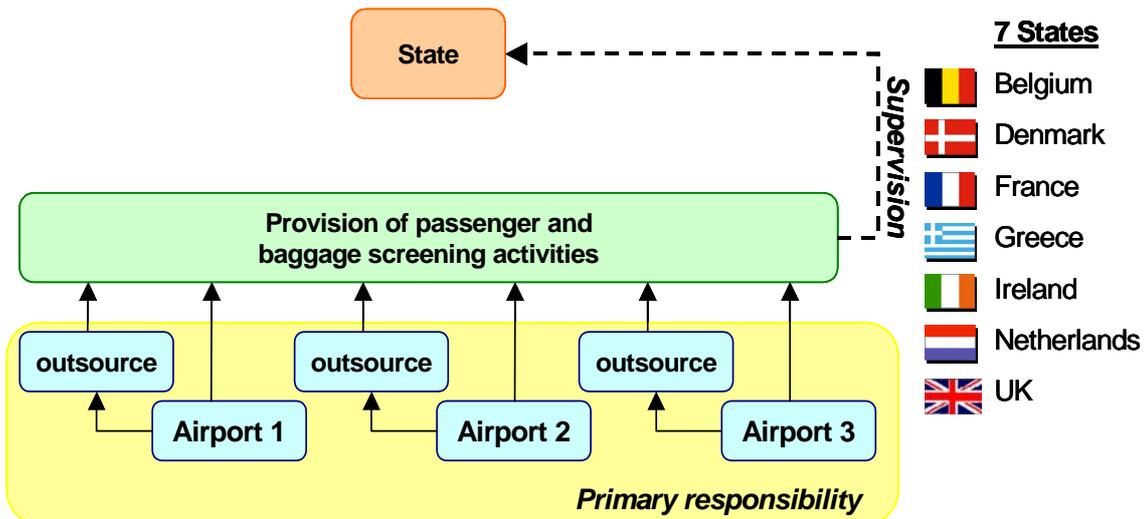
⁸ Note that prior to 1st April 2003, the Netherlands adopted a centralised approach to aviation security.

Centralised Model



Note: Situation at December 2003.
Source: Security questionnaires

Decentralised Model



Note: Situation at December 2003.
Source: Security questionnaires

6 Aviation security revenues and expenditure

6.1 Introduction

Based on the financial responses from stakeholders, it is estimated that the total security related expenditure in 2002 for all the stakeholders in the 18 States was between €2.5bn and €3.6bn.

This is made up of:

- State expenditure - €0.65bn.
- Airport expenditure - €1.32bn.
- Carrier expenditure - between €0.52bn and €1.66bn.

The range in carrier expenditure is driven by whether one-off costs associated with cockpit door modifications and, more importantly, increases in general insurance premiums are considered as security related expenditure.

Four main mechanisms are currently being used to fund aviation security activities within Europe:

- State aviation security taxes.
- Airport security charges.
- Carrier security surcharges or fees.
- State grants and subsidies.

Again based on the responses received, it is estimated that for all the stakeholders, the total security related funding in 2002 for the 18 States was around €2.0bn. This is made up of:

- State taxes - €0.59bn.
- Airport charges - €0.60bn.
- Carrier surcharges - €0.63bn.
- State grants - €0.13bn.

The level of security income generated by each stakeholder (i.e. States, airports and carriers) versus the level of security operating expenditure incurred was compared to produce a net operating result for each stakeholder.

The analysis is based on those stakeholders providing financial information as part of the study. It examines the net security related operating position achieved by stakeholders at a national, airport and carrier level. It estimates the aggregate level of security revenue and operational expenditure for each State. The results are then compared on a consolidated basis, taking into consideration any surplus or deficit generated by each stakeholder at each level.

The results are presented as follows:

- State and airports results.
- Carrier results.

Estimates for all State and airport stakeholders in the 18 States have been developed to produce a European wide view of the revenues and expenditure associated with the provision of aviation security.

An assessment is made of any competition issues emerging from the differing approaches to aviation security under the centralised and decentralised models. This includes assessment of the impact of security taxes and charges on average airfares in Europe.

Due to limited financial information received from the respondents, this analysis concentrates on financial year 2002 and is therefore a snapshot, however it provides a good basis for assessing the structure of future security funding in Europe.

6.2 State and airports results

Under this scenario, the estimated combined net position for both the States and all of the airports in the 18 States (i.e. not just the responding airports) is outlined. This includes a comparison of the level of security income versus expenditure under the centralised and decentralised models, as well as an outline of the consolidated results.

Estimations of security revenues and expenditure for all stakeholders across the 18 States were produced. These estimates were based on the average unit revenues and costs for the responding airports in each State. This approach could provide inaccurate results as any efficiencies or inefficiencies for responding airports in each of the States is applied to all of the airports in that State. However, the approach is deemed to be a good proxy for overall revenues and expenditure on the basis that the responding airports accounted for 56% of all airport traffic in the 18 States in 2002.

6.2.1 State results

Eight of the 18 States (representing 63% of European passenger traffic throughput) levy security related taxes. State taxes are normally levied on a per departing passengers basis.

The level of taxes varies widely across the 18 States:

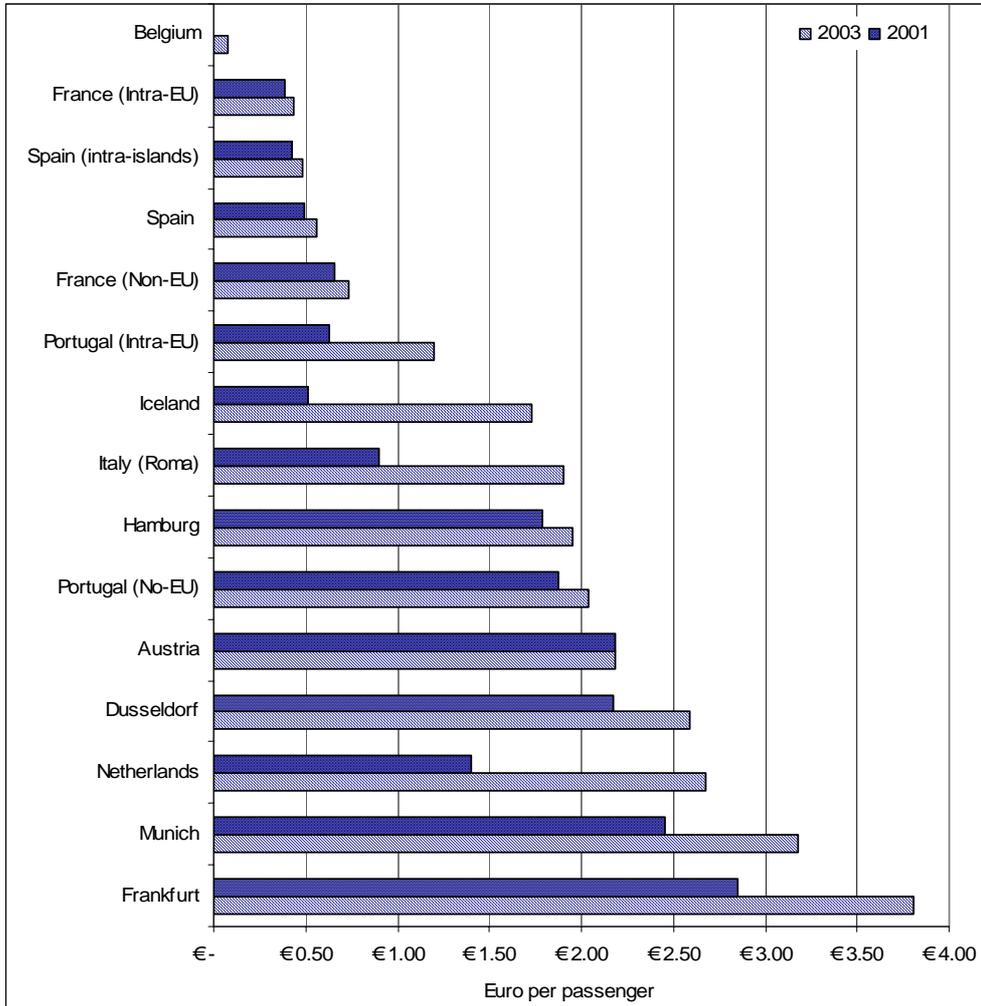
- From €0.08 to €5.00 per passenger.
- Average of €1.08 per passenger (€2.16 per departing passenger)

After 11 September 2001, many State security taxes increased to offset the additional expenditure incurred to implement improved security measures. A sample of State security taxes in 2003 compared to 2001 is illustrated below.

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Figure 2: Sample of security taxes (2001 and 2003)



Key: (*) Taxes were levied in the Netherlands up to 1st April 2003 when responsibility for security activities was taken over by the airports.

Note: the tax per passenger is derived by dividing the per departing passenger charge by 2.

Source: Security questionnaires and IATA Traffic Charges Manual.

In broad terms, the operating result for most States was neutral with security taxation income around the same level as expenditure.⁹

The overall State deficit is estimated at circa €69m based on total taxation revenues of €585m and expenditure of €654m. This represents a deficit of €0.12 per passenger.

The deficit for the States under each model varies, with the States under the centralised model recording a deficit of €0.16 per passenger compared to the decentralised model deficit of €0.01 per

⁹ For several States where no security expenditure data was provided, it was assumed that expenditure equates to the level of funding generated through security taxes.

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Summary

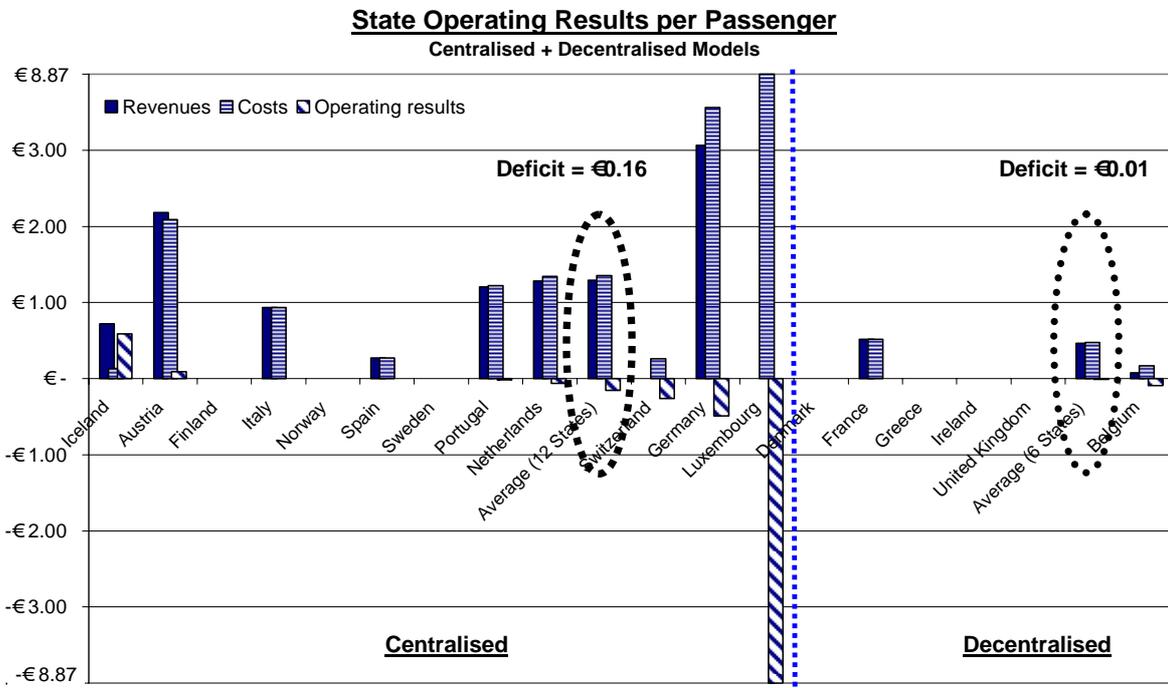
passenger. The lower deficit for decentralised model States reflects the reduced role taken by the States compared to those under the centralised model.

Figure 3: Combined State operating results (2002)

STATES	2002					
	State income (taxation)	State expenditure	State operating result	Average tax per passenger	Average State cost per pax	Average operating result
	€ m	€ m	€ m	€ per pax	€ per pax	€ per pax
Austria	34.1	32.7	1.4	2.18	2.09	0.09
Belgium	1.2	2.7	-1.5	0.08	0.17	-0.09
Denmark	0.0	0.0	0.0	0.00	0.00	0.00
Finland	0.0	0.0	0.0	0.00	0.00	0.00
France	62.0	62.0	0.0	0.51	0.51	0.00
Germany	287.1	333.1	-46.0	3.07	3.56	-0.49
Greece	0.0	0.0	0.0	0.00	0.00	0.00
Iceland	1.4	0.3	1.1	0.72	0.13	0.59
Ireland	0.0	0.0	0.0	0.00	0.00	0.00
Italy	82.3	82.3	0.0	0.94	0.94	0.00
Luxembourg	0.0	13.5	-13.5	0.00	8.87	-8.87
Netherlands	53.9	56.5	-2.6	1.28	1.35	-0.06
Norway	0.0	0.0	0.0	0.00	0.00	0.00
Portugal	24.7	25.0	-0.3	1.21	1.22	-0.02
Spain	38.5	38.5	0.0	0.27	0.27	0.00
Sweden	0.0	0.0	0.0	0.00	0.00	0.00
Switzerland	0.0	7.5	-7.5	0.00	0.26	-0.26
United Kingdom	0.0	0.0	0.0	0.00	0.00	0.00
Total	585.2	654.1	-68.9	1.08	1.14	-0.12
Centralised	522.0	589.4	-67.4	1.29	1.36	-0.16
Decentralised	63.2	64.7	-1.5	0.46	0.47	-0.01

Source: IAA/AviaSolutions estimates based on security questionnaires

Figure 4: Estimated State operating results per passenger (2002)



Source: IAA/AviaSolutions estimates based on security questionnaires

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In the centralised model, Iceland and Austria posted estimated security surpluses of €0.59 and €0.09 per passenger respectively. Switzerland, Germany and Luxembourg recorded funding deficits of €0.26, €0.49 and €8.87 per passenger respectively. Luxembourg¹⁰ and Switzerland do not currently levy any specific security related tax therefore the provision of security is being funded from general taxation.

Portugal, Belgium and the Netherlands recorded small deficits of €0.3m, €1.5m and €2.6m (€0.02, €0.09 and €0.06 per passenger respectively). In Portugal, a share of the taxation income is given over to the airports operator¹¹.

Although the Belgium national authorities are not involved in the provision of security activities, regional authorities are responsible for funding security activities at regional airports. It would appear that the taxation revenue generated from applying a small levy of €0.15 per departing passenger for all passengers in Belgium is not sufficient to offset the total security cost at regional airports. The extent of this funding gap is likely to be larger as security expenditure data was only available for one regional authority¹².

In Italy, security expenditure was assumed to be broadly in line with security taxation income. If security taxes are not set at a level to fully recover all security related expenditure, the resulting deficit would have to be funded by the State from general taxation revenues.

In general, States under the decentralised approach are not involved in the provision of security measures and therefore are not faced with security financing issues.

6.2.2 Airport results

Airports providing responses represent around 56% of airport throughputs for the 18 States and 53% of total European airport traffic.

From the responses providing financial information (representing 36 individual airports handling 43% of all traffic for the 18 States in 2002), total security related operational expenditure for the reporting airports was around €457m in 2000.

By 2001, this had risen by almost €116m to €573m (circa 25%). Most of this increase was a result of costs incurred during the final quarter of 2001 from measures introduced immediately after the 11 September terrorist attacks. During the same time period, traffic declined by 1.6% for all of the airports in the 18 States.

The full impact of the increase in security related costs became evident between 2001 and 2002 when a further increase of 30% was experienced to €743m for the reporting airports.

¹⁰ The CAA acts as regulator and airport operator in Luxembourg.

¹¹ The proportion of security tax shared with airport operator stands at 12.5%.

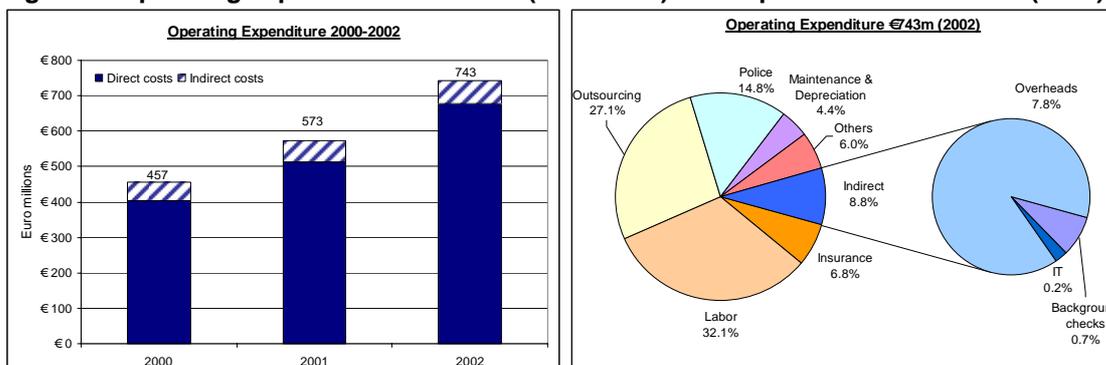
¹² Flemish region responsible of Antwerp and Ostend airports, no data was available for the Wallonie region responsible for Charleroi and Liege.

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Direct costs including labour, police, insurance, maintenance and depreciation accounted for the majority of costs in each of the 3 years examined. Indirect costs include allocation of overheads, IT and background checks on personnel.

Figure 5: Operating expenditure evolution (2000-2002) and expenditure breakdown (2002)



Source: IAA/AviaSolutions estimates based on security questionnaires

Labour (including direct labour and outsourcing) accounted for 59% of all costs in 2002. Outsourcing mainly comprises the provision of passenger, hand baggage and surveillance by a third party supplier. Police costs accounted for 15%. In several States, including Switzerland and the UK, police undertake certain key airport security activities such as terminal and airport surveillance.

Other operational costs including insurance, maintenance and depreciation represented 7% and 5% of total expenditure.

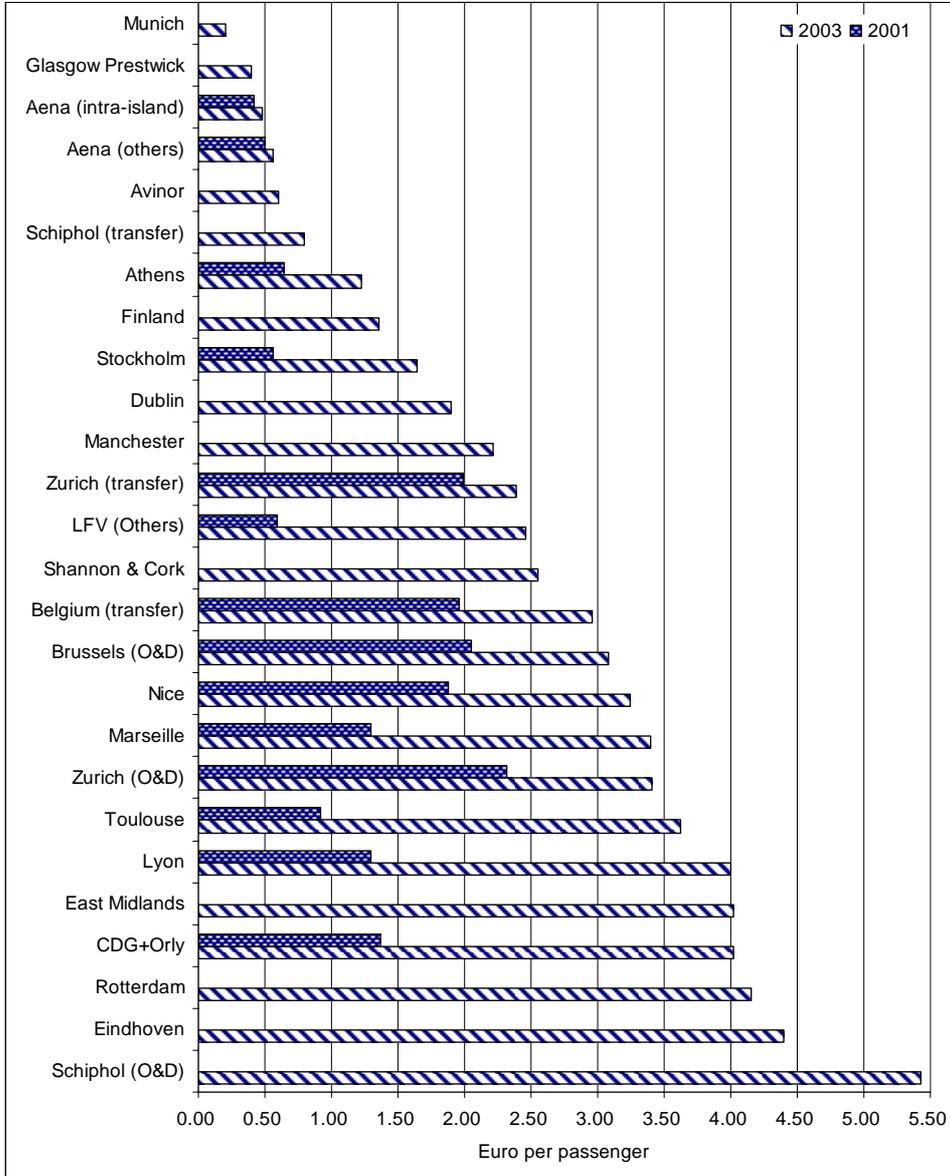
Airports across 12 European States reported levying security related charges. Charges are normally levied on a departing passenger basis and vary from airport to airport. Exceptions include:

- Spain where charges vary by destination.
- Finland, Spain¹³ and Sweden, where the same amount is charged, regardless of the departing airport¹⁴.

¹³ Spain is included again because whilst the charge varies by destination, the particular destination charge is constant at all airports.

¹⁴ Although the State security representatives advised the charges as airport charges, these could equally be considered as a State tax rather than a charge (as the same rate is applicable to all airports in the respective States). Additionally, airports are operated by a single authority that sets airport traffic charges on a network-wide rather than an individual airport basis.

Figure 6: Sample of airport security charges (2001 and 2003)



Note: the tax per passenger is derived by dividing the per departing passenger charge by 2.
 Source: Security questionnaires and IATA Traffic Charges Manual.

The level of airport charges varies widely amongst European airports, with 2003 charges ranging from €0.17 to €10.85 per departing passenger. Brussels, Amsterdam-Schiphol and Zurich airports (for operational and commercial reasons) have introduced a dual pricing structure that differentiates between originating and transferring passengers.

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Estimated security income in 2002 for all airports¹⁵ in the 18 States totalled circa €605m, with expenditure projected at €1.32bn (assuming responding airport unit cost averages for all airports within the same State). This represents an estimated funding gap of around €717m for European airports in 2002.

A large proportion of the deficits arise from Copenhagen and BAA airports (circa €320m) as they do not generate any direct security related income. When these airports are excluded, the deficit reduces to €397m. In the UK, BAA, the principal airport operator, does not currently levy specific security charges. The BAA funding gap of €300m in 2002 was financed from other airport activities. BAA's traffic charges for their London airports (Heathrow, Gatwick and Stansted) are subject to economic regulation under the 'single-till' approach. These airports accounted for around 85% of BAA's UK traffic in 2002. This means that any security related expenditure would be taken into consideration by the economic regulator when setting BAA's allowable traffic charges.¹⁶ As such, BAA is reimbursed (to some extent) for the cost of security through the allowed airport charges. This means that the size of the UK deficit is likely to be significantly overstated.

A similar regulatory approach is in place in Denmark and Ireland. However, the security charging position is more transparent in Ireland as Aer Rianta levies specific security charges within its overall regulatory charges cap.

The total airport expenditure is based on the average security cost reported by the responding airports in each State. Expenditure for Spanish airports is based on the overall weighted average cost per passenger for airports under the centralised model as Aena, the Spanish airports operator did not provide any security cost information.

Figure 7: Combined operating result for all airports (2002)

AIRPORTS	2002					
	Airport income (all airports) € m	Airport expenditure (all airports) € m	Airport operating result € m	Average charge per passenger € per pax	Average airport cost per pax € per pax	Average operating result (all airports) € per pax
Austria	0.0	0.0	0.0	0.00	0.00	0.00
Belgium	29.0	31.2	-2.3	1.80	1.94	-0.14
Denmark	0.0	22.9	-22.9	0.00	1.08	-1.08
Finland	0.0	7.2	-7.2	0.00	0.55	-0.55
France	166.8	246.5	-79.7	1.38	2.04	-0.66
Germany	6.2	52.1	-45.9	0.07	0.56	-0.49
Greece	7.7	19.7	-12.0	0.65	1.66	-1.01
Iceland	0.0	0.0	0.0	0.00	0.00	0.00
Ireland	36.7	34.3	2.4	1.87	1.74	0.12
Italy	110.6	134.4	-23.8	1.26	1.53	-0.27
Luxembourg	0.4	0.0	0.4	0.25	0.00	0.25
Netherlands	53.0	51.5	1.4	1.26	1.23	0.03
Norway	0.0	7.6	-7.6	0.00	0.25	-0.25
Portugal	3.0	5.8	-2.9	0.15	0.29	-0.14
Spain	38.5	144.4	-106.0	0.27	1.01	-0.74
Sweden	27.4	26.2	1.2	0.98	0.93	0.04
Switzerland	44.0	104.7	-60.6	1.53	3.63	-2.10
United Kingdom	81.6	432.9	-351.3	0.43	2.27	-1.84
Total	604.8	1321.5	-716.7	0.75	1.52	-0.83
Centralised	283.0	534.0	-250.9	0.64	1.10	-0.52
Decentralised	321.8	787.5	-465.7	0.90	2.07	-1.22

Source: IAA/AviaSolutions estimates based on security questionnaires

¹⁵ Includes 404 commercial airports in the 18 States with traffic throughputs above 5,000 passenger p.a. in 2002

¹⁶ BAA did not provide any information on the inputted security cost recovery element in the overall level of charges levied at their airports.

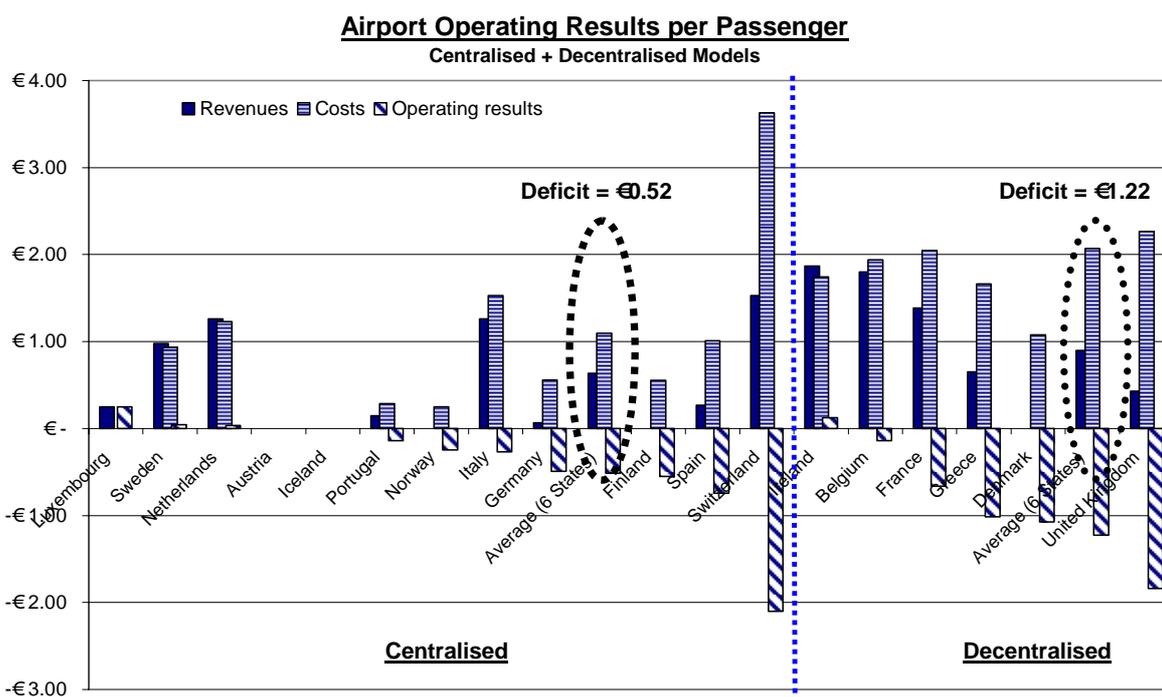
CIVIL AVIATION SECURITY FINANCING STUDY

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The overall airport funding gap equates to an average deficit of €0.83 per passenger across all European airports. It reduces to €0.46 when the Copenhagen and BAA airports are excluded from the estimates.

The total funding gaps for airports under the centralised and decentralised models were €251m and €466m respectively. The average deficits per passenger were very different at €0.52 and €1.22 for centralised and decentralised respectively.

Figure 8: Estimated operating results for all European airports (2002)



Source: IAA/AviaSolutions estimates based on security questionnaires

The results vary widely amongst States. Under the centralised model, Luxembourg, Swedish and Dutch airports in 2002 appear to have posted small security surpluses; with airports in 7 other States recording security deficits.

For airports in Portugal, Norway, Italy and Germany, the average deficit is below the centralised weighted average deficit (€0.52 per passenger); but for Finland, Spain¹⁷ and Switzerland the deficit is higher ranging from €0.55 in Finland up to €2.10 per passenger in Switzerland.

Under the decentralised model, only Irish airports appear to have recorded a nominal security surplus (average of €0.12 per passenger). This is primarily driven by Aer Rianta¹⁸ airports, although unlike other regulated airports, Aer Rianta has a separate security charge. It is important to note that whilst Aer Rianta recorded a small surplus in security activities during 2002, they also reported an overall under-recovery of €0.75 per passenger in relation to their maximum allowable charge per passenger (price cap). If Aer Rianta did not separate out charges for security related activities, they would be in a similar

¹⁷ In lieu of any security related expenditure for Spanish airports operated by Aena, the weighted average unit cost for other centralised airports was assumed as the cost input.

¹⁸ Aer Rianta is the operator of Dublin, Cork and Shannon airports.

position to BAA and Copenhagen with a theoretic security cost and no revenues resulting in an overall security deficit.

Airports in Belgium, Denmark, France, Greece and the UK recorded security deficits ranging from €0.14 to €1.84 per passenger for Belgian and UK airports respectively.

Average operating results vary more widely for airports under the decentralised model than for the centralised model. The average deficit for decentralised airports (€1.22 per passenger) is more than double the average deficit recorded by airports under the centralised model (€0.52 per passenger).

For some airports, the seemingly large operating deficit masks the underlying way in which security charges are levied. Many airports do not levy specific charges with the cost of security activities being recovered through other aeronautical charges. In the case of the airports (including BAA and Copenhagen) that are subject to economic regulation of airport charges, whilst there are no specific security charges, the maximum allowable charges takes into account all costs, including those related to security. Security related costs would therefore appear to be remunerated (to some extent) through other allowed airport charges.

A good illustration of this is that the Danish Ministry of Transport approved an increase of 10.1% to Copenhagen's passenger charge in April 2004 to offset increases in security related operational expenditure as a direct result of Regulation No. 2320/2002 implementation. This equates to a rise of €1.27 (DKK 9.49) per originating departing passenger over the 2003 published charges.¹⁹

Even though the introduction of specific security charges has become common practice for European airports, particularly after 11th September 2001, not all airports levy a specific security charge. From the projections, it would appear that European airports are not fully recovering the provision of security activities through specific charges. In these cases, airports are likely to be funding such gaps from other revenue sources (i.e. traffic charges, commercial activities or a combination of both).

6.2.3 Combined position: States plus airports

When the projections for income and costs across the 18 States are combined, the deficit was estimated to be around €786m in 2002 (State: €69m, Airport: €717m).

¹⁹ As outlined in Copenhagen Airport's Tariff Regulations for 2003-2005.

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Figure 9: Combined State and airport operating results (2002)

COMBINED POSITION		2002				
Combined States	State+airport income (all airports) € m	State+airport expenditure (all airports) € m	Overall operating result (all airports) € m	Weighted revenue per pax € per pax	Weighted cost per pax € per pax	Weighted operating result € per pax
Austria	34.1	32.7	1.4	2.18	2.09	0.09
Belgium	30.2	33.9	-3.7	1.87	2.11	-0.23
Denmark	0.0	22.9	-22.9	0.00	1.08	-1.08
Finland	0.0	7.2	-7.2	0.00	0.55	-0.55
France	228.8	308.5	-79.7	1.90	2.56	-0.66
Germany	293.3	385.2	-91.9	3.13	4.11	-0.98
Greece	7.7	19.7	-12.0	0.65	1.66	-1.01
Iceland	1.4	0.3	1.1	0.72	0.13	0.59
Ireland	36.7	34.3	2.4	1.87	1.74	0.12
Italy	192.9	216.7	-23.8	2.19	2.47	-0.27
Luxembourg	0.4	13.5	-13.1	0.25	8.87	-8.62
Netherlands	106.9	108.0	-1.2	2.55	2.57	-0.03
Norway	0.0	7.6	-7.6	0.00	0.25	-0.25
Portugal	27.7	30.8	-3.2	1.35	1.51	-0.16
Spain	77.0	182.9	-106.0	0.54	1.28	-0.74
Sweden	27.4	26.2	1.2	0.98	0.93	0.04
Switzerland	44.0	112.2	-68.1	1.53	3.89	-2.36
United Kingdom	81.6	432.9	-351.3	0.43	2.27	-1.84
Total	1190.0	1975.6	-785.5	1.45	2.23	-0.89
Centralised	805.0	1123.3	-318.3	1.74	2.22	-0.63
Decentralised	385.0	852.2	-467.2	1.07	2.24	-1.23

Source: IAA/AviaSolutions estimates based on security questionnaires

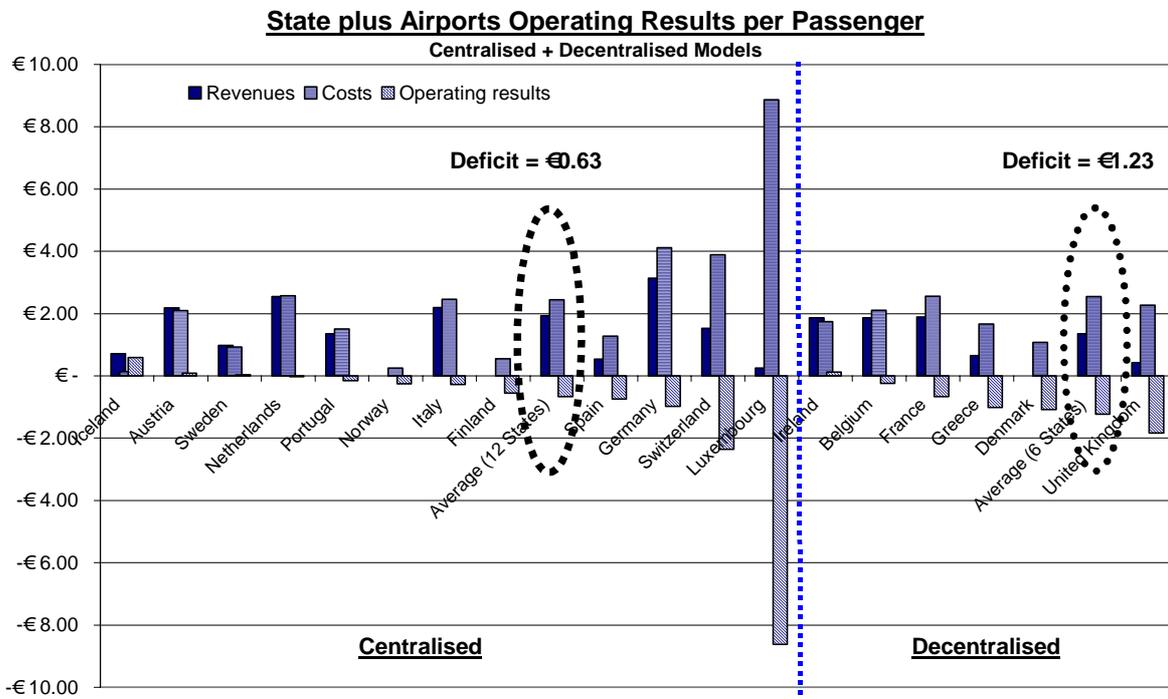
The average combined deficit equated to €0.89 per passenger, with the centralised model recording a deficit of €0.63 per passenger compared to €1.23 under the decentralised model.

The weighted average total expenditure per passenger is almost identical at €2.22 and €2.24 for the centralised and decentralised models respectively. The big variance is in revenues with an average of €1.74 per passenger in the centralised model versus €1.07 in the decentralised model, a 63% variation.

However, a proper recognition of security revenues for the large regulated airports under the decentralised model would considerably close the gap.

In absolute terms, the estimated funding deficits ranged between €318m and €467m under the centralised and decentralised models.

Figure 10: Combined State and airport operating results per passenger (2002)



Source: IAA/AviaSolutions estimates based on security questionnaires

6.3 Carrier results

The 19 carriers providing financial data accounted for around 231m passengers in 2002, representing 48% of carrier throughputs for the 18 States.

From the analysis of the responses received, it emerged that in 2002, not all carriers imposed specific security related surcharges. A large proportion of the carriers merely collected the State related taxes and airport charges levied by other stakeholders as pass through charges to passengers. As such, these carriers have been excluded from the analysis of carrier surcharge revenues.

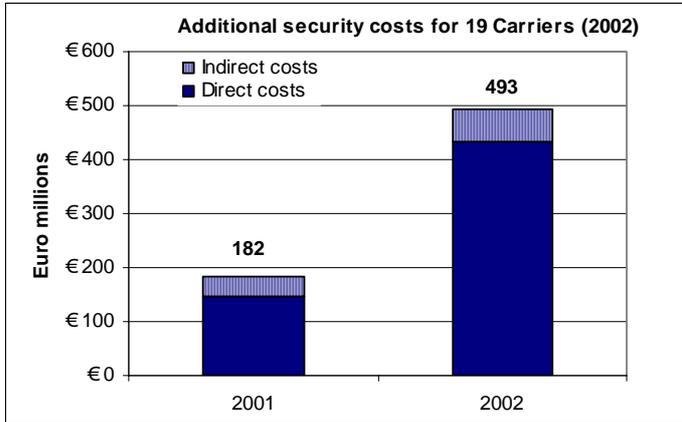
However, the majority of responding carriers reported an increase in security expenditure during 2002²⁰. This analysis is therefore divided into 2 areas. The first examines those carriers levying security related surcharges in 2002 and their net position after security expenditure is considered. The second area examines the total security expenditure for all reporting carriers, compared to the level of security surcharge related income achieved by carriers, in order to estimate the net funding surplus or deficit.

The responses from network or hub carriers (members of AEA) represent 65% of the total traffic for this segment. Air France was the only large European network carrier that did not provide any information. Alitalia and Iberia submitted responses to the carrier security questionnaire but did not provide any details of security related expenditure.

²⁰ As outlined in Section 4 of the main report, a number of carriers only provided incremental cost information for 2001 over 2000, and 2002 over 2001. Where full cost information has been provided, this has been included in the carrier expenditure estimates, otherwise the advised incremental costs have been used.

6.3.1 Carrier expenditure breakdown

Figure 11: Additional air carrier security costs (2002)



For the 19 carriers providing financial inputs, incremental or additional security expenditure totalled €182m in 2001 over 2000, mainly in the last quarter of 2001 as a direct result of 9/11.

The full financial impact of increased security requirements was more evident during 2002, when the same number of carriers recorded further incremental security costs of €493m in 2002 over 2001 - an increase of 2.7 times over the previous year, as the impact in 2001 had been incurred mainly in the last quarter. After 11 September 2001 and up to the

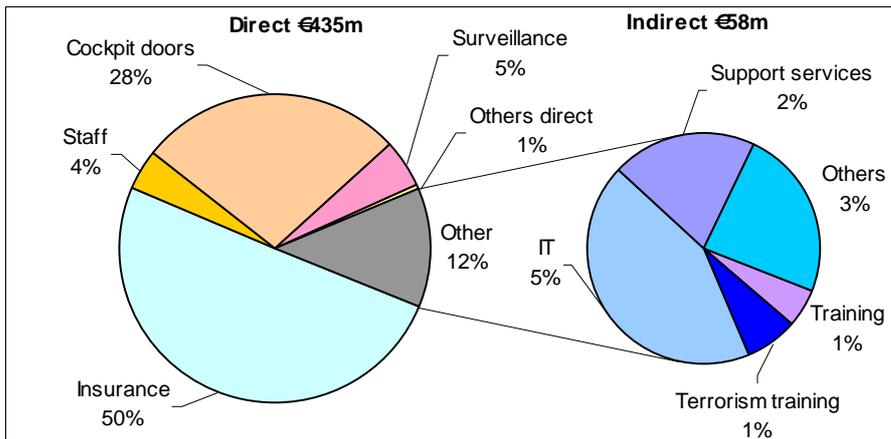
end of 2002, the sample of carriers reported combined additional costs of around €675m due to increased security requirements.

Direct costs, which include staff, cockpit door reinforcement, security training and insurance, accounted for 81% and 88% of incremental expenditure in 2001 and 2002 respectively. Insurance costs accounted for 46% and 50% of increased costs in 2001 and 2002.

Additional insurance premiums are the single largest expense item, accounting for 50% of the total additional cost in 2002. Reinforced cockpit doors accounted for a further 28%. However this was mainly a one off cost incurred in 2002 and is unlikely to be as significant in future years.

Other direct expenditure categories included incremental security staff and surveillance expenditure (9% of the additional expenditure).

Figure 12: Additional air carrier security expenditure breakdown (2002)



Source: IAA/AviaSolutions estimates based on security questionnaires

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Indirect costs include support services, training and IT. Within indirect costs, the top 2 areas of expenditure were IT and support services (ground handling, catering and aircraft cleaning), accounting for 5% and 2% respectively of the total additional expenditure.

6.3.2 Passenger charges

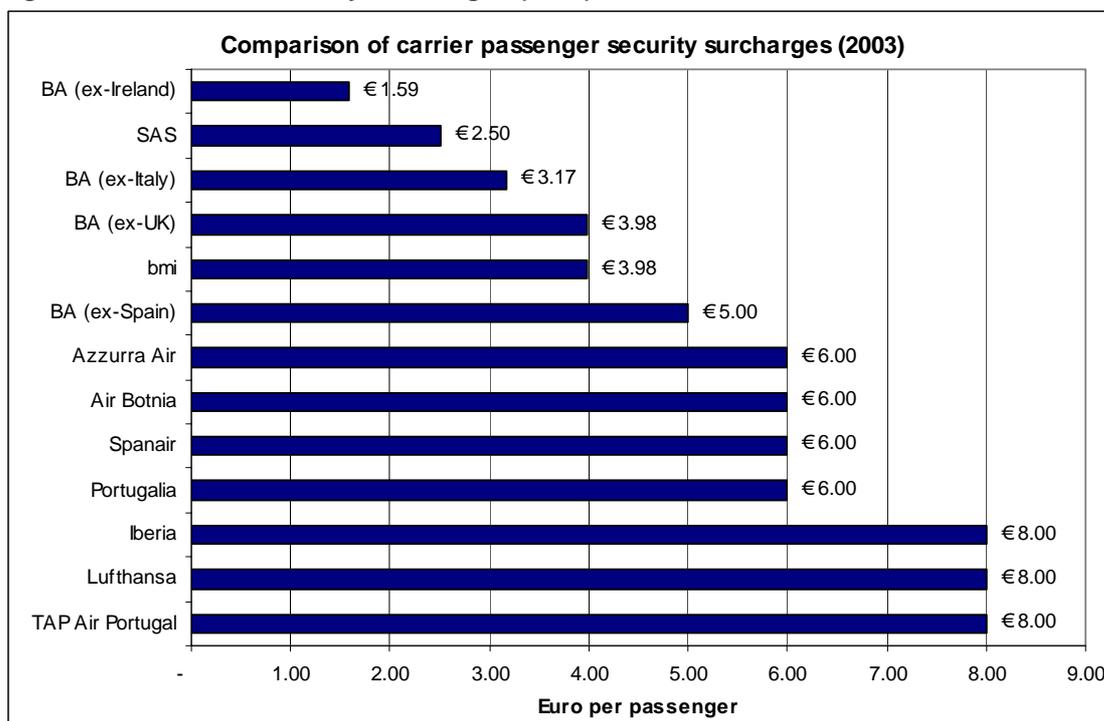
More than 124 carriers worldwide have introduced a passenger surcharges on flights since 11 September 2001. From 27 responses, 14 carriers confirmed that they currently impose security related surcharges. Seven apply both passenger and airfreight surcharges; 4 apply surcharges to passengers only, and 3 apply surcharges to freight only.

Carrier surcharges are aimed at recouping not only incremental security related costs, but also increases in insurance premium costs.

Carrier security surcharges are in the main levied on all passengers (or per segment flown) rather than on a departing passenger basis, as is the case for airport security charges.

All passengers, including children and infants (with a few exceptions) are liable to pay the carrier security related charge; while children normally pay only 50% of the State security taxes and airports security charges (infants are often exempt). Carrier related security surcharges range between €1.59 (or \$1.50 for British Airways ex-Ireland) and €8.00 (Iberia, Lufthansa and TAP) per passenger or segment flown.

Figure 13: Air carrier security surcharges (2003)



Source: Security questionnaires

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6.3.3 Freight related surcharges

Many carriers introduced a fuel surcharge on airfreight as a consequence of high jet fuel prices and the volatility in the oil crude market during the late 1990s. The average surcharge was about €0.15 (USD15¢) per kilo.

Freight security related surcharges are levied on a per kilo basis and range from €0.06 for SAS and Finnair (known shipper) to €0.15 per kilo by Lufthansa and Austrian Carriers.

Some carriers differentiate on whether the freight shipper is known or not (application of the new known shipper programme introduced in the Regulation).

It is common practice to set either a minimum and/or maximum charge. For example, British Airways applies a minimum charge equivalent to €14.31 while Finnair applies a maximum charge of €240.00 per airway bill (AWB).

6.3.4 Carriers reporting security related surcharge income

This analysis produces mixed results with carriers from Austria and Denmark incurring a net deficit (€38m and €46m respectively) while carriers from the other States reported a surplus ranging from €4.7m in Italy to €62m in Germany.

Overall, the carriers reporting security related surcharge income had an estimated operating surplus of €62m in 2002, which equates to €0.30 per passenger.

Figure 14: Estimated carriers operating results– carriers reporting security related income (2002)

State	2002						
	Airline income (surcharges)	Airline security expenditure	Airline security operating result	Airline traffic (respondees)	Average airline income (surcharges)	Average airline expenditure	Average operating result
	€ m	€ m	€ m	m pax	€ per pax	€ per pax	€ per pax
Austria	1.6	39.8	-38.15	9	0.19	4.60	-4.42
Denmark	68.3	113.8	-45.53	23	2.95	4.92	-1.97
Finland	7.3	1.2	6.05	8	0.95	0.16	0.79
Germany	253.0	191.3	61.63	54	4.72	3.57	1.15
Ireland	0.8	1.0	-0.26	6	0.12	0.16	-0.04
Italy	4.7	0.0	4.70	1	6.00	0.00	6.00
Portugal	50.8	43.5	7.26	6	8.01	6.87	1.15
Spain	40.0	19.2	20.81	35	1.15	0.55	0.60
United Kingdom	206.8	160.9	45.87	57	3.65	2.84	0.81
Total	633.2	571	62.38	198	3.20	2.73	0.30

Source: IAA/AviaSolutions estimates based on security questionnaires.

Note: The above table reflects the net position for only those carriers levying a separate security related surcharge during 2002.

6.3.5 All responding carriers

When the security costs for all responding carriers are included, a different picture emerges. When the passenger throughputs from these additional carriers are taken into consideration, the traffic for responding carriers increases from 198m to 231m passengers in 2002.

Assuming the same level of revenue (as the additional carriers did not advise any additional security income), the weighted average revenue remains the same at €3.20 per passenger.

When the responses from all carriers providing security related costs are taken into consideration, the responding carriers reported a funding gap of €44m in 2002, a deficit of €0.19 per passenger.

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Summary

The operating results for the responding carriers were mixed. Carriers in Germany, the UK and Spain achieved operating security surpluses of €62m, €46m and €21m respectively. Carriers in Austria, Denmark, the Netherlands and Switzerland reported deficits of €38m, €46m, €92m and €12m respectively.

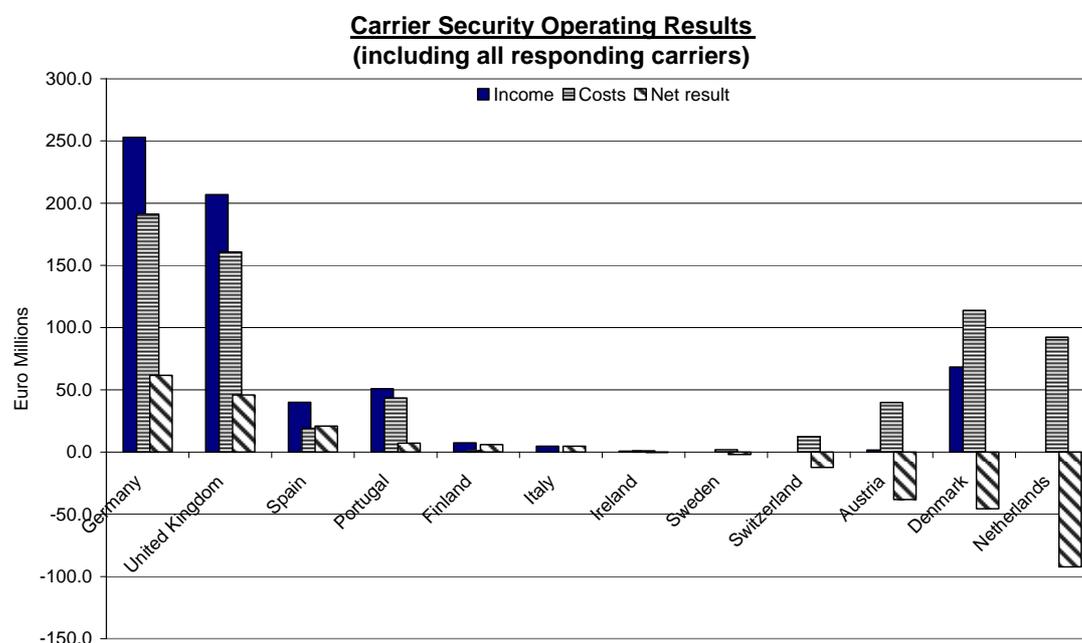
Figure 15: Estimated carrier operating result (2002) – all carriers

2002							
State	Airline income (surcharges) € m	Airline security expenditure € m	Airline security operating result € m	Airline traffic (respondees) m pax	Average airline income (surcharges) € per pax	Average airline expenditure € per pax	Average operating result € per pax
Austria	1.6	39.8	-38.2	9	0.19	4.60	-4.42
Denmark	68.3	113.8	-45.5	23	2.95	4.92	-1.97
Finland	7.3	1.2	6.1	8	0.95	0.16	0.79
Germany	253.0	191.3	61.6	54	4.72	3.57	1.15
Ireland	0.8	1.0	-0.3	6	0.12	0.16	-0.04
Italy	4.7	0.0	4.7	1	6.00	0.00	6.00
Netherlands	0.0	92.3	-92.3	20	0.00	4.62	-4.62
Portugal	50.8	43.5	7.3	6	8.01	6.87	1.15
Spain	40.0	19.2	20.8	35	1.15	0.55	0.60
Sweden	0.0	1.9	-1.9	1	0.00	1.75	-1.75
Switzerland	0.0	12.3	-12.3	12	0.00	1.06	-1.06
United Kingdom	206.8	160.9	45.9	57	3.65	2.84	0.81
Total	633.2	677.4	-44.2	231	3.20	2.94	-0.19

Source: IAA/AviaSolutions estimates based on security questionnaires

Note: Carriers from Netherlands, Sweden and Switzerland reported security expenditure but no security related surcharge income in 2002.

Figure 16: Estimated carrier security operating results (2002)



Source: IAA/AviaSolutions estimates based on security questionnaires

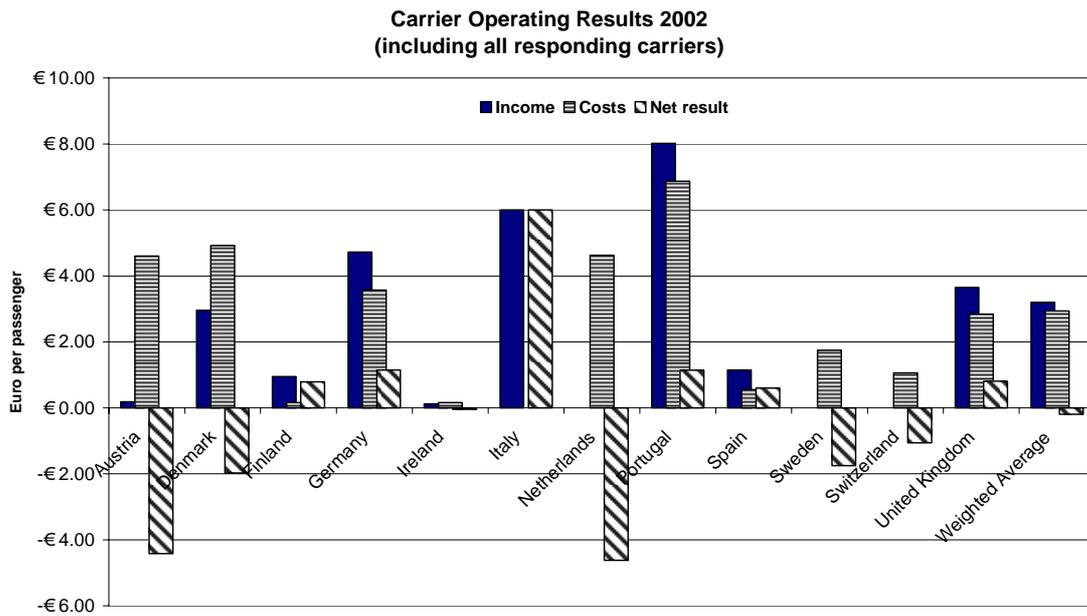
Carriers in the other States (i.e. Portugal, Finland, Italy, Ireland and Sweden) would appear to be achieving a neutral result with surpluses below €7.5m or small deficits of less than €2m.

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Summary

Whilst some of these results are significant in order of magnitude, it helps to put them into context when they are expressed on a per passenger basis. The German and Portuguese carriers achieved surpluses averaging €1.15 per passenger, while Dutch and Austrian carriers reported the largest deficits of €4.62 and €4.42 per passenger in 2002. The response from a single Italian carrier with relatively small throughput included revenues but no costs resulting in the highest per passenger net result of €6.00.

Figure 17: Estimated carriers operating results – per passenger (2002)



Source: IAA/AviaSolutions estimates based on security questionnaires

6.3.6 Carrier expenditure conclusions

Analysis of incremental unit costs for the 19 responding carriers serves as a good representative sample for estimating the total incremental cost for European carriers as a whole.

These estimations help to understand the financial impact of incremental security measures on European carriers since 11 September 2001.

The figure below provides an estimate, based on the large representative sample of responding carriers, of the costs for carriers based in the 18 States for the following:

- Total incremental security related costs.
- Incremental security related costs excluding cockpit doors.
- Incremental security related costs excluding insurance.
- Incremental on-going security related costs excluding cockpit doors and insurance.

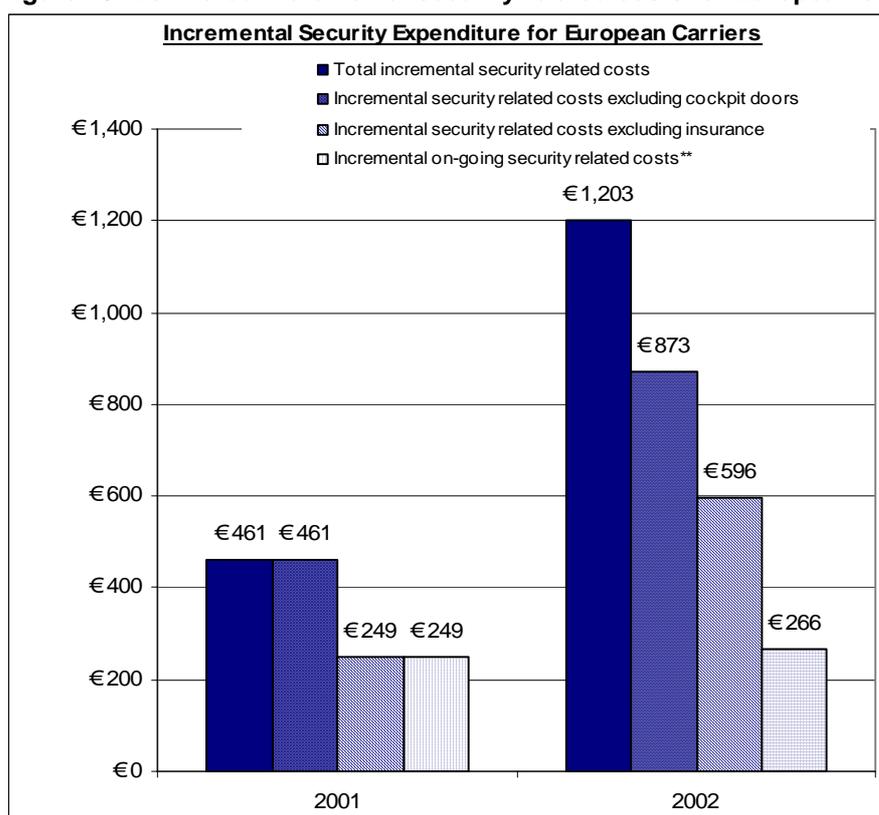
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Summary

Many carriers provided expenditure information on an incremental or additional basis for 2002 over 2001. Some also provided information of additional expenditure in 2001 over 2000. Where both sets of additional cost information have been provided, the total costs in 2002 are assumed to be the sum of the additional costs in both 2001 and 2002.

The following figure illustrates the estimated components of incremental security related expenditure for European carriers in 2001 and 2002.

Figure 18: Estimated incremental security related costs for European carriers (2001 and 2002)



Key: (**) Incremental on-going security related costs excluding cockpit doors and insurance
 Source: IAA/AviaSolutions estimates based on security questionnaires

In 2002 compared to 2000, it is estimated that all carriers in the 18 States incurred additional year on year security related expenditure (including insurance and cockpit doors) of over €1,664m (€1,203 + €461m). This is based on estimated carrier additional expenditure in 2002 over 2001 of €1,203, and an additional €461m of expenditure in 2001 over 2000.

When capital expenditure items such as reinforced cockpit doors are excluded, the incremental operational security related expenditure is estimated to be circa €1,334m (€461m + €873m) in 2002 over 2000.

Similarly, if incremental insurance costs are excluded but cockpit doors investments included, the incremental operational expenditure of on-going security related measures in 2002 totals €845m (€249m + €596m). When both cockpit doors and insurance are excluded, the estimated incremental on-going security cost was €515m (€249m + €266) for 2002 over 2000 respectively.

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Summary

On the basis that the identified airlines levying surcharges are the only carriers in Europe to do so, the €633m is considered a good estimate of total carrier security revenues for 2002.

The estimated range in expenditure from €515m when cockpit doors and insurance are excluded, to €1,664m when these are included would produce an airline operating result range of between a surplus of €118m and a deficit of €1,031m in 2002.

The European airline industry had one of the most challenging years in its history in 2002. Significant financial losses were incurred following the aftermath of 11th September 2001. Those carriers incurring additional security costs without generating income from security surcharges were particularly affected.

The additional costs of modifications to cockpit doors and increased insurance premiums have had a significant impact on individual carrier profitability.

When surcharges income is taken into account, the net impact of security related costs would appear to have been minimal for a number of carriers levying surcharges. The results vary by carrier, especially if a particular carrier did not levy surcharges. Other factors including reductions in passenger numbers, reduced yield, and the collapse of premium business traffic also contributed to the negative financial performance of many European carriers in 2001 and 2002.

6.3.7 Carriers security operating results versus overall financial performance

For a selection of carriers, the reported aviation security operating position was compared with available financial results to examine the relationship between carrier profitability and the levying of surcharges²¹.

During 2002, from the available sample, 8 carriers reported a total operating profit from operations and 4 recorded an operating loss. When compared to their respective security operating results, 7 of the 8 profitable carriers reported that they levied security surcharges during 2002. For the 4 unprofitable carriers, 2 levied surcharges and 2 did not.

²¹ 19 carriers reported aviation security financial data. Information regarding the total operating performance of 12 of these carriers was available, and provided the source for this analysis

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Summary

Figure 19: Comparison of air carrier financial results versus security net position (2002)

Carriers Reporting Aviation Security data and Total Operating Results data available (Year 2002)	Sample of Carriers	Passenger Surcharge Only	Freight Surcharge Only	Passenger + Freight Surcharges
AvSec Operating Loss + Total Operating Loss	4			
Carriers with Charges	2	0	0	2
Carriers without Charges	2	0	0	0
AvSec Operating Profit + Total Operating Profit	7			
Carriers with Charges	7	3	2	2
Carriers without Charges	0	0	0	0
AvSec Operating Loss + Total Operating Profit	1			
Carriers with Charges	1	0	1	0
Carriers without Charges	0	0	0	0

Source: IAA/AviaSolutions estimates based on security questionnaires and carrier financial reports

It would appear that carriers posting operating losses in 2002 were to some extent impacted by their negative position from the financing of additional security costs.

On the other hand, it would also appear that those carriers posting operating profits during the same period also recorded a surplus from surcharge revenues financing security related expenditure in 2002.

6.4 State security related grants and subsidies

All States advised that additional security measures had been introduced after 11 September 2001. Thirteen States confirmed that some of these measures had been partially or fully financed from public funds. The security measures being publicly funded vary across the 13 States.

In several States, Governments are funding the provision of key security measures such as:

- Passenger and baggage screening at regional airports (Belgium and Greece).
- Additional security measures being imposed (Germany).

For the States where funding details were provided, public funding for security related measures between 2001 and 2002 totalled around €132m.

From the responses submitted, 4 States (Greece, Iceland, Italy and Norway) were expecting to publicly fund further security measures during 2003. Additional funding is mainly related to the introduction of 100% hold baggage screening across European airports in 2003.

Security related funding for 3 of these States (Iceland, Italy and Norway) is estimated at €190m with the largest forecast expenditure reported by Italy for the acquisition of hold baggage screening equipment at a cost of €180m.

6.5 Summary of results

This section has examined the revenues, expenditure and net operating results for the responding stakeholders as well as estimates for all of the stakeholders in the 18 States in 2002. The estimated security related revenues totalled €1.8bn (€585m + €605m + €633m) when all stakeholders were included. (Note that State grants have been excluded from the passenger related estimations).

The estimates for total expenditure provide a range between €2.5bn (€654m + €1,322m + €515m) and €3.6bn (€654m + €1,322m + €1,664m) depending on whether cockpit door modifications and insurance are included in the carrier estimates.

For the airports, the large operating deficit (€717m) masks the underlying way in which security charges are levied. Many airports do not levy specific charges with the cost of security activities remunerated through other airport charges. In the case of the airports (including BAA and Copenhagen) that are subject to economic regulation of airport charges, whilst there are no specific security charges, the allowed charges take into account all expenditure, including that related to security. As such, security related costs are, in practice, remunerated (to some extent) by other allowed airport charges.

When the large deficit incurred by BAA and Copenhagen is excluded from the total airport net deficit, the airports' deficit reduces from €717m to €397m.

The airports in the centralised model States reported a combined deficit of €251m or €0.52 per passenger compared to the decentralised model with a deficit of €466m or €1.22 per passenger, more than double the centralised average. This gap would reduce considerably if a realistic estimation of regulated airports' security income was included.

Due to the inherent differences in the way in which aviation security is organised and financed across the 18 States, there are inevitably going to be variations in the results at a State level.

Analysis of the State and airport net operating results on a per passenger basis indicates that 3 of the 12 States under the centralised model achieved small surpluses in 2002.

States and airports under the decentralised model saw 5 of the 6 States reporting deficits for 2002. For 2 States (Belgium and France), the deficit was less than €1.00 per passenger. However, for Denmark, Greece and the UK, this deficit was significantly higher ranging from €1.01 to €1.84 per passenger. Ireland was the only decentralised State that reported a small surplus of €0.12 per passenger; however, this was in the context of under recovery of €0.75 per passenger compared to the allowable regulatory price cap.

As noted previously, the responding airports within both Denmark and the UK do not levy any specific security related charges and, as such, the cost of security provision is funded from other revenue sources under their economic regulation mechanisms. It could therefore be considered that these airports do recover the cost of security related activities (to some extent) from other available charges. More recently, the Danish Ministry of Transport authorised in April 2004 a rise of 10.1% to Copenhagen airport's passenger service charges in order to offset increases in security related expenditure²².

Aer Rianta in Ireland has been the most transparent of the regulated airports in the study in that separate security charges are published even though all charges are subject to a regulatory charging cap per passenger.

²² Based on 2004 Copenhagen Airport's Traffic Charges, this equates to around €1.27 (DKK 9.49) per departing passenger.

On the basis of the analysis in this section, it would indicate that it is the passengers through State taxes, airport security charges or through airport regulatory pricing arrangements that broadly fund the majority of security related costs for States and airports. Airports reported an estimated €717m operating deficit in 2002 which reduces to €397m when the large regulated airports are excluded.

For the carriers, if the costs of cockpit door modification and insurance premium increases are excluded, the income generated from security related surcharges is estimated to broadly offset the costs advised for those carriers levying security surcharges. When non-recurring cockpit door expenditure is included, as well as the increased insurance premiums, the total deficit for European carriers is estimated at circa €1.0bn in 2002.

However, the expenditure on cockpit door modification was mostly completed in 2002 according to the carrier responses, and these costs of circa €330m are generally considered to be non-recurring.

6.6 Assessment of competition issues

To assess the potential impact of any competitive implications of the respective approaches to the financing of aviation security, a number of funding aspects have been examined:

- Do specific State aviation security taxes and airport security charges meet the costs of aviation security?
- What is the level of funding from the general taxpayer in each State?
- What is the balance of funding between the passenger and the general taxpayer in each State?

To carry out this analysis, the funding position in each of the States is outlined and the size of any State funded deficits highlighted.

The proportion of total European revenue generated, and expenditure incurred, in each State relative to the proportion of total European traffic in that State is then examined to determine if there are any correlations.

Finally, the impact of aviation security charges on potentially suppressing demand is examined. This leads to analysis of the relative proportion of security taxes and charges to fares levels for a sample of intra European, long haul and domestic/no frills carrier routes.

6.6.1 Taxes and charges competition issues

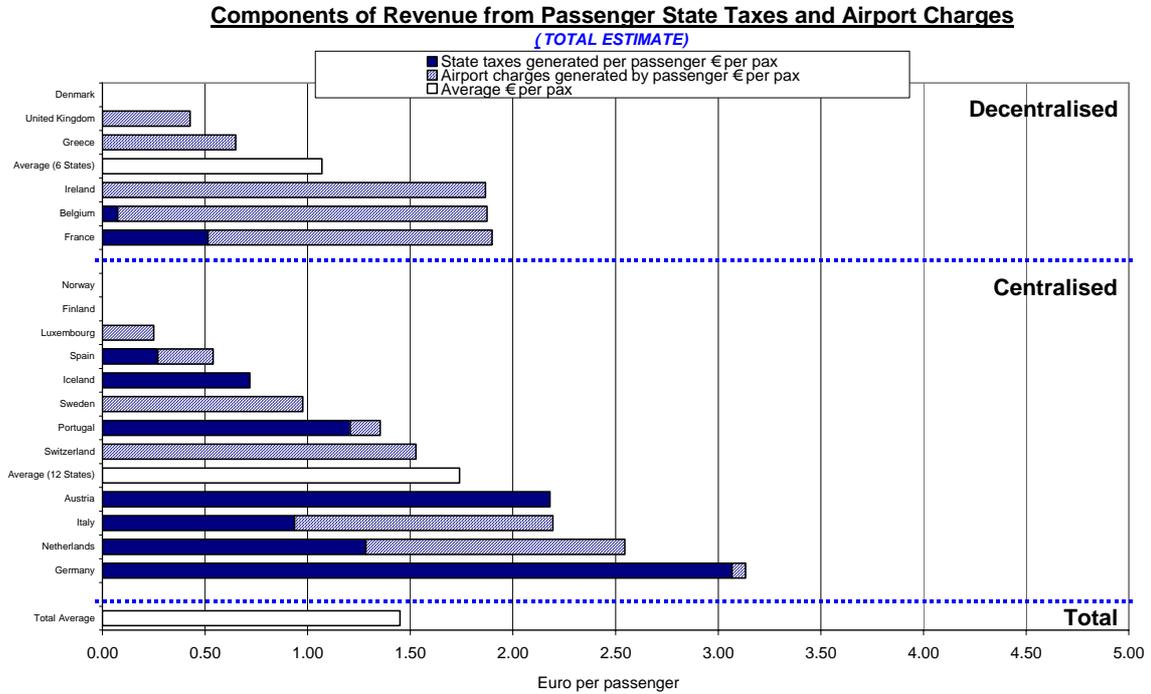
The following figures provide the basis for assessment of competition issues relating to the funding of security by the States and airports under the centralised and decentralised models.

The estimated State and airport revenues from taxes and charges on a per passenger basis are outlined followed by the estimated expenditure by the State and airports on security related activities. Finally the State and airports operating results are outlined where the revenues from taxes and charges have been deducted from the estimated unit costs for both the States and airports.

CIVIL AVIATION SECURITY FINANCING STUDY

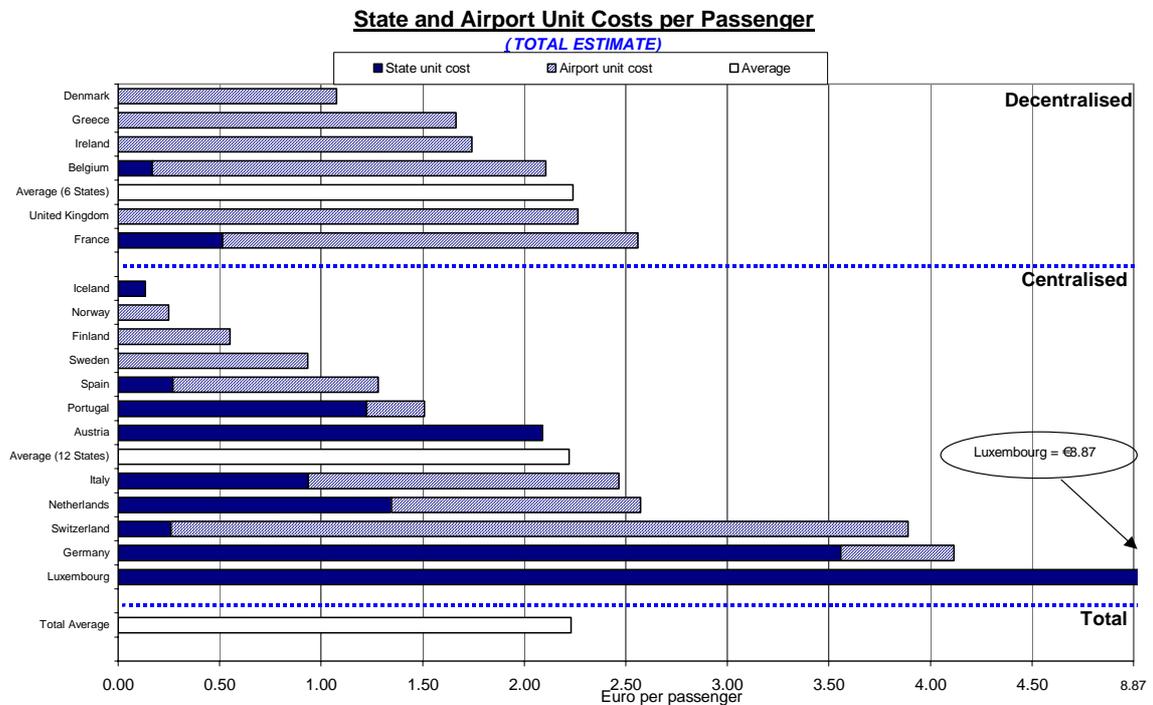
Summary

Figure 20: Estimated State and airport revenues (2002)



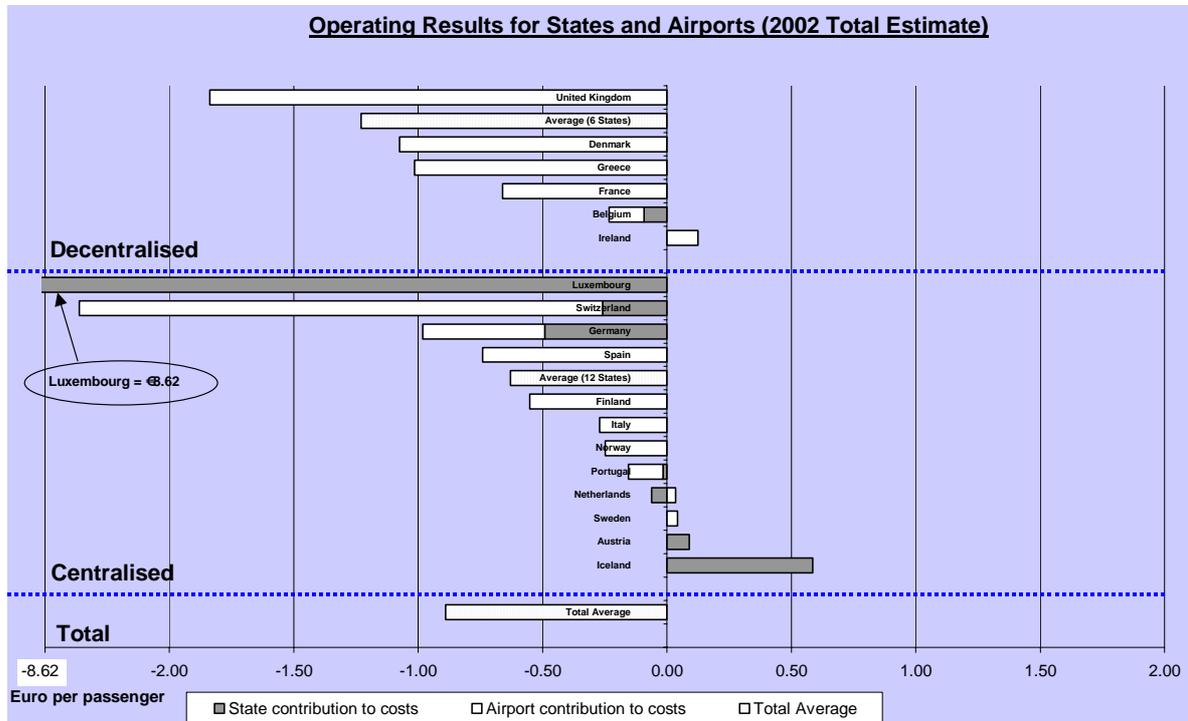
Source: IAA/AviaSolutions estimates based on security questionnaires

Figure 21: Estimated State and airport expenditure (2002)



Source: IAA/AviaSolutions estimates based on security questionnaires

Figure 22: Estimated State and airport operating results (2002)



Source: IAA/AviaSolutions estimates based on security questionnaires

6.6.1.1 Centralised States

For the centralised States, the majority of security related revenue in 2002 (65%) was derived from passengers by way of State security taxes. No State taxes were levied in 5 of the 12 centralised States (Norway, Luxembourg, Finland, Sweden and Switzerland). The remaining 35% was derived from passengers by way of airport charges.

Finland and Norway were the only States not to levy specific security State taxes or airport charges in 2002. However the Finish CAA introduced a new security charge of €1.36²³ per passenger across all airports in 2003. Similarly, Avinor (the Norwegian airports company), raised its passenger service charge by €1.21 per departing passenger in 2003 to fund additional costs associated with airport security. Subsequently, it introduced a new security charge of €2.56 per passenger²⁴ from June 2004.

To be consistent with BAA and Copenhagen who also do not levy specific security charges, revenues for Finland and Norway have not been included in the estimations.

In 7 of the other States, income from State taxes made up the majority of security funding. No specific taxes were levied in Spain but the State received 50% of the airport charges as a contribution towards State funded security expenditure.

²³ The Finish CAA introduced the security charge on 1st January 2003 of €2.71 per departing passenger.

²⁴ Avinor introduced the security charge on 1st June 2004 of NOK 42 or €5.11 per departing passenger.

CIVIL AVIATION SECURITY FINANCING STUDY

Summary

In Austria, Italy, and Portugal, a proportion of the State tax revenues are shared with the airports to help fund security related activities.

Airports in 5 of the 12 States (Luxembourg, Sweden, Switzerland, Germany and the Netherlands) levied specific security charges.

Passengers in 6 of the 10 States levying security taxes and/or airport charges paid less than €2.00 each in security related taxes and charges. Passengers in Austria, Italy and the Netherlands paid €2.18, €2.19 and €2.55 each in charges and taxes, with passengers in the Germany paying the highest (€3.13) in the 18 States.

Security related expenditure at the airports was primarily financed by the passengers from State taxes and airport charges.

Six of the 12 States under the centralised model had expenditure per passenger of less than circa €1.50 in 2002. Austria was around €2.00 and Italy and the Netherlands close to €2.50; while Germany and Switzerland were around €4.00 per passenger. Luxembourg was the outlier with reported costs of €8.87 per passenger.

At the operating level, the results clearly show that the airports bear the majority of any deficits (with the exception of Luxembourg) with 9 of the 12 States reporting operating losses. This is driven by the working assumption that in the absence of information to the contrary, State taxes were set at a level to recoup any State expenditure incurred. The majority of any deficit or surplus would therefore be the responsibility of the airports in the centralised States.

Luxembourg and Switzerland recorded the largest deficits of €8.62 and €2.36 per passenger respectively, based on the information provided. In Luxembourg, the entire deficit would have to be funded from general taxes. In Switzerland, Germany, the Netherlands and Portugal, a proportion of the deficit was funded from general taxes. In a further 4 States (Spain, Finland, Italy and Norway), airports were responsible for all of the deficits recorded. In 3 States (Austria, Iceland and Sweden), the estimated levels of charges and expenditure would appear to provide an operating surplus. The surplus ranged from €0.04 in Sweden to €0.59 in Iceland.

The overall operating results for the centralised States indicate a €0.63 deficit per passenger.

It can be concluded that in the centralised States, the passenger is the main funder of security through State taxes and airport charges. In 7 of the States, the airports fund the operating deficit. In 5 of the States, some of the operating deficit would have to be funded from general taxes (including the entire deficit for Luxembourg).

6.6.1.2 Decentralised States

For the decentralised States, the majority of income in 2002 (92%) was derived from passengers by way of airport security charges. The States did not levy any taxes in 4 of the 6 States. In Belgium there was a nominal tax (€0.15 per departing passenger) and in France, a proportion (estimated at 22%) of the Civil Aviation Tax (CAT) goes to fund security related activities.

With the exception of Denmark, 5 of the 6 States levied security charges. In the UK and Denmark, the principal airport operators (BAA and CPH) do not levy specific security charges. Both operators are subject to economic regulation (the 3 London airports – Heathrow, Gatwick and Stansted, as well as Copenhagen) where the allowable overall aeronautical charges take account (to some extent) of the costs related to security provision. For BAA's other 4 UK airports, security costs are remunerated through general aeronautical charges. Other airports in the UK levied specific security charges in 2002.

CIVIL AVIATION SECURITY FINANCING STUDY

Summary

Denmark confirmed that no specific State taxes or airport charges were levied to recoup the cost of security. However, the Danish Ministry of Transport recently confirmed that an increase in passenger service charges was authorised to offset increasing security costs.

Excluding Denmark where there is no specific tax or charge, the total from taxes and charges in 5 of the 6 States was less than €2.00 per passenger. For Belgium, France and Ireland, the estimated average revenue was between €1.87 and €1.90 per passenger.

Security related expenditure at the airports was primarily financed by passengers via security charges. There was no State reported expenditure apart from Belgium and France. The other States confirmed that they did not participate in any aspect of security financing.

The position in Belgium is likely to be understated, as the expenditure information from the regional airports was incomplete. As such there is likely to be some further aspect of State funding of security activities at regional airports in Belgium.

Five of the 6 States under the decentralised model have per passenger security expenditure of less than €2.50. France is the exception with estimated expenditure of just over €2.50.

At the operating level, the results clearly show that the airports bear the majority of the deficits with 5 of the 6 States (Ireland was the exception with a small surplus) reporting operating losses. Only Belgium had an element of State funded deficit on the assumption that the deficit was funded from general taxation. It is also likely that the State position in Belgium is understated with not all State expenditure at the regional airports included in the estimates.

The UK recorded the largest operating deficits of almost €2.00, with deficits of just over €1.00 per passenger for Greece²⁵ and Denmark, based on the information provided. The majority of the deficit in the UK and Denmark could be considered to be included in the regulatory price cap set for the major airports in each State. Under this scenario, the overall level of deficit in the UK and Denmark would reduce by up to €320m. As such, in both States it could be argued that the passengers cover the majority of the cost of security at the major airports.

The situation in Greece is less clear in that the Hellenic CAA did not provide any information on the proportion of the Airport Development Tax raised that is used to finance security at regional airports. Athens airport provided charges revenue and expenditure information that shows an operating deficit at the airport.

In Ireland, the estimated levels of charges and expenditure would appear to provide a small operating surplus. Aer Rianta operates under a similar regulatory structure as the large UK airports but a specific security charge is levied. However, all airport charges (including security) cannot exceed the allowable per passenger total charges cap at each airport (Dublin, Shannon and Cork). As a result, the security charges revenues may be overstated as a proportion of the overall allowable charge per passenger.

In France, the levying of security charges was widespread across airports. Combined with the contribution from the French Civil Aviation tax, the total weighted average passenger charge of €1.90 was the highest for the decentralised States in 2002. It also should be noted that Aéroports de Paris, the largest French operator significantly increased security charges in 2003 having reported an operating deficit from the provision of security in 2002. France also had the highest estimated expenditure per passenger in 2002 of all the decentralised States.

²⁵ Greece refers to Athens International Airport primarily

CIVIL AVIATION SECURITY FINANCING STUDY

Summary

The overall operating results for the decentralised States indicate that of the €1.23 deficit per passenger, the State contribution was negligible at €0.01 with the airports funding €1.22 per passenger.

With the exception of Belgium with an estimated State deficit of €0.09 per passenger, no other State under the decentralised model reported a deficit that would have to be funded from general taxation income.

It can be concluded that in the decentralised States, the passenger is the main funder of security through airport charges. Airports funded the operating deficit in 5 of the 6 States. However, the true position in the UK and Denmark is likely to be closer to a neutral funding position given the regulatory structure of the major airports.

Ireland was the only State to have a small operating surplus based on the information provided. However, it is likely that the security charge related revenues may be overstated as a proportion of the allowable charge cap.

6.6.1.3 Taxes and charges competitive issues conclusions

- Three States (Denmark, Finland and Norway) did not report levying any security related taxes and/or airport charges during 2002.
- In 11 of the 15 States where security related taxes and/or airport charges were levied in 2002 the total revenue generated from State taxes and charges was relatively consistent with total burden on the passenger of under €2.00.
- Of these 11 States, 6 had taxes and charges ranging up to €1.00 (Greece, Iceland, Luxembourg, Spain, Sweden and the UK); 2 ranged from €1.00 to €1.50 (Portugal and Switzerland); 3 ranged from €1.50 to €2.00 (Belgium, France and Ireland).
- By contrast, 4 States (Austria, Germany, Italy and the Netherlands) had estimated passenger burdens ranging from €2.18 to €3.13.
- There was no clear distinction in the levels of revenue generated per passenger under either of the models with 5 of the decentralised model States charging passengers a total of less than €2.00 compared to 6 States in the centralised model. The 4 highest charging States were all in the centralised model.
- Passengers in the 4 highest charging States were paying considerably more in specific security related State taxes and airport charges than passengers in the other States.
- The actual passenger charges related to security may also be contained in general aeronautical charges at a number of airports, including those large regulated airports in Denmark and the UK. This lack of transparent application of security charges distorts the overall understanding of the revenues actually generated to fund security at airports across Europe.
- The expenditure per passenger on security related activities provided by the stakeholders ranged from less than €1.00 in 4 States (Finland, Iceland, Norway and Sweden) to less than €2.00 in a further 5 States (Denmark, Greece, Ireland, Portugal and Spain). A further 4 States had expenditure up to circa €2.50 (Austria, Belgium, Italy and the UK) and another 2 States with expenditure just over €2.50 (France and the Netherlands). Germany and Switzerland recorded average expenditure of around €4.00 per passenger. Luxembourg was the outlier with a total expenditure of €8.87.

CIVIL AVIATION SECURITY FINANCING STUDY

Summary

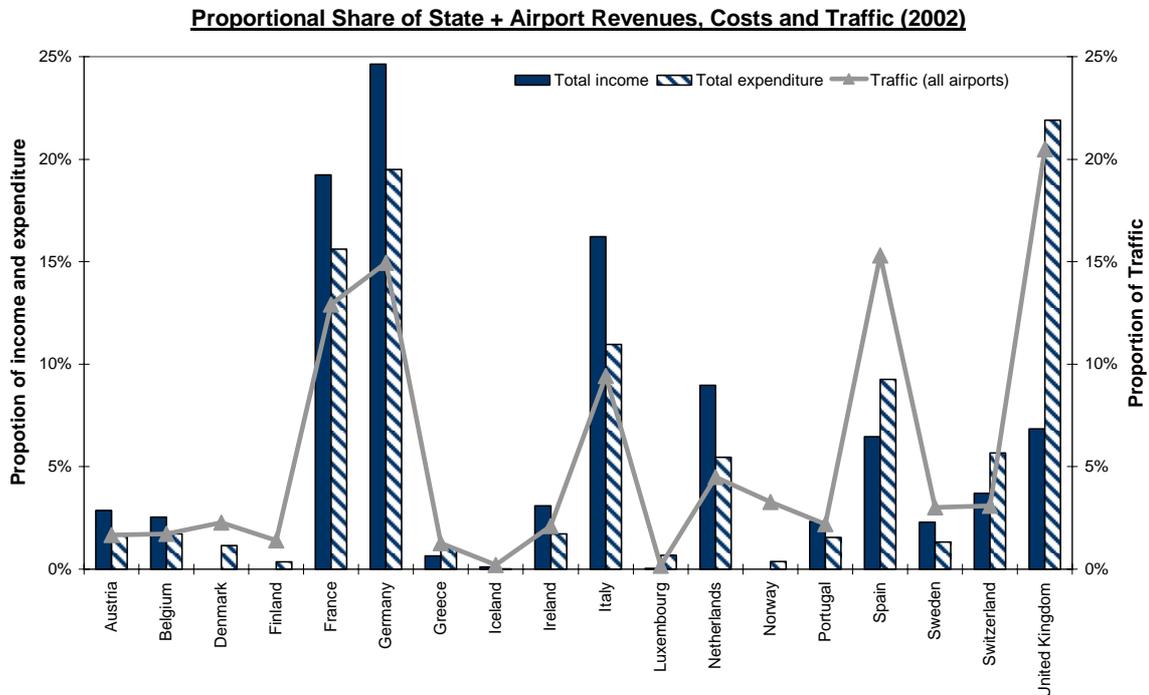
- Germany, Austria, Italy and the Netherlands had some of the highest levels of expenditure to match the high levels of revenues.
- No clear conclusions can be drawn as to whether either of the models produces lower overall levels of expenditure. In 2002, the full requirements of Regulation (EC) No 2320/2002 had not yet been fully complied with in a number of States.
- What does emerge is that the 4 States with the highest levels of expenditure were all in the centralised model (with average cost above €2.50 per passenger).
- At the operating level, it is clear that the specific State aviation security taxes and airport security charges do not fully meet the costs of aviation security in 14 of the 18 States. Apart from Luxembourg with the largest per passenger operating deficit of €8.62, 4 other States had deficits between €1.01 and €2.36 (Denmark, Greece, Switzerland and the UK).
- A further 9 States had deficits of less than €1.00 per passenger (Belgium, France, Germany, the Netherlands, Norway, Portugal, Finland, Italy and Spain).
- The remaining 4 States posted small operating surpluses in 2002, ranging between €0.04 and €0.12 for Austria, Ireland and Sweden. Iceland posted the largest surplus with €0.59 per passenger.
- Where revenues from specific State security taxes were insufficient to meet State expenditure, funding was assumed to be provided by the general taxpayer in that State. The analysis has been developed on the basis that unless otherwise advised, security taxes are set at a level to meet State security related expenditure.
- Some level of funding from the general taxpayer was found to be required in 6 States with the largest funding from general sources in Luxembourg at €8.62 per passenger. The remaining 5 States (Belgium, Germany, Portugal, the Netherlands and Switzerland) ranged from €0.02 to €0.49 per passenger.
- The balance of funding between the passenger and the general taxpayer in each State is therefore weighted heavily towards funding by the passenger. In 12 of the 13 States with operating deficits (with the exception of Luxembourg), the airports fund the major proportion of the deficit. The issue of how much security related revenue is raised from general aeronautical charges distorts this issue as a number of airports do not levy specific security charges but have raised their general charges in 2003 specifically to meet increased security costs.

6.6.2 Comparison of the traffic share versus revenues and expenditure

The proportional share of combined 2002 State and airport revenues, expenditure and traffic was compared to see if any relationships existed for the 18 States.

There would appear to be good correlation between a State's proportion of the total traffic for the 18 States, and its proportion of both total security revenue and expenditure in 9 of the States (Austria, Belgium, Greece, Iceland, Ireland, Luxembourg, Portugal, Sweden, and Switzerland).

Figure 23: Share of total security revenue and expenditure versus traffic (2002)



Source: IAA/AviaSolutions estimates based on security questionnaires

Exceptions include Germany, France, Italy and the Netherlands that have revenue and expenditure variations. Germany had 25% of revenue from 15% of the traffic; France generated 19% of total revenue from 13% of total traffic; Italy recorded a share of 16% and 9% of income and traffic respectively; while the Netherlands had 9% of revenues from only 5% of the traffic.

In terms of State expenditure, Germany accounted for 20% of combined State and airport expenditures from 15% of traffic. Similarly, France accounted for 16% and 13% of income and traffic respectively. The expenditure versus share of traffic in Italy and the Netherlands showed a much better correlation.

The UK accounts for 20% of total traffic but only reported generating 7% of total security revenues. This reinforces the view that aviation security activities are funded though general aeronautical charges via the regulatory framework price caps at the larger airports. The share of the UK's expenditure correlates closely with traffic share. A similar picture emerged in Denmark.

Overall there is a good fit between the relative proportions of security revenue generation, expenditure and traffic for the 18 States. Whilst there are variances in revenues and/or expenditure versus traffic share in a number of the 18 States, the overall relationships would appear to suggest that share of total revenues and costs should relate to traffic share for the majority of the States.

6.6.3 Elasticity of demand assessment

In theory, passenger elasticity of demand would imply that an increase in passenger security costs through additional State taxation and airport charges is likely to have a dampening effect on passenger demand. However, it is always very difficult to isolate the impact of one variable especially as this was a time of significant disruption in the civil aviation sector.

CIVIL AVIATION SECURITY FINANCING STUDY

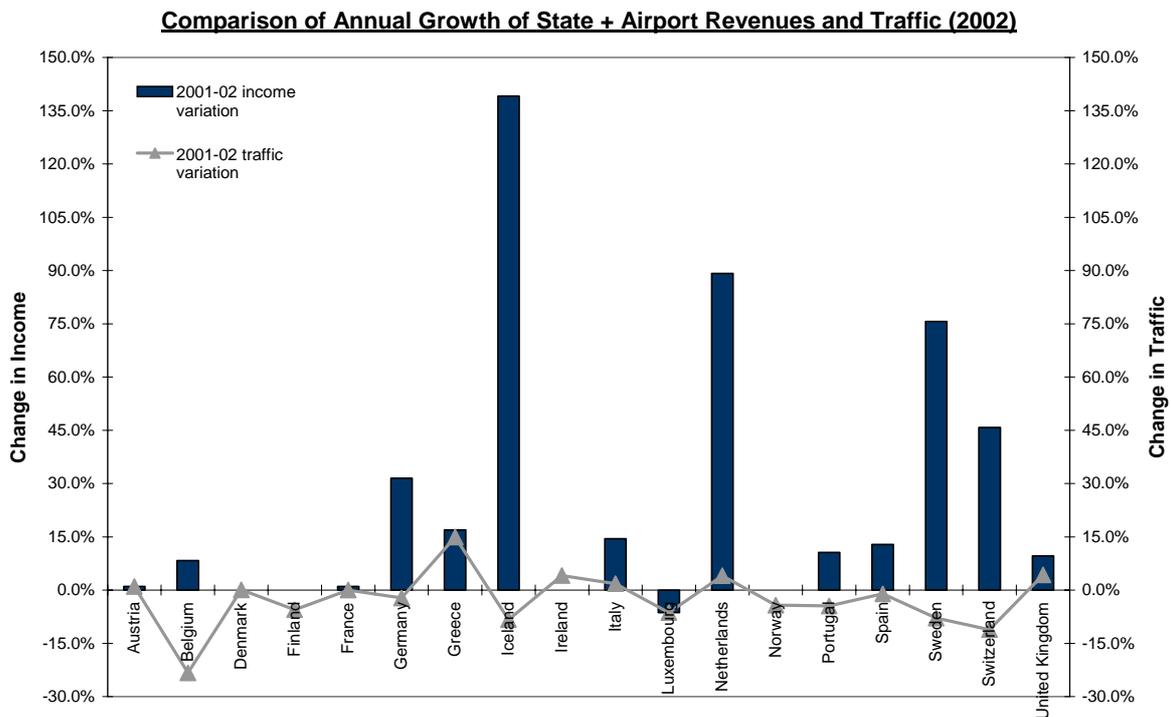
Summary

In 2002, combined State and airport income from passenger related aviation security taxes and charges for the 18 States increased by an estimated 24% over the previous year to €1.2bn. However, total estimated traffic declined by around 1.6%, which would indicate at a macro level that passenger elasticity of demand would not appear to be overly sensitive to increased security costs.

Lower traffic in 2002 would have been driven by a number of variables including global economic downturn, threats of terrorism and war in Afghanistan. However, the additional State taxes and airport charges increases may have had a contributory effect on the overall decrease. In the Netherlands, traffic grew 4% year-on-year when there was an 89% increase in State and airport revenues through increased levies on passengers. A contrasting position is evident in Belgium, where traffic declined by 23% when levies increased by 8%.

Larger traffic reductions in Belgium and Switzerland can be explained by the failures of the main carriers (Sabena and Swissair) rather than any direct impact of increased security taxes or charges.

Figure 24: State and airport revenue variation versus traffic (2001 vs. 2002)



Source: IAA/AviaSolutions estimates based on security questionnaires

It is always very difficult to isolate the impact of one variable where multi-variants combine to produce an outcome. However, given the financial pressures on airlines and airports during 2002, any increases in security costs would have had a negative impact on airport and airline profitability. Further analysis of this aspect is outside the scope of this study.

6.6.4 Proportion of security taxes and charges on air fares

This section compares the average security taxes and charges levied on passengers by the States and airports during 2002 across 17 of the 18 States. Iceland is not included as part of this comparison as no average fare data was available for Keflavik airport.

This comparison estimates the proportion of State security taxes and airport security charges to the average airfares paid by passengers on routes from the 17 States. The routes include a range of destinations and fare type:

- **Intra-European routes:** for both economy and business class fares.
- **Long haul routes:** from European cities to New York.
- **Domestic routes and no frills carriers.**

The analysis is based on the average airfares for economy and business class travel for a sample of routes during the 4th quarter of 2002 and the State taxes and airport charges applicable in each State in 2003. The airfares data was sourced from American Express²⁶.

In addition to the average fares paid by passengers on scheduled services, average fares were also estimated for two established no frills carriers (easyJet and Ryanair). While the average fares for scheduled carriers were available on a route basis, the system wide average fares for the no frills carriers were used given the predominant short sector length nature of their operations.

6.6.4.1 Intra-European routes

For comparison purposes, a typical route was chosen for each of the 14 States where taxes and charges are levied. For each route, the proportion of State security taxes and airport charges of the average fare was calculated for economy and business classes.

Economy Class

From the sample of 14 routes analysed, the combined State security taxes and airport charges represent less than 1% of the average one way fare for 5 routes, between 1% and 2% for a further 6 routes and between 3% and 6% for the remaining 3 routes.

The proportion of security taxes and/or charges is higher on the routes originating in Dublin, Paris and Amsterdam. This results from a combination of factors, either lower average fares (for the Dublin route) and/or relatively high security taxes and airport charges at Paris CDG and Schiphol airports in 2003.

In Paris, the combination of French CAT²⁷ and airport security charge levied by Aéroports de Paris totalled €9.77 per departing passenger; whilst in Amsterdam, the combination of security taxes and charges equated to €9.75 per departing passenger assuming the passenger is commencing the trip at Schiphol²⁸.

²⁶ American Express European Corporate Travel Index – for Quarter 4 of 2002.

²⁷ 22% of total Civil Aviation Tax allocated as security tax (i.e. €3.92 x 22% and €6.66 x 22% for intra-EU and Non-EU passengers).

²⁸ Schiphol tax and charges prior to 31st March 2003.

Business Class

The same levels of security taxes and airport charges are generally levied on all passengers regardless of the class of travel. However, the relative proportion of security taxes and charges of the average one way business class fares reduces considerably.

From the sample of routes analysed, security taxes and charges equate to less than 1% for 6 routes and less than 2.1% for a further 5 routes.

The only two exceptions are routes originating in Amsterdam and Paris where security taxes and charges represent 3.6% and 3.4% of the average business class fare on Amsterdam-Frankfurt and Paris-London routes respectively.

6.6.4.2 Long-haul routes

To estimate the impact of security taxes and charges on long-haul travel, the cost of air travel between 13 European gateways and New York was analysed. For each route, the proportion of State security taxes and airport charges of the average fare was calculated for economy and business classes.

Security taxes and/or airport charges may vary between European and non-European air travel. Some States and/or airports (France, Portugal and Spain) levy different taxes/charges according to the destination of the traveller (i.e. Schengen, EU Non-Schengen, Non-EU).

6.6.4.3 Economy Class

Despite the increased levy that may apply in some States, the combination of security taxes and charges represented less than 1% for 12 of the 13 economy routes. The exception was Paris-New York where the combined security tax and airport charge totalled €10.98 per departing passenger, 1.3% of the average one way air fare between Paris and New York in late 2002.

6.6.4.4 Business Class

The weight of security taxes and airport charges on average business class fares to New York is minimal at less than 0.5% of the fare for all 13 routes analysed.

6.6.4.5 Domestic routes and no-frills carriers

The impact of security taxes and airport charges is more evident on two specific traffic segments:

- Domestic routes.
- No-frills carriers.

Average domestic fares tend to be lower than intra-European fares due to a combination of factors (more competition, lower yields, shorter sector lengths, etc). However, security taxes and airport charges applicable to domestic routes are frequently at the same level as intra-European routes.

The impact of security taxes and airport charges on domestic fares was estimated for a sample of 8 trunk routes.

The average fare for no frills carriers is generally lower than fares achieved by scheduled carriers for intra European routes.

CIVIL AVIATION SECURITY FINANCING STUDY

Summary

For comparison purposes, the security taxes and airport charges applicable at the carriers' home bases (London-Luton and Dublin for easyJet and Ryanair respectively) have been included in the analysis.

For domestic routes, security taxes and airport charges range between 1% and 3.2% of the average fare. For some routes, such as Zurich-Geneva, Frankfurt-Berlin and Paris-Nice, the combination of security related levies represents over 5% of the average fare.

For no-frills carriers, the combination of security taxes and airport charges shows a mixed picture. For easyJet, security costs at its home base airport (Luton) represent 1.2% of its average system-wide fare. For Ryanair security charges at Dublin airport represents 7.7% of its average system-wide fare.

However, if different bases are taken into consideration the results will change. For example, Ryanair passengers do not pay any specific security related charges at its main London-Stansted airport, as BAA does not levy any specific security related charges as they are contained in the overall airport charges. On the other hand, every departing passenger on an easyJet flight out of Schiphol airport would have paid security charges of €9.75 representing almost 13% of the carriers average one-way fare in 2002.

6.6.4.6 Proportion of security taxes and charges on air fares conclusions

From comparing the security taxes and airport related charges versus the average fares for economy and business class travel at a sample of European and long-haul routes, the following conclusions can be drawn:

- The impact of security taxes and charges on the sample of long-haul routes represents less than 1% of the average economy class fare and less than 0.5% of the business class average fare.
- For intra-European travel, the combination of security taxes and airport charges represents between 1% and 2% of the average fare.
- For domestic routes, security levies represent between 3% and 6% of the cost of the sample of routes, which is significantly higher than those averaged by intra-European routes.
- Due to the nature of the no frills business model (low-fare and short sectors), the proportion of security taxes and charges paid by passengers could be significantly higher than for any of the other route samples analysed. However, this may depend on the originating point of travel (State and/or airport). For example, an easyJet passenger would have been charged 1.2% of the average fare when departing from London-Luton airport, but this could have risen to as much as 13% when departing from Amsterdam Schiphol.

Although there is no evidence that security taxes and airport charges represent a deterrent to air travel demand, these could represent a significant proportional cost for passengers particularly when travelling on domestic routes and/or no-frills carriers.

7 European versus United States approach

The events of 11 September 2001 focused attention on how aviation security was being provided and regulated in the United States (US). This attention revealed numerous shortcomings that prompted increased scrutiny of not only the *level* of aviation security being provided but also *how* it was being provided in the US.

The US Government reacted by ensuring that more resources were devoted to providing aviation security as well as to research and development activities that should lead to improvements in aviation security in the future.

Since 11 September 2001, aviation security in the US has undergone dramatic change. The most visible change is that the federal government has assumed direct responsibility from the carriers and airports for the actual provision and funding of aviation security. With the enactment of Air Transportation Security Act (ATSA) in November 2001, a single body, the Transportation Security Administration (TSA) assumed overall responsibility for aviation security within the US.

The US government has recognised that it has an important role to play in aviation security. The federal role has moved from the setting and monitoring of security standards to one of financing and implementing the standards. This substantial enlargement of governmental involvement is in contrast to the public-private partnerships that dominate the implementation of aviation security standards in Europe. The Private Security Screening Pilot Program running at 5 US airports (2002 to 2005) will have an input in determining the future organisational structure of aviation security in the US.

7.1 Funding aviation security

Although the comparison of funding of aviation security between Europe and the US was not a critical part of this study, the following summarises the key points of the respective approaches.

In an attempt to overcome the serious vulnerabilities within aviation security exposed by the events of 11 September 2001, the financial assistance provided by the US government has increased considerably. The US government is estimated to have provided financial assistance of almost \$32bn to the US aviation industry from FY 2002 to FY 2004. It is generally recognised that the US was a long way behind Europe in the field of aviation security. Much of the short term funding of security in the US was aimed at providing a similar level of security to the European States.

The US has followed the centralised model for aviation security since November 2001 where the Federal government (through the TSA) assumed responsibility for the key security activities at US airports. In the US, remuneration of key security activities is paid for primarily by the TSA out of Federal funds.

In Europe, Security activities are remunerated by a combination of stakeholders, including airports, air carriers, passengers and the States themselves.

Although the TSA is allowed to charge up to a maximum of \$5.00 per passenger per one-way trip basis (\$10.00 per round-trip), the charge has been set at 50% of the maximum level (i.e. \$2.50 per passenger per segment) since its introduction on 1 February 2002.

However, recognising the issue of US carrier profitability, between 1 June 2003 and 30 September 2003, US Congress suspended security fees. This suspension applied to both US and foreign carriers.

CIVIL AVIATION SECURITY FINANCING STUDY

Summary

European States generated around €1.2bn in security taxes and airport charges and spent an estimated €2.0bn in 2002. In the US, the TSA spent a total of \$6.1bn in FY2003 of which \$2.2bn was forecast to be generated through security taxes. It is not clear how much of this amount was actually raised.

The average security operating expenditure for those European airports undertaking the key security responsibilities was estimated at €2.23 per passenger in 2002. A similar estimate for the TSA, which provides screening across all the US airports, was circa €4.42 per passenger in FY2003.

The passenger security fees created by ATSA, which were intended to pay for the costs of aviation security, are not expected to cover the costs of providing the increased security measures. At the moment the US Government is financing the shortfall.

To illustrate the very different approaches to the financing of aviation security, in May 2003, the TSA reimbursed \$2.4bn to 66 US air carriers for expenses and revenue forgone related to aviation security. The financial aid was distributed in proportion to the amount of security related fees that eligible carriers have paid the TSA since February 2002. Subsequent payments have been made to carriers and at present a total of \$4.6bn has been provided.

8 Conclusions

8.1 Structure of European aviation security

There are two basic models for the provision of aviation related security activities within Europe:

- **Centralised Model** – the main security activities are primarily the responsibility of the State via a government body (CAA, Ministry of Transport, police force, etc). This is broadly the current situation in 11 States (Austria, Finland, Germany, Iceland, Italy, Luxembourg, Norway, Portugal, Spain, Sweden and Switzerland).
- **Decentralised model** – the main security activities are provided by the airport authorities under the supervision of the relevant authority (normally the CAA). These activities could either be provided by the airport directly or outsourced to a third party. This is the current situation in 7 States (Belgium, Denmark, France, Greece, Ireland, Netherlands and the UK).

From the results of the analysis in this study, a number of conclusions can be drawn.

8.2 State and airport revenue versus expenditure

- The States and airports generated an estimated €1.2bn from security taxes and charges across the 18 States in 2002.
- There is a significant difference in the average revenue profile for States and airports under the models, with the centralised model generating 63% more revenue per passenger than the decentralised model (€1.07 to €1.74).
- In the decentralised model, those airports that do not levy specific security related charges drive the majority of this difference. A number of the airports that do not levy charges are subject to economic regulation. As such, the costs of security are factored into their allowable charges and are therefore recovered.
- The States and airports incurred an estimated expenditure of €2.0bn on security related activities across the 18 States in 2002 leading to an operating deficit of €0.8bn.
- The total State and airport costs per passenger under the two models are almost identical with €2.22 per passenger in the centralised model compared with €2.24 under the decentralised model.
- The net State and airport position under the two models reflects the differences in income with the centralised model having a deficit of €318m (-€0.63 per passenger) while the decentralised model has a much larger net deficit of 467m (-€1.23 per passenger).
- When the large regulated airports are excluded from the analysis (on the basis that the regulatory structure allows them to recover their costs), the deficit reduces to around €147m under the decentralised model.
- When the 18 States are combined, the operating deficit for States and airports is €786m. Again, the airports in the decentralised model that do not levy specific charges but are subject to economic regulation (BAA and Copenhagen) drive a significant proportion of the deficit.

When these airports are excluded, the estimated deficit for all of the States and airports reduces to around €397m which equates to a deficit of €0.46 per passenger.

8.3 Competition issues conclusions

- The total revenue generated from State taxes and charges was relatively consistent with total burden on the passenger of under €2.00 in 11 of the 15 States levying security related taxes or airport charges.
- Neither the authorities nor the airports in three States (Denmark, Finland and Norway) were levying any security related taxes or airport charges in 2002.
- By contrast, 4 States (Austria, Italy, Germany and the Netherlands) had estimated passenger burdens ranging from €2.18 to €3.13.
- There was no clear distinction in the levels of revenue generated per passenger under either of the models with 5 of the decentralised model States charging passengers a total of less than €2.00 compared to 6 States in the centralised model. The 4 highest charging States were all in the centralised model.
- Passengers in the 4 highest charging States were paying considerably more in specific security related State taxes and airport charges than passengers in the other States.
- The actual passenger charges related to security may also be contained in general aeronautical charges at a number of airports, including those large regulated airports in Denmark and the UK. This lack of transparent application of security charges distorts the overall understanding of the revenues actually generated to fund security at airports across Europe.
- The expenditure per passenger on security related activities provided by the stakeholders was less than €2.50 in 13 States; another 2 States had expenditure just over €2.50 (France and the Netherlands); a further 2 States (Germany and Switzerland) recorded average expenditure of around €4.00 per passenger; Luxembourg was the outlier with a total expenditure of €8.87.
- Germany, Austria, Italy and the Netherlands had some of the highest levels of expenditure to match the high levels of revenues.
- No clear conclusions can be drawn as to whether either of the models produces lower overall levels of expenditure. In 2002, the full requirements of Regulation (EC) No 2320/2002 had not yet been fully complied with in a number of States.
- What does emerge is that the 4 States with the highest levels of expenditure were all in the centralised model (with average cost above €2.50 per passenger).
- At the operating level, it is clear that the specific State aviation security taxes and airport security charges do not fully meet the costs of aviation security in 14 of the 18 States. Apart from Luxembourg with the largest per passenger operating deficit of €8.62, 4 other States had deficits between €1.01 and €2.36 (Denmark, Greece, Switzerland and the UK).
- A further 9 States had deficits of less than €1.00 per passenger (Belgium, France, Germany, the Netherlands, Norway, Portugal, Finland, Italy and Spain).

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- The remaining 4 States posted small operating surpluses in 2002, ranging between €0.04 and €0.12 for Austria, Ireland and Sweden. Iceland posted the largest surplus with €0.59 per passenger.
- Some level of funding from the general taxpayer was found to be required in 6 States with the largest funding from general sources in Luxembourg at €8.62 per passenger. The remaining 5 States (Belgium, Germany, Portugal, the Netherlands and Switzerland) ranged from €0.02 to €0.49 per passenger.
- The balance of funding between the passenger and the general taxpayer in each State is therefore weighted heavily towards funding by the passenger. In 12 of the 13 States with operating deficits (with the exception of Luxembourg), the airports fund the major proportion of the deficit. The issue of how much security related revenue is raised from general aeronautical charges distorts this issue as a number of airports do not levy specific security charges but have raised their general charges in 2003 specifically to meet increased security costs.
- In some States passengers have more of taxes and/or charges burden than in other States and the reported levels of expenditure is more in some States than in others. Some States generate net surpluses and deficits under each of the models but there is no clear evidence that passengers are significantly advantaged or disadvantaged under either of the models or in any of the States.
- When the proportional share of combined 2002 State and airport revenues, expenditure and traffic was compared to see if any relationships existed for the 18 States, there would appear to be good correlation in 9 of the States.
- Exceptions include Germany and France that have revenue and expenditure variations. Germany had 25% of revenue from 15% of the traffic and France generated 19% of total revenue from 13% of total traffic. In terms of State expenditure, Germany accounted for 20% of combined State and airport expenditures from 15% of traffic. The share of expenditure against share of traffic in the France was a much better correlation (16% versus 13% respectively).
- The UK accounts for 20% of total traffic but only reported generating 7% of total security revenues. This reinforces the view that aviation security activities are funded through general aeronautical charges via the regulatory framework price caps at the larger airports. The share of the UK's expenditure correlates closely with traffic share. A similar picture emerged in Denmark.
- Overall there is a good fit between the relative proportions of security revenue generation, expenditure and traffic for the 18 States. Whilst there are variances in revenues and/or expenditure versus traffic share in a number of the 18 States, the overall relationships would appear to suggest that share of total revenues and costs should relate to traffic share for the majority of the States.
- Passenger elasticity of demand would imply that an increase in passenger security costs through additional State taxation and airport charges is likely to have a dampening effect on passenger demand. In 2002, combined State and airport income from passenger related aviation security taxes and charges for the 18 States increased by an estimated 24% over the previous year to €1.2bn. However, total estimated traffic declined by around 1.6%, which would indicate at a macro level that passenger elasticity of demand would not appear to be overly sensitive to increased security costs.

- Lower traffic in 2002 would have been driven by a number of variables including global economic downturn, threats of terrorism and war in Afghanistan. However, the additional State taxes and airport charges increases may have had a contributory effect on the overall decrease. In the Netherlands, traffic grew 4% year-on-year when there was an 89% increase in State and airport revenues through increased levies on passengers. A contrasting position is evident in Belgium, where traffic declined by 23% when levies increased by 8%.
- It is always very difficult to isolate the impact of one variable where multi-variants combine to produce an outcome. However, given the financial pressures on airlines and airports during 2002, any increases in security costs would have had a negative impact on airport and airline profitability. Further analysis of this aspect is outside the scope of this study.
- From comparing the security taxes and airport related charges versus the average fares for economy and business class travel at a sample of European and long-haul routes, the following conclusions can be drawn:
 - The impact of security taxes and charges on the sample of long-haul routes represents less than 1% of the average economy class fare for 12 of the 13 routes analysed and less than 0.5% of the business class average fare for all routes analysed.
 - For intra-European travel, the combination of security taxes and airport charges represents between 1% and 2% of the average fare.
 - For domestic routes, security levies represent between 3% and 6% of the cost of the sample of routes, which is significantly higher than those averaged by intra-European routes.
 - Due to the nature of the no frills business model (low-fare and short sectors), the proportion of security taxes and charges paid by passengers could be significantly higher than for any of the other route samples analysed. However, this may depend on the originating point of travel (State and/or airport). For example, an easyJet passenger would have been charged 1.2% of the average fare when departing from London-Luton airport, but this could have risen to as much as 13% when departing from Amsterdam Schiphol.
- Although there is no evidence that security taxes and airport charges represent a deterrent to air travel demand, these could represent a significant proportional cost for passengers particularly when travelling on domestic routes and/or no-frills carriers.

8.4 Carrier security revenue versus expenditure

- The security operating results for the carriers in the study were mixed. The respondents represent around 48% of total passengers carried in the 18 States. Whilst many carriers were able to introduce security related surcharges after September 2001, many were not because of competitive pressures. Those carriers able to introduce surcharges generated an estimated €633m in 2002.
- A number of carriers, especially the full service network carriers, generated considerable surcharge revenues in 2002 leading to a security operating surplus of around €62m or €0.30 per passenger for those carriers levying security charges.

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- When all responding carriers are included in the analysis, the result is a net deficit of €44m or €0.19 per passenger.
- Responding carriers in 6 of the States reported security operating surpluses whilst those in 6 other States reported operating deficits. Deficits were generally as a result of not levying a security surcharge.
- Information on costs related to cockpit door modifications and increases in insurance premiums drove most of the increased costs for carriers in 2002. When the impact of these items is estimated across the 18 States, the deficit could be as much as €1.0bn in 2002.
- However, the expenditure on cockpit door modification was mostly completed in 2002 according to the carrier responses, and these costs of circa €330m are considered to be non-recurring.
- For a selection of carriers, the reported aviation security operating position was compared with available financial results to examine the relationship between carrier profitability and the levying of surcharges:
 - It would appear that carriers posting operating losses in 2002 were to some extent impacted by their negative position from the financing of additional security costs.
 - On the other hand, it would also appear that those carriers posting operating profits during the same period also recorded a surplus from surcharge revenues financing security related expenditure in 2002.