ASSESS

Assessment of the contribution of the TEN and other transport policy measures to the mid-term implementation of the White Paper on the European Transport Policy for 2010

FINAL REPORT
ANNEX XIV QUALITATIVE ANALYSIS OF AIR TRANSPORT ISSUES

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Preface

This is ANNEX XIV of the final report for *'Assessment of the contribution of the TEN and other transport policy measures to the mid-term implementation of the White Paper on the European Transport Policy for 2010'.*

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Scope

Scope of the ASSESS project

The ASSESS study is about the ***"Assessment of the contribution of the TEN and other transport policy measures to the mid-term implementation of the White Paper on the European Transport Policy for 2010"***.

The European Commission's White Paper of 12.9.2001 "European transport policy for 2010: time to decide" aims to promote a sustainable transport policy. The White Paper proposes to achieve sustainability by gradually breaking the link between transport growth and economic growth, principally in three ways: changing the modal split in the long term, clearing infrastructure bottlenecks and placing safety and quality at the heart of the transport policy.

As foreseen, the White Paper on Transport undergoes in 2005 an overall ***assessment concerning the implementation of the measures it advocates and to check whether its targets*** - for example, on modal split or road safety - ***and objectives are being attained or whether adjustments are needed.***

ASSESS provides technical support to the Commission services for the above mid-term assessment of the White Paper.

The analysis accounts for the economic, social and environmental consequences of the proposed measures and their contribution to sustainable development objectives. It provides also a detailed analysis of those effects of enlargement likely to affect the structure and performance of the EU transport system.

The study takes a three pillar approach based on the use of analysis, indicators and models. National transport policies are reviewed for compatibility and coherence with the White Paper objectives. The models used allow a detailed analysis of the freight market, the passenger market and their infrastructure networks under a number of scenarios.

Scope of this Annex

This annex analyses the 13 aviation-specific measures of the White Paper. The analysis is based on a qualitative approach. A focus has been laid on the following aspects:

- In the light of external changes since 2001, are the measures appropriate and effective to improve the European air transport system?
- What are – on a qualitative level - the environmental, social and economic effects of the implementation of the White Paper's measures?
- What could be done to improve the effectiveness of the measures and which other measures could contribute to improve the European air transport system?

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Abbreviations

ACI-Europe	Airports Council International - Europe
ADV	Arbeitsgemeinschaft Deutscher Verkehrsflughäfen
AEA	Association of European Airlines
AER	Assembly of European Regions
Anon.	Anonymous
ANSP	Air Navigation Service Provider
AOA	Airport Operators Association
Art.	Article
ASA	Air Service Agreement
ATAG	Air Transport Action Group
ATC	Air Traffic Control
ATFM	Air Traffic Flow Management
ATM	Air Traffic Management
bn	Billion
BSCA	Brussels South Charleroi Airport
CAA	Civil Aviation Authority
CEATS	Central European Air Traffic System
Cf.	Confer
CNS	Communication, Navigation and Surveillance
CRS	Computer Reservation System
DfT	Department for Transport
DTLR	Department for Transport, Local Government and the Regions
e.g.	exempli gratia
EASA	European Aviation Safety Agency
EBRD	European Bank for Reconstruction and Development
EC	European Community
ECAC	European Civil Aviation Conference
ECJ	European Court of Justice
ed.	Edition
eds.	Editors
EIB	European Investment Bank
ELFAA	European Low Fares Airline Association
ERA	European Regional Airlines Association
ERDF	European Regional Development Fund
ETS	Emissions Trading Scheme
EU	European Union
f.	following page
FAA	Federal Aviation Administration
FAB	Functional Airspace Block
ff.	following pages
FIR	Flight Information Region
FL	Flight Level
fn.	Footnote
GATS	General Agreement on Trade in Services
GHG	Greenhouse Gases
i.e.	id est
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization

IHK	Industrie- und Handelskammer (Chamber of Commerce and Industry)
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
ISPA	Instrument for Structural Policy for Pre-Accession
Iss.	Issue
IT	Information Technology
JAA	Joint Aviation Authorities
JAR	Joint Aviation Requirement
LCC	Low Cost Carrier
m	Million
MTOM	Maximum Takeoff Mass
n.d.	not dated
NATS	National Air Traffic Services Ltd.
NERA	National Economic Research Associates
NGO	Non-governmental Organisation
p.	page
NUAC	Nordic Upper Area Control Centre
O&D	Origin & Destination
OAA	Open Aviation Area
p. a.	per annum
Para.	Paragraph
pp.	pages
PSO	Public Service Obligation
RETT	Committee on Regional Policy, Transport and Tourism
RPI	Retail Price Index
SAFA	Safety Assessment of Foreign Aircraft
SARS	Severe Acute Respiratory Syndrome
SDR	Special Drawing Right
SES	Single European Sky
SESAME	Single European Sky Implementation Programme
T&E	European Federation for Transport and Environment
TEN-T	Trans-European Networks - Transport
UAC	Upper Area Control Centre
UK	United Kingdom
UNFCCC	United Nations Framework Convention on Climate Change
USOAP	Universal Safety Oversight Audit Programme
v.	versus
Vol.	Volume
WTO	World Trade Organization
ZLW	Zeitschrift für Luft- und Weltraumrecht

ANNEX XIV Qualitative analysis of air transport issues

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XIV.1. The Role of Aviation in the White Paper

The White Paper "European transport policy for 2010: time to decide", published by the European Commission in September 2001 outlines the priorities of the European Common Transport Policy for the first decade of the new century. It acknowledges the importance of the transport sector for the economic development of the European Union, but is also aware of the challenges associated with transport such as congestion, noise and other environmental impacts.

The main objective of the policy outlined in the White Paper is to break the link between growth in transport and overall economic growth. In general, this crucial question remains yet to be answered by academics and politicians alike, as the benefits of globalisation, the reduction of trade barriers and an increasingly higher international division of labour automatically increase the need for transportation. For aviation this objective is particularly challenging due to the fact that air transport grows on average with twice the rate of GDP growth.[1]

The White Paper's general supposition of an unequal competition between the modes, especially rail and short sea shipping on the one hand and the allegedly environmentally unfriendly modes road and aviation on the other hand in conjunction with the general objective of a politically determined modal split (in fact the White Paper uses the words "regulated competition" several times and has the objective to return in 2010 to the modal split of 1998[2]) has provoked heavy criticism from aviation stakeholders.[3]

But not only industry stakeholders criticise the White Paper's positions for the future of air transport. T&E as a representative of environmental NGOs criticises that the modal split target as such will not be able to improve sustainability significantly.[4] A further point of criticism is that improved intermodality, namely the integration of airports into the high-speed railway network, will enhance their accessibility and will therefore contribute to an increase of the share of aviation in the modal split.[5]

In some aspects, the White Paper's statements seem to follow conflicting goals: On the one hand it says that is one of the transport policy's objectives to satisfy the needs of users. This would clearly indicate a demand-based infrastructure policy, as users obviously value the modes differently, with a clear favour for road and air transport. These modes have exactly the characteristics the users particularly need. On the other hand – and this position dominates throughout the White Paper – it says that "the growth in road

[1] Cf. ATAG (2000), p. 9.
[2] Cf. Commission of the European Communities (2001), p. 11.
[3] For instance by the Association of European Airlines (AEA), cf. Neumeister, K.-H. (2002); the Airports Council International - Europe, cf. ACI-Europe (2001) or the British Airport Operators Association, cf. AOA (2001).
[4] Cf. T&E (2001), p. 2.
[5] Cf. T&E (2001), p. 20.

and air traffic must therefore be brought under control, and rail and other environmentally friendly modes given the means to become competitive alternatives"[6].

Trying to control, regulate or even limit the growth of certain transport modes, simply because the demand exceeds infrastructure capacity and the occurrence of externalities fundamentally contradicts the principles of free and fair competition. It could be argued that it is not a task for politics to determine the modal split in a competitive environment. Its objective must be to safeguard fair competition within and between the modes - for instance by implementing instruments that reduce negative external effects and unfair competition. In a market economy, it is the consumers who decide which product or service to buy according to their individual preferences. No exception should be made in the transport sector – users should determine the modal split according to their preferences within a fair intermodal competitive environment.

To pre-determine the modal split actually contradicts a policy that aims to spur competition, increase efficiency and giving the consumers the right of choice – or to say it in the words of the renowned economist Alfred E. Kahn: "The essence of the case for competition is the impossibility of predicting most of its consequences. The superiority of the competitive market is the positive stimuli it provides for constantly improving efficiency, innovating, and offering consumers diversity of choice "[7].

Enhancing economic efficiency in the air transport sector is one mosaic part in the overall context of the Lisbon process. Air transport contributes to a high degree to the success of other sectors, like tourism and physical distribution management, but is also of enormous importance for the manufacturing industries. The growth rate in air transport outpaces general GDP growth and as air transport is a service industry with a high intensity of labour, it is expected to create 2 to 4 million new jobs by 2020.[8]

The European liberalisation packages of the 1990s and their impacts on fares, service quality, frequencies and employment have shown that policy measures have a dominant effect on the development of the air transport sector. As a result of the liberal policies of the 1990s consumers have benefited from a range of new services and lower fares. The continuation of a liberal policy can be expected to be a promising strategy to spur economic growth and employment.

[6] Commission of the European Communities (2001), p. 21.
[7] Kahn, A. E. (1983), p. 140.
[8] Cf. ACARE (2004), p. 14.

XIV.2. The Aviation Industry in 2001 and external Developments since then

XIV.2.1. The Situation in 2001

The situation in 2001 prior to September 11 was characterised by an economic hangover after the "new economy" euphoria began to vanish since early 2000. The world economy was slowing down after it grew by 4.7 per cent in 2000. For the U.S., a more or less hard landing was expected during 2001 and also negative impacts were feared for the European economies, especially those that were highly dependent on international trade.[9]

While most of the traditional air carriers still generated some profits, they had to cope with the economic downturn and the rise of low cost carriers. Although the low cost carriers in Europe had only a small market share, their growth began to affect the traditional airlines' competitive behaviour. In reaction to the economic downturn and the new opportunities the LCCs offered, many companies reduced their travel expenses. Traditional airlines were severely affected, since many of their high-yield business class travellers switched to lower yielding economy class. The troubles for traditional airlines were aggravated by the fact that in early 2001 deliveries of new aircraft ordered during the boom at end of the 1990s reached a peak and pushed additional capacity into the market, which had already to cope with declining yields. The economic downturn also had a negative impact on the cargo business, as trade in many industrialised nations temporarily dropped.

XIV.2.2. The Effects of September 11, 2001, SARS and the Gulf War

The September 11, 2001 terrorist attacks in the USA, the subsequent war in Afghanistan, the SARS crisis in Asia and the Gulf war resulted in an unprecedented drop in air traffic. In addition to the already difficult economic environment after the "new economy" crash in 2000 and 2001, passengers' individual security concerns aggravated the drop in demand for private and business travel.

More or less, the events worked like a catalyst to reshape the airline industry. In order to survive, airlines had to reduce their high cost base built up during the times when the aviation market was still regulated. Older aircraft were retired, new deliveries deferred and employees were laid off to reduce costs.

Severely impacted were mainly smaller European airlines that were formerly national flag carriers. Their business practices and structures still resembled in many instances the time when they were fully protected. In order to survive the radical changes in demand patterns they were forced to implement painful restructuring programs to enhance efficiency. Although the economic viability of these operations due to the limited size of their home markets is questionable, they continued to operate in some instances with ongoing losses. The most successful reorganisation attempts so far were those, where traditional carriers changed their business model radically and adopted the concepts of low cost carriers. First and foremost to mention in this context are the efforts of the Irish carrier Aer Lingus, which has become one of the most profitable airlines in Europe in terms of operating margins after reducing its workforce by one third and streamlining its operations.[10]

Another important impact of the events of September 11, 2001 is a boost in attention for security issues. Security in fact has become one of the major concerns in the aviation industry worldwide. On the one hand enhanced security standards made flying more secure, but on the other hand they generated higher

[9] Cf. IMF (2001), p. 20.
[10] Cf. Capell, K. (2004).

costs, increased total travel times, complicated operating procedures and finally caused a lot of inconveniences for passengers. The Commission has been working on these issues intensively and the legislative bodies in the EU have acted with several Regulations and Directives regarding this matter.

XIV.2.3. The Decision of the Court of Justice regarding bilateral Air Service Agreements

The White Paper already stated in 2001 the Commission's intention to gain a higher degree of competences to represent the European Union in the relations with third countries.[11] This in particular concerned the negotiation of air services agreements (ASAs) with third countries. In contrast to the efforts of the Commission, the Member States remained eager to retain these rights, which were in their view integral part of national sovereignty.

Customary to historical practice, Member States included in their bilateral ASAs with third countries a so called "nationality clause", which restricted traffic rights between the two concluding parties to airlines owned and controlled by nationals of the two concluding parties. This effectively excluded air carriers from other Member States from the provision of air services to third countries.

The Commission questioned these clauses as contradictory to Article 43 of the EC Treaty, which guarantees the freedom of establishment and wanted to gain the exclusive mandate to negotiate with third countries. To achieve this objective it brought eight exemplary cases before the European Court of Justice.

The European Court of Justice ruled on November 5, 2002, *inter alia* that indeed the eight Member States had failed to fulfil their obligations put down in the EC Treaty in combination with the third package of air transport liberalisation measures concerning these bilateral air services agreements. The Court ruling *de facto* means that more than 1,500 bilateral air services agreements negotiated between the 25 Member States and third countries have to be amended to bring them in line with Community law.

However, the Court decided, that the Commission only has the mandate to negotiate air service agreements with third countries when authorised by the Council. In case of the USA, the Council granted the mandate to the Commission on June 5, 2003.[12]

One of the crucial points in these negotiations for an US-EU open aviation area are ownership restrictions. While in almost every other industry of the services sector, be it telecoms or financial services, tourism or maritime transport, ownership restrictions have been lifted throughout the liberalisation process in recent years, the airline industry basically remains in a framework more than six decades old.

Ownership regulation has been introduced to guarantee a "balance of benefits"[13] inherent to bilateral air services agreements. Additionally, it was seen as a safeguard towards the responsibility concerning safety and liability for operations.

The November 5, 2002 ECJ ruling has raised the basic question, if the current framework of bilateralism shall be amended with an EU-nationality for air carriers or to move on to a more general, multilateral liberalisation effort, resulting in a removal of ownership clauses from the international legal framework.

Even if a more liberal ownership regulation in the run of an EU-US bilateral agreement is agreed upon, namely enabling cross-ownership of airlines, there still remains a potentially huge problem: most of the

[11] Cf. Commission of the European Communities (1999), p. 99.
[12] European Union - Delegation of the European Commission to the United States (2003).
[13] Janda, R./Wilson, J. (2004).

remaining bilateral air services agreements between third countries contain a nationality clause, which still link traffic rights with ownership provisions securing the traditional "balance of benefits". This situation is potentially undermining the efforts of the Commission to liberalise air transport markets by means of bilateral agreements.[14] Just a brief example: In the view of a third country, a mostly European-owned carrier conducting its business mainly in the U.S., would probably lose its traffic rights between the U.S. and third countries, because it is not owned by U.S. nationals any more.

Therefore it is argued that the EU-US negotiations could spur a more multilateral approach, as on the U.S. side Canada and Mexico most likely will not be left outside and the APEC states (namely Brunei, New Zealand, Chile, Peru and Singapore) already have a more liberal multilateral agreement with the U.S., while on the European side Norway, Iceland and Switzerland will be most likely included, possibly as well other countries from eastern and south-eastern Europe.[15]

In the case of the completion of an open EU-US aviation area, aviation could be a real pioneer for other sectors, as the negotiations for an EU-US open trade area collapsed in the middle of the last decade and have not been revived since then.

XIV.2.4. The Development of Alliances

International airline alliances have been considered as a substitute for mergers and acquisitions for a long time, as the latter mentioned forms of cooperation are highly restricted due to ownership nationality clauses in bilateral air service agreements that are the basis for the granting of traffic rights. Main arguments to form alliances are positive effects on revenue due to network economies and cost savings due to economies of scale and scope.[16]

Since 2001, a concentration process can be observed as far as alliances are concerned. Qualiflyer has ceased to exist after the demise of Swissair and Sabena, while the Wings Alliance of Northwest and KLM was absorbed by SkyTeam after the merger of KLM and Air France. Star Alliance, Oneworld and SkyTeam are the three remaining major alliances with global reach – each of them significantly influenced by European airlines.

While on the one hand airline alliances offer benefits for consumers and can enhance efficiency in the provision of air services, their impact on competition, in particular the dominance at the respective carriers' hubs could probably have negative effects on consumer welfare in the long run.[17] At the major European hubs, a monopolisation in favour of the home carriers' alliances can already be observed,[18] as traffic shares of Star Alliance at Frankfurt or SkyTeam at Paris-Roissy and Amsterdam are considerably above 60%. These traffic shares in connection with congestion problems and grandfathered allocation of slots severely constrain the contestability of markets at hub airports.

In several cases, the European Commission had put the acceptance of an alliance under the condition of freeing up slots for new entrants. The example of the Frankfurt-Kopenhagen-route shows that not in all cases competitors can be found – though even the slot problem as market entry barrier was broken. In the case of Frankfurt-Vienna a new competitor was found in Adria Airways from Slovenia; but after 2 years

[14] To clarify the terminology used herein: Even if the Commission is negotiating on behalf of the Member States with third countries, the resulting air service agreements can be considered as „bilateral", as the Community is one contracting party and the third country the other.
[15] Janda, R./Wilson, J. (2004), p. 46.
[16] Cf. Ehmer, H./Heinrichs, E. (2003), p. 141.
[17] Cf. Ehmer, H./Heinrichs, E. (2003), p. 122.
[18] Cf. Ehmer, H./Heinrichs, E. (2003), p. 138.

this carrier now flies as a Star Alliance member under a code-share agreement with Lufthansa, so the intention of the European Commission has finally not been fulfilled.

XIV.2.5. The Situation of Mergers and Acquisitions

Although airlines have shaped globalisation with their passenger and cargo services enhancing the accessibility of formerly remote areas of the planet, they themselves widely abstain from global trends like mergers and acquisitions that can be observed in other sectors. The nowadays antiquated looking rules that connect traffic rights to the nationality of air carriers have effectively impeded far-reaching changes in the industry structure to gain a higher level of efficiency on a global level. Besides that, protectionist measures out of national pride for the respective flag carrier prevented economically rational steps to change the European airline landscape. In the past, this led to the fact that European airlines had a competitive disadvantage in comparison to their counterparts from the U.S., as they could not achieve potential scale economies as well as network effects associated with mergers and acquisitions.

With the decision of the Court of Justice on 5th November 2002 and the notion of taking a European Community nationality for air carriers to an external dimension, new possibilities came up on the horizon. Although still today complicated legal structures are needed in the case of cross-border airline mergers to retain traffic rights with third countries, a shift towards mergers can be observed. A first step was the acquisition of KLM by Air France in 2004, resulting in the creation of the largest European airline, surpassing British Airways. The acquisition of SWISS by Lufthansa is the next step towards a consolidation in the European airline market.

The Commission takes a positive stance towards airline mergers in Europe. The KLM/Air France as well as the Lufthansa/SWISS mergers have been approved quickly. Already in 2001 the White Paper gave a hint that the Commission perceives the fragmented European airline structure as a disadvantage in global competition, particularly in respect to their American counterparts, where the largest European airline (British Airways) was smaller than each of the four largest American carriers.[19] With the merger of KLM and Air France the combined carrier takes the No. 3 spot in the world, while Lufthansa/SWISS will advance to No. 5, surpassing Northwest Airlines in revenue passenger kilometres.

XIV.2.6. The Ecological Dimension

In the White Paper, an emphasis is laid on environmentally sustainable development. In light of the Amsterdam Treaty and the Gothenburg Council decisions, it is envisaged to adapt the Common Transport Policy towards a sustainable transport system that shall be realised in a 30 year timeframe. The aim is to encourage users to shift the preferences towards rail, short sea shipping and inland waterways *inter alia* with the help of additional investments in these modes.

The most pressing problem concerning the sustainability of aviation is its impact on global climate change. According to the IPCC special report "Aviation and the Global Atmosphere", aviation contributed with about 3.5 per cent to the global climate change in 1992, whereas this share is continuously growing.[20] While in other sectors like energy generation, viable alternatives to fossil fuels exist, aviation is fully dependent on jet fuel as propellant for the time being.

So far, the emissions reduction efforts are limited to the technological side, as regulatory or economic measures for international aviation do not yet exist. Unfortunately, the technological developments are not able to offset the increase of emissions due to traffic growth. On a long-term average, fuel consumption

[19] Cf. Commission of the European Communities (2001), p. 21.
[20] Cf. IPCC (1999), p. 85.

per passenger kilometre is reduced by 1 to 2 per cent p. a.,[21] while traffic growth is estimated at 4 per cent.[22]

The impact of fuel taxation on domestic aviation in the USA, Japan, Norway and The Netherlands can be considered negligible as far as reductions on total emissions are concerned. The only incentive that currently works towards a reduction of GHG emissions is the airlines' rationale to save fuel, as rising fuel prices impact their commercial success. The reduction in fuel consumption automatically reduces the emissions of CO_2, as these emissions are directly linked to fuel consumption. However, these effects are offset by traffic growth and the high number of new aircraft put into service.

International aviation is exempted from the quantitative targets of the Kyoto protocol, as the parties *inter alia* could not agree on an emissions allocation method. Thus, States are not held accountable for their international aviation emissions in the UNFCCC framework, which means that they have less incentives to implement measures alone.

From time to time a discussion emerges if taxation of fuel consumed by commercial aviation could be a viable solution to reduce environmental impacts and to adjust an allegedly unfair intermodal competition. While ecological tax shifting in other sectors is used by Member States' governments for some years, international commercial aviation's fuel use has been exempted from taxation to date. Although Directive 2003/96/EC opens up the possibility to introduce taxes on fuel for commercial aviation on intra-European flights when the two Member States concerned (the countries of origin and destination of a particular flight) bilaterally agree upon the taxation, no steps in this direction can be observed.

The chances to implement measures for the reduction of emissions from aviation in the EU are by far higher than on a global level. While on a global level UNFCCC or ICAO are international organisations where a global consensus is necessary to implement rules, the EU has distinct legislative competences to act in this regard. These competences were already used for the introduction of an EU-wide emissions trading scheme (EU-ETS) for large stationary emission sources.

The willingness of the Commission to act in this regard is represented by the fact that it has conducted a consultation process for citizens and stakeholders concerning the climate change impacts of aviation in the first half of 2005. A Communication on Reducing the Climate Change Impact of Aviation has been published in September 2005, which aims to include aviation into the EU-ETS and to promote an emissions trading scheme for aviation among other instruments in international organisations.[23]

Other environmental challenges in aviation include the impacts of emissions on local air quality and noise, which is of particular concern for local residents' acceptance for airport expansion plans.

XIV.2.7. Air Transport Policy and the Role of Subsidiarity in the European Union

One of the main elements of the Treaty on European Union is the role of subsidiarity. It is a principle of all political actions within the European Union that the Member States should remain in charge, as long as they could adequately achieve the aim with the measures taken on a national level.

As the economies of the Member States become more and more intertwined, legislation on a European level is of growing importance. Stakeholder groups often call for harmonisation of competitive, environ-

[21] Cf. IPCC (1999), p. 92.
[22] Cf. Cames, M./Deuber, O. (2004), p. 9.
[23] Cf. Commission of the European Communities (2005x), p. 10.

mental or social legislation, as they perceive these should be standardised in the Common Market. The most appropriate legislative body to harmonise legislation in these areas is without doubt the EU and its institutions. This sometimes bears conflict potential when the Member States insist to retain their legislative competences, which they view as an integral part of national sovereignty.

Especially in the field of aviation the Commission follows an ambitious agenda to take the internal Community acquis to an external dimension in the relations with third countries. These actions are aimed to propagate the Common Market and to create long-term consumer benefits. It is likely that economic efficiency is enhanced and transaction costs reduced by this strategy; however, the Commission has to defend its position against various stakeholder groups which try in an attempt of rent-seeking to influence the Member States policy in order to preserve protected market structures. This is also an issue when Member States governments have a relatively broad scope of discretion to transpose Directives into national law.

XIV.3. The Aviation-specific Measures in an Overview

For the following analysis, it is adhered to the systematic established by the INDIC study. 11 measures specifically related to aviation have been identified, 10 of them are included in the policy package "Controlling the growth in air transport", while one measure belongs to the policy package "Recognising the rights and obligations of users". Two measures formerly not part of the INDIC study have been added: measure 77 - Introduction of kerosene taxation and measure 78: Introduction of differential en route air navigation charges, coming to a total of 13 aviation-specific measures that will be analysed herein.

Table 1: List of aviation-related White Paper measures contained in WP5.4

Policy Package	Measure	INDIC No.	Included in the White Paper
Controlling the growth in air transport	Creation of the Single European Sky	17	×
	Harmonising technical requirements in the field of civil aviation and establishing a European Aviation Safety Agency	18	×
	Air transport insurance requirements	19	
	Airport Charges	20	×
	Slot allocation on Community airports	21	×
	Community framework for airport noise management	22	×
	Protection against subsidisation and unfair pricing practices in the supply of air services from third countries	23	
	Safety of third country aircraft	24	×
	Air service agreements with third countries	25	×
	Airport capacity expansion	26	×
	Introduction of kerosene taxation	77	×
	Introduction of differential en route air navigation charges	78	×
Recognising the rights and obligations of users	Compensation of air passengers	65	×

Source: Compiled by the authors.

Main aspects of the measures analysed are infrastructure development and use for airports as well as airways (airport charges, capacity expansion, Single European Sky, slot allocation), aviation safety (establishment of EASA, safety of third country aircraft), the environment (airport charges, noise management) and competitive issues (subsidisation of third country's air services, bilateral air services agreements).

Measures 19 (insurance requirements) and 23 (protection against subsidisation) are not included in the White Paper, as these subjects came on the Agenda only after the events of September 11, 2001.

XIV.4. The Specific Measures

XIV.4.1. Measure 17: Creation of the Single European Sky

XIV.4.1.1. Description

The creation of the Single European Sky (SES) was proposed by the Commission in 1999.[24] It had been identified that the over-fragmentation of European airspace contributed to delays and high costs for users. The delays were estimated to result in economic damages of over € 5bn[25] with the continuation of growth in aviation tending to make these impacts worse in future.

The airspace in the European Union is organised according to the principles of the Chicago Convention. With few exceptions, states provide air navigation services over their own territory, as this is part of their sovereign rights.

The principle to shape Flight Information Regions (FIRs) according to national borders instead of traffic flows is associated with several disadvantages. In comparison to the USA more en-route traffic control centres exist and the FIRs they are controlling are much smaller. This leads to efficiency losses and high costs, as with many small countries in Europe no economies of scale can be realised, resulting in a competitive disadvantage in comparison to the USA.[26]

The efforts to overcome this handicap have been limited in success in the past, as states were reluctant to cooperate or transfer competence to another country's air navigation service provider (ANSP), although in one instance (Maastricht Upper Area Control Centre) Belgium, Germany, Luxemburg and The Netherlands cooperate successfully for over 30 years. Other initiatives of cooperative airspace management have also been undertaken before the SES has been implemented, like the Nordic UAC or CEATS.[27] Although it is too early to say if they are successful, it is evident that the SES initiative also facilitates these projects.

One reason for the reluctance of states to cooperate are the needs of the military. Although the airspace in Europe is already densely populated with traffic, restricted zones reserved for the military further reduce airspace capacity. While the need for maintaining defence capabilities is generally accepted, the cooperation between civil and military air traffic control needed to be improved.

The ANSP landscape throughout Europe has become more diverse in recent years. In the past, ANSPs were organised as a public authority. In the meantime, most countries corporatised their national ANSPs. The UK for instance has even partially privatised its national ANSP, while Germany is planning to do that shortly.

With regard to efficient airspace organisation, in some aspects the U.S. could serve as a benchmark: In the U.S., about twice as many movements as in Europe take place, yet the absolute number of controllers is roughly the same. For a comparable size of airspace, Europe has almost three times as many en route traf-

[24] Cf. Commission of the European Communities (1999), p. 2.

[25] Cf. Commission of the European Communities (1999), p. 2. Others come closer to €10bn/year, cf. Ewers, H.-J./Tegner, H. (2002), p. 2. EUROCONTROL estimates the direct costs of ATFM delays for 2003 and 2004 at about €800m each, Cf. EUROCONTROL (2004), p. 29.

[26] Somewhat contradictory are the actual per-unit-costs in countries of different size: Large countries like UK and Germany are among the countries with highest unit costs, while comparably small countries like Ireland and Finland are among the countries with lowest per-unit-costs (cf. EUROCONTROL 2004, pp. 75ff.). This clearly indicates that not only size is an important factor affecting costs, but also other factors like cost of living and traffic density.

[27] At least the NUAC initiative's success is severely reduced as Finland and Norway bailed out already in the first evaluation period, leaving only two participants, Denmark and Sweden.

fic control centres as the U.S. The average cost of airspace usage per flight in Europe is 75% higher than in the U.S.[28]

Table 2: Comparison of air traffic control in Europe and the U.S.

	EUROCONTROL Area	US
Number of civil en-route ANSPs	26	1
Number of en-route centres	58	21 Source: FAA
En-route sector working positions	447	771 Source: FAA
Average number of sectors per en-route centre	7.7	36.7
Average controlled airspace by en-route centre (surface coverage)	180 400 km^2	468 000 km^2

Source: EUROCONTROL (2001), p. 48.

XIV.4.1.2. Objectives

With the creation of the SES the Commission tries to achieve several objectives.

First and foremost, it is in intended to reduce delays through increased air traffic management (ATM) capacities, resulting in improved economic efficiency and a reduction of the ecological impacts of aviation.

Second, a better cooperation between civil and military authorities shall be realised with the flexible use of military airspace for civil use.

Third, it is aimed to create a pan-European labour market for air traffic controllers. To achieve this objective, it is intended to introduce a Europe-wide accepted licence. This measure should tackle the shortage of controllers, which can be observed from time to time in the Member States.

The creation of the SES is supported by the harmonisation of technology used in ATM throughout Europe. This project called SESAME is intended to have a time span of more than 15 years up to 2020.

Additionally it can be assumed that the implementation of the SES is connected with increases in safety. The fragmented air traffic control-(ATC)-system poses safety risks, as it was painfully shown in the Lake Constance accident in 2002, when communication problems between German and Swiss control centres contributed to an in-flight collision resulting in 71 fatalities.

XIV.4.1.3. External Developments since 2001

The reduction of traffic in the aftermath of the events of September 11, 2001, the SARS epidemic and the Gulf war in 2003 eased the problems of delays in European airspace temporarily[29], yet growth in aviation has returned in 2004 and so have delays.[30]

[28] Although also in the U.S. the ATC service has several problems, e. g. deficits in investments or high workload for controllers, cf. Poole Jr., R. W. (n.d.).

Low-cost-carriers are an important factor in overall aviation growth. While these airlines often use secondary airports with little to no congestion problems, their increased impact on en route airspace congestion will have to be monitored, especially in the densely used corridors over south-eastern England, France and Germany.

Alliances had as one consequence a consolidation on certain routes flying with a higher load factor and less frequencies by individual carriers, as the alliance partners could sell seats on every flight operated by the alliance. Without alliances and other forms of cooperation the growth of movements would have been higher. However, these trends are only a postponement of the problems.

XIV.4.1.4. Legislative Achievements

The Commission felt it had limited knowledge in the field of air traffic management. It therefore set up a High Level Commission containing delegates of stakeholders who worked out recommendations and a social dialogue consultation process that included the expertise of air traffic controllers concerned with the proposal.[31]

The EU implemented the recommendations of the High Level Commission on the SES as Regulations. The Regulations that became effective on April 20, 2004 in particular are:

1. Regulation (EC) No 549/2004 - Framework Regulation

The Framework Regulation outlines the general objectives of the SES initiative. It contains the definitions of the terms used in the subsequent Regulations and the task for the Member States to create national supervisory authorities independent from the ANSP. Additionally, the creation of a Single European Sky Committee in line with the procedure of comitology is envisaged.

2. Regulation (EC) No 550/2004 - Service Provision Regulation

The Service Provision Regulation defines the provision of air navigation services within the SES, the certification of air navigation service providers, the civil-military cooperation and charging schemes.

3. Regulation (EC) No 551/2004 - Airspace Regulation

The Airspace Regulation defines what the harmonised European airspace will look like and in particular introduces the concept of functional airspace blocks (FABs), which are defined rather by efficiency criteria and not national borders, as it was the case in the past. Additionally, it gives rules for the flexible use of airspace, i.e. airspace used temporarily by the armed forces.

4. Regulation (EC) No 552/2004 - Interoperability Regulation

The Interoperability Regulation gives guidance on the requirements for interoperability between different ATC-systems to form an infrastructure system compatible throughout Europe.

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[29] According to EUROCONTROL, in 2000 roughly 27% of all flights had an arrival delay of over 15 minutes, in 2003, this number had decreased to about 17%. In 2000, over 40% were attributable to ATFM, in 2003 only 20%, cf. EUROCONTROL (2004), p. 29.

[30] Cf. AEA (2005a). According to the latest EUROCONTROL performance review report (PRR 8, 2005), en-route ATFM delays in 2004 remained on the low level of 2003 with 1.2 minutes of delay on average over all flights, cf. EUROCONTROL (2005), p. 27.

[31] Cf. Commission of the European Communities (1999), pp. 6f.

In order to facilitate the implementation process of the SES, the EU acceded to EUROCONTROL in 2002. In the institutional context, this step must be seen as very important. EUROCONTROL has technical expertise in the field of air traffic management and the EU has legislative power in the field of the Common Transport Policy. Therefore, both actors complement each other.

The funding of aeronautical research projects is planned to have a special priority under the Trans-European Networks - Transport (TEN-T) programme from 2006-2011. The development of the SES master plan was supported with € 14m; the creation of CEATS was supported with € 4m in 2004 and NUAC with € 7.8m in 2003 by the TEN-T programme.[32] On a technical level, the SESAME project sets the basis for infrastructure modernisation. It is also funded under TEN-T.

XIV.4.1.5. Institutional Impacts

With regard to the anticipated growth in aviation, the idea to achieve a higher degree of efficiency for the European airspace seems advisable and necessary. The new institutional framework contains a clear view on how to achieve the objectives outlined in the White Paper.

However, some legitimate questions arise: How strong is the new institutional framework? Will the Member States adhere to the provisions made? Why are economic incentives explicitly excluded from the Regulations?

The White Paper calls for a regulation concerning the cooperation between civil and military air traffic control organisations to achieve a flexible use of airspace. The Regulation now in place (Regulation (EC) No 551/2004) is regarded by many as too weak.[33] Civil-military cooperation is encouraged, but it is not regulated in any way. Eventually, cooperation is based exclusively on the goodwill of the Member States' armed forces, although the Member States have declared that they are willing to enhance civil-military cooperation.[34]

The cross-border creation of functional airspace blocks (FABs) poses another set of possible difficulties. To set up a FAB, a Member State hands over competences in the air traffic management of its own airspace to an air navigation service provider (ANSP) from a neighbouring country. In the past, this was a rare exception for instance in the Maastricht Upper Area Control Centre (MUAC) – covering the north western parts of Germany, Luxembourg, Belgium and The Netherlands or a small area in southern Germany which is controlled by Skyguide from Switzerland.

The current institutional framework leaves the creation of cross border FABs to the Member States concerned. Although Eurocontrol has the experience (acquired during the development of Maastricht UAC and CEATS) and the EU with its legislative competences and political weight the ability to act as a potentially powerful institutional pair in the creation of cross border FABs, the initiative to act must still come from the Member States concerned.[35] As the creation of FABs is connected with the renouncement of sovereign rights, the incentives to do so might be weak. Although it is intended by the Commission to create stronger regulations (the so-called "top down approach") if no satisfying progress in the creation of FABs can be observed in the next five years,[36] this might be difficult to achieve, as it would affect the sovereign rights of the Member States.

[32] Cf. DG TREN (2005a).
[33] Cf. Anon (2003).
[34] Cf. Member States of the European Union (2004).
[35] Cf. Anon (2003).
[36] Cf. CAA (2004).

Even when Member States agree to create a FAB, it is feared that not the most efficient ANSP will gain control over the FAB as it possibly would with tendering, but that ANSP, which has best links to politics – most likely the respective ANSP which is at least partially state-owned. The creation of FABs is accompanied by interstate treaties, potentially leading to "tit-for-tat" service provisioning in the respective countries. Collusive behaviour of the affected ANSPs could further diminish efficiency gain potentials.

Critics argue that CEATS as one form of a FAB is a first example of bureaucratic efficiency losses accompanied with international cooperation in the field of ATM, as the organisation is spread over four locations in four different participating countries.

In light of the anticipation of challenges and problems in the implementation of FABs, the airspace regulation contains the Commission's comment to review the progress by 2009.

Although it is the objective to increase efficiency of the ATM-system, no specific references are made either in the White Paper or in the Commission's more recent policy towards a reform of ANSP corporate structures or the introduction of economic incentives. Instead, Regulation (EC) No 550/2004 explicitly denies the economic nature of the provision of air traffic services and accentuates the aspects of the exercise of public authority: "The provision of air traffic services, as envisaged by this Regulation, is connected with the exercise of the powers of a public authority, which are not of an economic nature justifying the application of the Treaty rules of competition."[37]

XIV.4.1.6. Social Impacts

Article 5 of Regulation (EC) No 550/2004 outlines the proposal to create a legislation concerning the Community-wide licensing of air traffic controllers. This legislation will be an important step to create a pan-European labour market for air traffic controllers. Mutual recognition of licenses will improve efficiency of the European air transport system, as the availability of controllers will be enhanced and a convergence of wages could be expected. Such legislation therefore would promote the objective of the freedom of movement for workers within the Community as stated in Article 39 of the Treaty establishing the European Community.

The intention to realise a pan-European labour market for air traffic controllers has to be seen in a long-term context. Even if the mutual recognition of licenses is established, the air traffic controllers' flexibility is restricted by the use of different technology in different ANSP organisations. This problem will be reduced with the implementation of the SESAME programme that is aimed at harmonising ATM infrastructure.

A negative aspect from the social perspective could be an increase in workload for air traffic controllers in connection with the aim to increase efficiency, i.e. to handle the same number of movements with fewer controllers. This problem was also identified during the development of the SES initiative and it should be tackled with the introduction of more sophisticated IT-based systems, which could help to assist controllers and partially automatise the workflow.

An important point in connection with the introduction of functional airspace blocks will be a reduction of cockpit workload for the pilots, which will also have positive impacts on situational awareness and safety.

[37] Cf. Regulation (EC) No 550/2004, Recital 5.

XIV.4.1.7. Economic and Ecological Impacts

A variety of economic and ecological impacts are associated with the implementation of the Single European Sky.

In the short and medium term, the realisation of interoperability will cause a high expenditure for investments in new technology. This cost primarily affects the ANSPs and the airspace users, which have to bear the lion share of the costs for the implementation of an IT-network that is compatible throughout Europe.

In the long-term, it is envisaged that efficiency gains in ATM, achieved for instance by the use of standardised hardware and merging of control centres will result in cost savings for ANSPs that will be passed on to air carriers in the form of lower en-route charges. Besides these cost reductions, airlines hope to benefit from delay reductions and higher airspace capacity. Finally, the cost savings achieved in the ATM system and by airlines through improved aircraft usability and a reduction in fuel consumption could be passed on to passengers, resulting in lower airfares.

It is assumed that the first functional airspace block, intended to be operative in 2008 or 2009 between Ireland and the United Kingdom will generate cost savings for the ANSPs in a range of € 7m-10m and for the airlines between € 10m-30m.[38]

Overall, the savings resulting from the SES initiative are estimated at € 400m annually for increased flight efficiency and € 1bn by 2010 in lower operating cost[39], with a net present value of € 4.191bn considering the savings achievable by 2025.

It is likely that the increased airspace capacity will soon be filled with additional flights. This development would offset the savings in fuel consumption for individual flights achieved due to an increase in efficiency. As such it contravenes the White Paper's objectives of a modal split shift and improving sustainability of air transport. But this shall not be interpreted as a shortcoming of the SES initiative as such, which is primarily intended to achieve efficiency gains in airspace management and not environmental objectives. Rather it shall be clear that the implementation of one or more additional independent instrument(s) addressed at the environmental impacts of aviation is inevitable. In economics, this is known as the Tinbergen Principle of Public Policy Analysis, which says that as many independent instruments are needed as independent political objectives exist.[40]

XIV.4.1.8. Changes needed to achieve the White Paper's Objectives

Although the Regulations in place (in particular Regulation (EC) No 550/2004) deny the economic nature of ATC services and hence the application of the rules for the Common Market, the Commission should consider to reassess this position in order to achieve additional efficiency gains and cost reductions. A trend towards corporatisation and privatisation of ANSPs can be observed in Europe and recent studies show the possibilities to use economic instruments in the provision of ATM-systems and -services without compromising safety.[41] However it is somewhat probable that Member States may intervene to protect their state-owned ANSPs from competition. This could prove true in particular ahead of capital privatisation in an effort to maximise firm value.

[38] Cf. Learmount, D. (2005).
[39] Cf. Steer Davies Gleeve (2004), p. 16.
[40] Cf. Tinbergen, J. (1972), pp. 98f., cited by Luckenbach, H. (2000), pp. 358f.
[41] Cf. Ewers, H.-J./Tegner, H. (2002), Steer Davies Gleeve (2004) or Poole Jr, R. W./Butler, V. (2001).

The following policy options cover the upper airspace above 28,500 feet (FL285), which is included in the SES as well as the lower airspace, which is not yet included in the SES-Regulations.

Competition for the market

There are convincing clues that for reasons of safety and transaction costs the right of disposal for the airspace of a defined region with regards to the provision of air traffic control can only be allocated to a single service provider, eventually resulting in a natural monopoly.[42] Therefore, as the first-best solution (competition in the market) cannot be realised, a self-evident second-best approach is competition for the market.

It is argued that tendering of functional airspace blocks in connection with ex-ante agreed service levels is a solution to increase efficiency in this regard.[43] Although Regulation (EC) No 550/2004 Art. 7 Para. 8 (validity of certification throughout the EU) theoretically provides the opportunity for an ANSP to offer its services in other Member States, Art. 8 does not give any guidance on the award procedure. In fact, Art. 8, Para. 3 of Regulation (EC) No 550/2004 says: „Member States have discretionary powers in choosing a service provider (...)".

The designation process outlined in Art. 8 does not prohibit the preferential treatment of incumbents. Therefore, it is effectively possible for each Member State to exclude foreign service providers – which has particular importance when considering that currently many European ANSPs are at least partially state-owned. Hence, if the Member States designate only their own state-owned ANSPs, a pan-European market for air traffic control companies will not be able to develop under the new Regulation.[44] This contradicts the Common Market philosophy forming one of the bases of the European Community. Without pressure from potential competitors, national ANSPs have only limited incentives to increase efficiency.

Essential facilities doctrine or unbundling of infrastructure and service provision

If a working competition for the market of the provision of air traffic services shall be established, a Regulation for the access of newcomers to CNS-infrastructure which cannot be economically feasibly duplicated must be designed.

One possibility to regulate market access is the essential facilities doctrine, which in fact leaves today's highly integrated infrastructure operators/ANSPs mostly untouched, but prescribes infrastructure access by third parties.[45]

The application of the essential facilities doctrine is usually associated with several problems, as it is likely for an integrated infrastructure operator/service provider to make it as difficult as possible for competing service providers to use his infrastructure – a behaviour frequently observed in the run of liberalisation of network industries and commonly known as 3Ds: deny, delay, degrade. For an incumbent this is a rather reasonable behaviour, as he will defend his market share by all possible means. Hence, for the long-term an unbundling of currently highly integrated air traffic control organisations[46] in connection with tendering for the provision of services could be considered.

Change from cost-plus to an incentive-based regulation

[42] Cf. Ewers, H.-J./Tegner, H. (2002), p. 13.
[43] Cf. Ewers, H.-J./Tegner, H. (2002), p. 28.
[44] As long as no regulation concerning the designation/award procedure is implemented, it seems logical that the state will designate its own ANSP.
[45] Cf. Ewers, H.-J./Tegner, H. (2002), pp. 40f.
[46] Today ANSPs usually develop, install and operate the infrastructure and provide the services that depend on this infrastructure.

Regulation (EC) No 550/2004 somewhat contradicts itself, as in Art. 15 Para. 1 it asks for basing the charging scheme on costs incurred, but also in Para. 3 for incentives to increase efficiency and capacity. In a pure form, cost-plus regulation and incentive-based regulations are mutually exclusive concepts, although one must admit that in reality costs will also be considered to determine a regulated price in an incentive-based regime. Under a cost-plus regulation, the service provider will have only little incentives to achieve a higher level of productivity, as it could pass any cost increases on to the users. In an incentive based RPI-X-regime the service provider will bear a higher risk as well as having strong incentives to become more productive. The en-route charging system currently employed by EUROCONTROL allows both regimes.[47] If a regulation in the field of charging is intended, it must take into account that the costs of the provision of ATC infrastructure and services are mostly fixed, while the revenues are highly variable due to business cycles in traffic.

Reduction of agency problems

The relation between the provision of air traffic infrastructure and services and their prime users – commercial aviation – resembles a classic agency problem. Air carriers have a genuine interest in an efficient airspace management, as it directly influences their operational performance and hence their financial result. However, they do not offer air navigation services themselves, but make use of the ANSPs as their "agents". The ANSPs in contrast – when working under a cost-plus regulation – do not have strong incentives to increase efficiency, as no additional profits correspond with it.

Article 10 of the Framework Regulation contains the provision to involve stakeholders in the process of the creation of the SES. This could be a first step to reduce agency problems on a European level. While it is not part of the competences of the EU to prescribe it, a strong conceptual solution on a national level could be the sale of ANSPs to airlines, as in the UK, where the seven largest airlines hold a 42% stake in the ANSP NATS. In this case, airlines receive a more direct influence on the business policy of the air traffic management, which could have positive impacts on capacity and efficiency increases.

Working towards "free-flight"

Free flight is a revolutionary concept that makes some functions of air traffic control obsolete, as operators are free to choose their routing and the aircraft are linked during flight with communication systems that automatically provide traffic and collision avoidance advisories. While still in its infancy, free flight has the potential to change the world of commercial aviation radically, as aircraft would not be forced to stay within air corridors defined by ATC. Therefore, free flight would enhance airspace capacity, allow more direct routings and reduce fuel consumption. The initiative to introduce a Mediterranean Free Flight Area has been supported by the TEN-T-program with € 3.5m in 2000.[48] Taking into account the potential free flight has, it could be considered to increase the support in its development.

EASA as pan-European Supervisory Agency for ANSPs

Article 4 of Regulation (EC) No 549/2004 introduced the concept of national supervisory bodies for national ANSPs, which must be functionally separated from the ANSP. With the establishment of EASA and the subsequent takeover of specific tasks in supervision in aviation, it is proposed that EASA takes over the supervision over ATC. This could be a further step towards an integrated aviation safety authority and reduce duplication and redundancies on the national level, resulting in cost reductions. Handing over these competences to EASA may also reduce the potential of discrimination for market access of

[47] Cf. Steer Davies Gleeve (2004), p. xi.
[48] Cf. DG TREN (2005a).

non-domestic ANSPs in case competition for the market should finally be implemented in future. Therefore it should be analysed if the oversight function could also be extended to economic aspects, such as the administration of revenue cap schemes. The development of EASA is described in detail in chapter XIV.4.2.

XIV.4.1.9. How far is this a Role of the EU or of other Levels of Aviation Policy

The action of the EU in the field of European airspace harmonisation is part of the Common Transport Policy. Therefore it falls under the exclusive legislation of the EU, although also the Member States are directly concerned, as the Regulations have an impact on their sovereign right to control their national airspace. The legislative process took more than 3 years, due to the provisions made in Art. 251 of the Treaty of the EC. Hence the Regulations provide guidance, but do not prescribe the Member States how to exercise their sovereign rights.

XIV.4.1.10. Assessment

The Commission's central objective in the field of air traffic management is „to overcome the current over-fragmentation of the air traffic management system"[49]. A first step towards a more efficient system in the provision of air navigation services has been made with the introduction of the concept of the Single European Sky. Yet the legal framework alone does not make the airspace more efficient. Within the SES initiative, potential problems could emerge as far as international cooperation in the creation of functional airspace blocks and the civil-military cooperation are concerned.

So far not tackled by the Commission, but very important for the creation of an efficient ATC-system is the implementation of viable economic incentives. One possibility to create incentives could be the tendering of airspace blocks. Subsequently, rules on market access would be needed in order to create a Common Market for the provision of ATC services. Privatisation of state owned ANSPs could help to reduce agency problems, although this does not fall into the competences of the EU. A market-driven pan-European integration of ANSPs by the means of mergers and acquisitions could be a promising strategy to increase efficiency, reduce complexity and lower costs for airlines and passengers. Prerequisite for this strategy is the cooperation of the Member States.

The ATC certificate valid all over the EU theoretically makes a consolidation of the ATC landscape possible, although it is likely that Member States are reluctant to sell national ANSPs to foreign owners. The privatisation of ANSPs must not mean the absence of regulation in the ATC market. As at least the provision of CNS-infrastructure can be classified as a natural monopoly, regulation is necessary to ensure fair and efficient competition.

Besides the institutional challenges presented above, another challenge poses the capital investment needed to implement a harmonised airspace management infrastructure. The full potential of the SES can only be reached with a standardised technological platform. Therefore it is recommended to speed-up the SESAME project.

Assessment: On track – on the legislative side, the measure has been implemented to a large extent. Yet it is too early to tell if the current legislation is sufficient to achieve the objectives of the White Paper entirely.

[49] Cf. Commission of the European Communities (2001), p. 36.

XIV.4.2. Measure 18: Harmonising technical Requirements in the Field of Civil Aviation and establishing a European Aviation Safety Agency (EASA)

XIV.4.2.1. Description

In the international aviation policy context, it is customary that ICAO sets standards and recommendations (SARPs), while states are the rulemaking body as far as safety is concerned. Due to the subsidiarity principle the legal power to transform SARPs into law remains on the national state level.

With its high significance when it comes to regulations in the field of aviation, safety therefore is a top priority of European Common Transport Policy. The general level of safety in Europe is relatively high, although the White Paper addresses the potential to increase safety by means of harmonisation of standards throughout the EU. The subsidiary principle of implementation of aviation-related law on a national level is seen as an obstacle to maintain a high level of safety and to create an integrated market for aeronautical products and staff.

Table 3 shows accidents in commercial aviation within the EU or with EU-carriers involved (only accidents with fixed-wing aircraft and with fatalities) during the period 2001 – 2005. As Switzerland is closely connected to the European Union's aviation policy, it has been included as well.

Table 3: Commercial Aviation Accidents within EU airspace and/or involving EU carriers 2001-2005

Date	Airline	Aircraft	Place	Fatalities
27.02.2001	Loganair	Shorts 360-300	Granton, Edinburgh, Scotland	2
29.08.2001	Binter Mediterráneo	CASA 235-200	Málaga, Spain	4
08.10.2001	Scandinavian Airlines (SAS)	McDonnell Douglas MD-87	Milan, Italy - Linate Airport	122
10.10.2001	Flight Line	Swearingen 226 Merlin IVA	Mediterranean Sea (Spain)	10
24.11.2001	Crossair	Avro RJ100	Zurich, Switzerland	24
14.01.2002	Ibertrans Aérea	Embraer 120RT Brasilia	Zaldivar, Spain	3
12.04.2002	Tadair	Swearingen 226 Metroliner III	Palma de Mallorca, Spain	2
01.07.2002	DHL Aviation	Boeing 757-23APF	Ueberlingen, Germany	2
01.07.2002	Bashkirian Airlines	Tupolev TU-154M	Ueberlingen, Germany	69
06.11.2002	Luxair	Fokker F-50	Niederanven, Luxembourg	20
22.06.2003	Brit Air (Air France)	Bombardier Canadair CRJ-100	Brest, France	1
27.01.2005	Farnair Hungary	Let 410UVP	Iasi, Romania	2
06.08.2005	Tuninter	ATR-72-202	Mediterranean Sea (Italy)	14
14.08.2005	Helios Airways	Boeing 737-300	Grammatikos, Greece	121

Source: AirDisaster.com (2005).

Deficits in the air traffic control system contributed among other factors to two severe events (the accident of the SAS flight departing Milan Linate airport and the inflight collision over Lake Constance involving aircraft from Bashkirian Airlines and integrator DHL).

Although every single accident resulting in loss of life or serious injuries is a tragedy in itself, overall aviation is a very safe mode of transport. Numbers compiled by EUROCONTROL show that aviation safety in Europe is up to the highest standards worldwide. The measurement "hull loss rate per million departures" shows with 0.4 the same value for Europe with its "fragmented" safety governance structure as for the U.S., with its integrated structure.[50]

The efforts to create harmonised aviation safety standards on a European level date back to the time when European nations started to cooperate to build commercial aircraft. Since 1970, European aviation au-

[50] Merckx, E. (2004), p. 5.

thorities cooperated in the form of the Joint Aviation Authorities (JAA), yet this entity only created recommendations and had no legal means to enforce them. JAA dates back to an initiative of ECAC; therefore it is not associated with the framework of the European Community, which is another drawback in aspects concerning harmonised legislation. On the one hand, JAA had a broader scope than the European Community. But on the other hand, all recommendations had to be implemented separately as an EU Regulation or within the national legislative process. This process was rather cumbersome and depended up to some extent on the goodwill of participating authorities.[51]

In the light of these problems, the Commission took over responsibility to create common rules in the field of airworthiness and licensing of personnel and issued in 1996 the first recommendation to create a European Safety Authority.

In 2000, the Commission published a communication concerning the creation of EASA as an agency.[52] The Federal Aviation Administration in the USA served as a benchmark for a single integrated organisation responsible *inter alia* for all aspects of certification of aeronautical equipment, licensing of personnel and environmental regulations.

XIV.4.2.2. Objectives

In order to create and maintain a high and uniform level of safety in aviation in Europe the White Paper envisaged the creation of a European Air Safety Authority.[53] Additionally, there are further objectives connected with the harmonisation of air safety regulations throughout Europe.

A centralised certification process for aeronautical products, such as engines, airframes, parts and appliances will facilitate trade in these goods and therefore foster the Common Market in the Community. The same applies to pan-European acceptance of licences of maintenance staff and cockpit crews.

Overall, centralisation and harmonisation is intended to enhance efficiency and reduce duplication of work and redundancies for national authorities. The cost savings achieved shall ultimately be passed on to the European aeronautical industry, enhancing its global competitiveness.

XIV.4.2.3. Legislative Achievements

After a legislative process of more than two years, Regulation (EC) No 1592/2002 came into force on 28th September, 2002. This regulation contains in detail the provisions for the creation of EASA, its competences and operational procedures. It is also referred to as "the basic regulation". In a first step EASA has received the competence to act in the field of airworthiness and environmental compatibility of aeronautical products.

Subsequently, two additional Regulations have come into force. Regulation (EC) No 1702/2003 lays down the implementation of rules for airworthiness and environmental certification and the certification of design and production organisations. As an annex it contains JAR Part 21 to become EASA Part 21. Regulation (EC) No 2042/2003 contains provisions for the continuing airworthiness of aircraft and parts. As an annex it contains JAR Part M to become EASA Part M.

EASA is operational since 28th September 2003. It has a strong legal basis and drafts rules applicable to the whole EU plus Switzerland, Norway and Iceland, whereas the JAA only made recommendations to be

[51] Cf. EUROCONTROL (2004b), p. 54f.
[52] Cf. Commission of the European Communities (2000).
[53] Cf. Commission of the European Communities (2001), p. 40.

formalised by the national aviation authorities. EASA is considered as a modern and strong regulating agency.[54]

XIV.4.2.4. Institutional Impacts

The measure resulted in the creation of a new agency (EASA), which is gradually taking over responsibilities from the JAA and national aviation authorities. In fact, many procedures that have proven successful in the context of JAA have been taken over for EASA.

In many aspects, the EASA framework looks like a codification under European law of what has been an international contract between European states to create JAA. The new institutional arrangement has the advantage that EASA is equipped with executive powers to act faster than JAA could do. Finally, the Commission admitted that decisions by EASA have a legally binding quality.[55]

To make EASA a "one-stop-shop" for all matters concerning the certification of aeronautical products, procedures, licensing of personnel etc., it is necessary that Member States surrender some of their sovereign rights in this field.

XIV.4.2.5. Economic Impacts

An economic analysis of the future effects on aviation safety is rather problematic, because it is difficult to compare the actual results with a "baseline"/"what if" scenario. However, it must be clear that the goal of a higher safety level in aviation is in general a more important objective for the society as a whole than merely enhancing economic efficiency. Therefore, if the implementation of EASA increases the safety level, even cost increases could be accepted.

If one compares the effects of the fragmented European supervision, certification and licensing system that prevailed in the past with the integrated system in the USA, one comes to the conclusion that there was no significant negative impact on the performance in the field of aviation safety in Europe. Therefore it is doubtful that the creation of EASA was necessary to maintain a high standard of aviation safety.

However, harmonised and simplified procedures should reduce transaction costs for manufacturers and operators of aeronautical equipment and enhance their global competitiveness. A quantitative analysis of the transaction costs saved by manufacturers and operators in comparison to the costs incurred with the creation and ongoing operation of the new administrative entity could illustrate the overall economic effects of the measure. Not only the manufacturers and operators benefit from a reduction in transaction costs, but also the civil aviation authorities throughout the Community. These cost savings will most likely be realised in the long run, as in the short run, new costs of setting up EASA have to be borne at first.

In the past, the persistence of bureaucratic organisations could be observed, even in case the original task of the respective organisation has become obsolete. In the case of EASA, subsequently competences are transferred from the civil aviation authorities of the Member States to EASA. The question remains if Member States are willing and able to reduce staffing levels to generate cost savings.

In a future perspective, an expansion of EASA's competences into the fields of personnel licensing and supervision of safety rules for airports and air traffic control could further reduce costs and redundancies on the national level. It is likely that the new staff needed for to realise these objectives within EASA will

[54] Cf. Stiehl, U.-M. (2004), p. 329.
[55] Cf. Stiehl, U.-M. (2004), p. 328.

come directly out of the Member States' administrations, therefore minimising the social impacts of lay-offs.

XIV.4.2.6. How far is this a Role of the EU or of other Levels of Aviation Policy

As already stated as introductory remark, it is customary to international law that the nation states are acting as rulemaking body for regulations in the field of certificates and licenses. The general framework of standards and recommendations developed under the auspices of ICAO is not directly applicable as effective law.

The cooperation of national aviation authorities in the form of JAA was in some aspects not satisfactory. Since JAA only created recommendations and not legally binding regulations, it was difficult to create a homogeneous framework for the certification of aeronautical equipment and licensing of personnel. As it is rather difficult to conceive a successful solution on a subsidiary level, the steps taken by the Commission seem to be appropriate to achieve the objectives. If this can be combined with the positive economic effects, the subsidiary level will lose importance in the long run.

XIV.4.2.7. Assessment

As far as the implementation of EASA is concerned, the White Paper's objective has been achieved to a high degree. EASA will gradually take over more responsibilities; this could cause the need to create some additional legislation, as competences from the Member States will have to be transferred to EASA.

Assessment: On track – measure has been implemented.

XIV.4.3. Measure 19: Air Transport Insurance Requirements

XIV.4.3.1. Description

This measure is not mentioned in the White Paper, as the Commission identified the need for air transport insurance requirements only after the events of September 11, 2001. The terrorist attacks in the U.S. made it obvious that insurance levels needed to be on a considerable high level to cover the damages potentially caused to passengers, baggage, cargo and third parties.

Up to 2000, insurance levels in Europe were highly different. While some countries, like Germany had already before the year 2000 relatively high minimum insurance levels for air transport operations, others had not imposed minimum levels. This was in accordance with Council Regulation (EEC) No 2407/92, which prescribed insurance, but did not define minimum coverage levels.[56]

Of particular importance was insurance coverage for third party damages, which on an international level is governed by the Rome Convention of 1952.[57] However, all in all, only 47 states (of which 11 are Member States of the Community) are signatories of this convention and the insurance levels are relatively low (e. g. less than € 50m for aircraft weighing 50t).[58]

[56] In fact, Council Regulation (EEC) No 2407/92 only said that it should be ensured that „air carriers are sufficiently insured in respect of liability risks".
[57] Cf. Rome Convention (1952).
[58] Cf. Luftrecht Online (2005).

Although the Member States of ECAC agreed in 2000 on minimum insurance levels, the limits set in Resolution ECAC/25-1 were considered as too low under the new circumstances of terrorist threats.[59]

In the aftermath of September 11, 2001, insurance companies cancelled the third-party war risk cover which threatened to ground civil aviation operations. In many cases, states stepped in to cover war-risks temporarily. These steps were authorised by the Commission with regard to Article 87 (2) b of the Treaty establishing the European Community, where state aids could be granted due to exceptional circumstances. Later, the insurers reduced third-party war risk coverage in their standard contracts to $ 50m with the clause to cancel it on short notice. Higher coverage was available; however, only from a limited number of insurers and at high premiums.

As the legal basis for insurance coverage was different throughout the Member States, competitive distortions were about to arise: While the standard insurance contract was sufficient for carriers receiving its operating license from a Member State without a defined minimum coverage, carriers which were registered in a Member State with a prescribed minimum coverage higher than $ 50m had to rely on governmental guarantees or had to pay higher premiums for the additional coverage.

XIV.4.3.2. Objectives

The main objective of the creation of minimum insurance requirements for all air carriers operating in the EU for passengers, baggage, cargo and third party damages was to ensure fair competition and to facilitate the return to a market regime for air transport insurance after the disturbances of September 11, 2001.[60] Additionally, under the new circumstances of terrorist threats and regarding the potential economic damages caused by civil aircraft disasters, the minimum insurance levels proposed by ECAC in 2000 were raised almost fivefold. The new Regulation does not only affect commercial aircraft operators, but also private operators, as these were not obliged in all Member States to hold a third party damage insurance.

XIV.4.3.3. Legislative Achievements

Regulation (EC) No 785/2004 entered into force on 30th April 2005. As it is a Regulation, it automatically becomes binding law in all Member States. The Regulation contains in detail the required minimum insurance coverage for third party damages, passengers baggage and cargo. The Member States are made responsible to check aircraft operators' compliance with the Regulation.

XIV.4.3.4. Institutional and Economic Impacts

The new Regulation should ensure fair competition between air carriers as far as the cost base for insurance premia is concerned, as air carriers registered in countries not prescribing a minimum insurance coverage do not have a cost advantage over air carriers registered in countries with a minimum insurance coverage level any more. It also affects the general public which is potentially put at risk to sustain damages resulting from disasters in air transport operations. With the new minimum insurance coverage levels, a reasonable step has been taken to cover potential economic damages resulting from air disasters.

In conjunction with the heightened security standards, the reduction of the average fleet age and an exceptionally good safety record from 2003 to 2005 premiums in the market have been falling again and the underwriters are starting again to offer higher coverage levels.[61]

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[59] Cf. Commission of the European Communities (2002a), p. 4.
[60] Cf. European Commission (2002a).
[61] Cf. Conway, P. (2005), pp. 70ff.

These developments show that uncertainty, which drives up transaction costs and risk premia, has been reduced and the insurance market is working properly again. Regulation (EC) No 785/2004 contributed to the reduction of uncertainty in the market for aircraft operators and underwriters in the aftermath of September 11, 2001. However, air carriers in the U.S. are still covered by governmental insurance guarantees. This is perceived to contribute to market distortions and a competitive disadvantage for European air carriers.[62]

The Regulation has not changed the situation that in case of new terrorist or war-like events when underwriters use the industry standard clause to cancel war risk coverage within seven days notice, air carriers are left without the required insurance coverage. In this case the responsible Member State has the alternative to ground all commercial aviation operations or to act as a *de facto* insurer for the air carriers concerned.

XIV.4.3.5. How far is this a Role of the EU or of other Levels of Aviation Policy

Before the action of the Commission it was up to the Member States to regulate air transport insurance requirements. The Commission justified its action with competences in the field of Common Transport Policy and consumer protection. But also, as mentioned above, competition is affected and one of the main roles of the European Union is to safeguard competition between Community carriers and – as particularly emphasised in the White Paper – in relation with third countries.

International legal frameworks concerning this subject, e.g. the Rome Convention were only ratified by very few Member States. Therefore, these multilateral approaches are only of very limited usefulness in reality. Although a globally accepted approach would be preferable, such an undertaking would need much more time to evolve and the difficulties to agree on a protocol that is acceptable to all parties are substantial.

XIV.4.3.6. Assessment

Assessment: Measure has been implemented.

XIV.4.4. Measure 20: Airport Charges

XIV.4.4.1. Description

Airport charges are mentioned in the White Paper in connection with several aspects:

First, differentiation in airport charges may be used to alleviate congestion problems in connection with slot allocation.[63] This subject will be covered in depth in chapter 4.5.

Second, the impacts of airport privatisation on user charges are seen sceptical, as airports are considered to be a "de facto monopoly" and care had to be taken to ensure the charges correspond with the services provided.[64]

Third, the Commission stated that one of its priorities is the inclusion of external costs into the charges

[62] See more in detail about this problem in chapter 4.7.
[63] Cf. Commission of the European Communities (2001), p. 38.
[64] Commission of the European Communities (2001), p. 39.

for infrastructure use.[65] While the proposal to regulate airport charges in this regard has not been followed up, several other instruments were and are still in discussion, for instance the introduction of emissions-based landing charges or the implementation of a framework on airport noise management. The latter subject will be covered in chapter 4.6.

Other instruments in discussion are in particular ticket surcharges, kerosene taxation and emissions-related en-route navigation charges.[66] These instruments relate to the fact that infrastructure use of air transport is not limited to airports, but also includes the use of the airspace between them.

Besides these aspects, the challenge concerning the use of regional airports by low-cost carriers in connection with state aid for airport operations has become important since the release of the White Paper in 2001. In this context not the abuse of charging powers by airport operators resulting in excessive charges, but the market power of airlines and their pressure to reduce airport charges below costs is a problem the Commission is about to address.

XIV.4.4.2. Objectives

In accordance with the more general objectives of the White Paper and the policy objectives of the Lisbon process and the Gothenburg Council decisions, airport charges shall be regulated in a way that competition and economic growth are supported and negative environmental impacts are reduced.

Primarily it was intended to propose a framework Directive on infrastructure charging for all modes of transport by 2002.[67] One of the principles to be included in this framework was that revenues exceeding the cost for infrastructure provisioning shall be used to mitigate environmental impacts.[68]

With special regard to the privatisation of airports it was planned to lay down a framework on airport charges[69] to take care that airport charges actually reflect services provided, as airports hold a position of a "de facto monopoly". This objective has already been followed up in the mid-1990s, although due to opposing views of Member States and lobby groups, it could not be cast into legislation. Main concern of the Member States in the Council was the perceived loss of autonomy in setting charges of airports wholly or partly owned by public authorities.[70]

XIV.4.4.3. External Developments since 2001

Since the release of the White Paper in 2001, the situation on airport charges has become more complex.

To a growing extent, revenue or rate of return cap schemes are in place at primary airports throughout Europe. Although these systems are aimed to prevent the charging of monopoly prices, it is quite clear for academics and regulators that any kind of regulation is inferior to competition when it comes to maximisation of productive and allocative efficiency.[71] Therefore some hope is pinned on the development of secondary airports to activate potential competition with the large hubs. But with these airports a set of new problems came up on the horizon.

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[65] Cf. Commission of the European Communities (2001), p. 16.
[66] Cf. Commission of the European Communities (2001), p. 76.
[67] Cf. Commission of the European Communities (2001), p. 77.
[68] Cf. Commission of the European Communities (2001), p. 16.
[69] Cf. Commission of the European Communities (2001), p. 39.
[70] Cf. McCarthy, C./McDowell, J. (2004) p. 25.
[71] Cf. Starkie, D. (2005), p. 7.

Several low cost carriers exert power on regional airports and the authorities controlling them to minimise airport charges, sometimes even below cost. This is an integral part of the business policy for instance of Ryanair, as their chief executive Michael O'Leary testified before the Joint Committee on Transportation of the Irish Parliament: "(…) we are a monopolist because we are able to dictate terms to airports.", "We move around based on whoever comes up with the lowest cost." and "We are not flying to airports that increase charges."[72] These statements indicate a very unsustainable business climate for secondary airports as these statements suggest that Ryanair tries to play off one airport against another. The market power of LCCs goes even so far, that airports and/or state authorities award carriers financial grants if they start up new routes or extend frequencies of existing ones.

The problem in this field becomes severe when the airports concerned are publicly owned so that grants can be considered as public subsidies, as it was by the landmark decision of the Commission in the case of advantages granted by Brussels South Charleroi Airport (BSCA) and the Region of Wallonia to Ryanair for the establishment of new routes and Charleroi as a base.[73] The agreement between Ryanair, BSCA and the Province of Wallonia was deemed to contradict the European rules on state aid.[74] Subsequently, the Commission decided that start-up financial support must be limited to 5 years, must not exceed 50 per cent of total cost and must be non-discriminatory.

The decision is considered ambiguous by different actors. German airports operators association ADV supports it as a base for transparent and fair competition.[75] Others, like the Assembly of European Regions (AER) criticise the 5-year-limitation for financial incentives as too short. Additionally, the AER justifies public subsidies as the air services concerned are characterised as services of public interest.[76] This position is questionable, as clear provisions for Public Service Obligations (PSOs) exist and as it is under competitive aspects rather doubtful to subsidise air travel to holiday destinations with public funds.

Furthermore it is feared that the Commission's decision would lead to a different treatment of publicly owned airports in comparison to their privately owned counterparts. While publicly owned airports are subject to the limitations outlined in the Commission's decision, private airport operators are almost completely unrestricted in their contractual design with air carriers, although in many Member States charges at privately owned airports have to be approved by state authorities as well. It is too early to say if the new guidelines on financial aids by airports increase transparency and fair competition, as the contracts between airports and the air carriers serving them remain confidential. Many possibilities to grant advantages exist which can be hardly identified by external analysts, especially as detailed financial data of publicly owned airports are rarely available.

Even if regional airport operators adhere to the new guidelines, it is still possible that airport charges at publicly owned airports in general are set too low, so that the full cost of capacity cannot be covered. This is especially the case when the infrastructure is financed to a large extent by public funds, insofar the airport operator then does not need to take into account depreciation, amortisation and interest into his price-setting rationale. This is indeed compatible with European legislation, as the construction of infrastructure is a means of general economic policy not to be controlled by the Commission under competitive aspects.[77] However, a private airport operator not benefiting from public funds has to include depreciation and interest into his price setting rationale and therefore will have a competitive disadvantage in comparison to airports subsidised with public funds. The competitive situation of regional airports becomes particularly obvious when one recalls the statements of Michael O'Leary (see above). These state-

[72] O'Leary, M. (2003).
[73] Cf. Commission of the European Communities (2004a).
[74] Cf. Geisler, M./Schmidt, J. P. (2004), p. 347.
[75] Cf. ADV (2004).
[76] Cf. AER (2004).
[77] Cf. Dolde, K.-P./Porsch, W. (2004), p. 3.

ments indicate that primarily not location is an important competitive factor for Ryanair's operations, as it was for legacy carriers in the past, but the level of airport charges.

Although studies exist which indicate that publicly subsidised airports generate positive effects such as the creation of jobs or additional tax revenue in excess of the subsidies granted beforehand,[78] the big question remains if a high degree of allocative and productive efficiency can be achieved under such governance. Member States that excessively support regional airports with public funds are exposed to criticism that the infrastructure does not adequately match the real needs of the users, leading to overcapacity of regional airports and capacity constraints at hubs and air traffic control.[79] For the European Commission this constitutes less of a problem, as it assumes that small regional airports do not affect intra-Community trade and competition negatively.[80]

Interestingly enough, in many cases no private investors could be found for regional airport projects and the financing of these projects is in many cases exclusively dependent on public funds. One could be very sceptical about the financial viability of these operations. Even despite their traffic figures have grown considerably in recent years, many income statements still show ongoing or even increasing losses.[81] As an additional cause for concern these airports often have a very limited catchment area and are often exclusively dependent on one LCC, because the markets are not big enough for several operators. One must seriously question the equitability of public investments, when there is only one user to benefit from it.

XIV.4.4.4. Legislative Achievements

So far, the EU Commission published a Directive on infrastructure charging only directed at the road transport sector[82], yet the Communication "Community guidelines on financing of airports and start-up aid to airlines departing from regional airports"[83] is one element of new infrastructure charging legislation for airports. As part of a consultation process with the Member States, this Communication intends to clarify on a number of questions raised in connection with the decision in the case of Charleroi and the situation of many small airports.

In this Communication, the Commission welcomes the development of LCC, which make air travel accessible and affordable. It underlines the need for a new framework for rules on airport financing and start-up aid for airlines, where a balance must be found between a fair competitive environment and public interests as far as regional development is concerned.

As it was argued above, infrastructure charging and state aid as far as airports are concerned is mainly a problem of regional airports. Large airports are almost entirely user-financed, as are the services for air navigation and traffic control. However, hub airports which possess characteristics of a natural monopoly need to be regulated in a way that the airport operator does not extract monopoly rents from its users.

Yet another important problem concerning the entire aviation sector – the internalisation of external costs – has been neglected in the past, while other modes of transport, in particular road, are in many Member States under constant political pressure in the run of ecological tax shifting.

[78] Cf. IHK Kassel (2000), p. 23. or Heuer, K./Klophaus, R./Schaper, T. (2005), p. 4.
[79] Cf. Lufthansa (2004), pp.1ff.
[80] Cf. European Commission (2005), p. 12.
[81] For instance at Frankfurt-Hahn with € -16.59m in 2004, cf. Fraport (2005), p. 142, or Dortmund with € -28.3m in 2004, cf. Rohwetter, M. (2005).
[82] Cf. Commission of the European Communities (2003).
[83] Cf. European Commission (2005a).

Two different kinds of external effects of aviation must be distinguished: local external effects, namely noise and air pollutants and global external effects, namely emissions contributing to the global climate change. Concerning airport charges local externalities are of particular interest, although also emissions-related airport charges are in the discussion to mitigate global climate change effects. The growing concern about the global environmental impacts from aviation has motivated the Commission to work out how air transport could be included into the EU emissions trading scheme.

XIV.4.4.5. Institutional Impacts

The institutional arrangement of how airport charges are set varies not only from Member State to Member State, but also from airport to airport within a Member State. In the UK for instance, airport charges have to be approved by the CAA; however, four airports (Heathrow, Gatwick, Stansted and Manchester) are subject to a more detailed price control concept. In the run of airport privatisation, fee-cap or revenue-cap models become increasingly important worldwide. With such a control concept the administration in the end has less to control, it simply sets the framework and all the rest is done in negotiations between the market partners.

It is rather problematic when states and/or municipalities are the owners of airports and in the same instance regulatory authority in the field of airport charges. In a lot of cases these airports present their cost situation to the administration which is then approved including a pre-determined rate of return. Fiscal interests could be an incentive to approve airport charges which are probably higher than under a different institutional arrangement. Under a cost-plus regulation, airports have a very limited incentive to reduce costs, therefore such a regulatory approach is considered as relatively inefficient.

Given the diversity of European airports, especially concerning size, ownership, governance and function, it seems reasonable that any future legislation could not provide more than general guidelines.

The institutional setting for the internalisation of external costs in airport charges has also to be considered. For the regulation of airports the role of the administration and the relevant institution may be questioned in general as the example of smaller Australian airports shows.[84] In these cases the market seems to be sufficient to balance the interests of the market partners. But in the case of the internalisation of external costs it is out of question that a public institution is needed to regulate directly or to set a specific framework. Up to now the regulatory institution is the same for cost regulation as well as for environmental regulation; but this may be questioned. If the optimal institution for cost control or cost regulation will be the European level, it is not obligatory that it is the same for the noise or emission regulation – or vice versa.

XIV.4.4.6. Economic Impacts

Airport Charges in General

It may be questioned in how far a centralisation of regulation leads to lower costs or not. The transaction costs of negotiation of all the different regulatory institutions in Europe may probably be lowered if there is only one institution. As long as the cost-plus-regulation is dominant this reduction will be limited because in every case the cost situation of the specific airport has to be considered. In contrast to this, a cap regulation needs quite less administrative effort – and in this case centralisation will reduce the amount of transaction costs. The question remains in how far and how quickly the number of state employees will be reduced on the different national administrative levels whereas a centralisation will lead to a need for more

[84] Cf. Forsyth, P. (2002), pp. 2ff.

staff. The highest reduction of regulatory costs of course will be achieved if also in Europe as in Australia a partial renunciation of regulation would be possible.

A very specific consideration of the economic impact is needed for the use of airport charges in relation to the capacity situation of the airport. Up to now in Europe, airport charges do not represent the scarcity problem of the airports – so they are economically inefficient. This very special topic – though related to airport charges – will again be picked up in the context of the slot allocation system in the following chapter 4.5.

An instrument that internalises external costs increases the overall economic efficiency, as a distorting price that is set too low is increased to a level where private and social costs match. The environmental impacts of aviation and instruments to mitigate them will be covered in depth in the respective chapters on airport noise (chapter 4.6), kerosene taxation (chapter 4.12) and differential en-route navigation charges (chapter 4.13)

Most European airports have already a noise surcharge on top of the "normal" landing charge, whereas a charge for the emissions in the environment of the airport is still relatively seldom. However, Sweden and Switzerland have for many years operated schemes with airport charge differentiation with good results, and some airports in the UK have recently introduced it as well. These instruments are intended to give economic incentives to airlines to modernise their fleets more quickly. Even though such instruments may have only a limited impact in the short term because the possibilities of the airlines are limited to introduce more advanced technologies into their fleet, the impact is likely to be stronger in the long run as the price signals enter into airlines' investment decisions.

Concerning noise charges, the differentiation of noise surcharges at most airports is not yet specific enough to offer incentives for minor noise changes caused by new technologies or operational changes. If all currently available aircraft of a certain size are positioned in the same noise class, the incentives for airlines to reduce noise further are very limited. The only remaining possibility seems to be to change the total kind of operation; this means e. g. to increase frequencies by using smaller planes being in other noise classes. But this possibility is limited as well, because the airlines may use it only at airports where they may get enough slots to increase frequencies and at airports where the differentiation between different noise classes is big enough that the incentive is given to use two smaller planes instead of one bigger.

To achieve a higher degree of incentives to reduce noise also in relatively small steps, it may be necessary to rethink the classification of aircraft in noise classes as they are right now. Besides the implementation of even small technological improvements, incentives could also be created to change operational procedures that could help to reduce noise impact, such as steeper descent and ascent profiles. For this at the end the noise measurement has to be changed so far that the emitted noise of each flight is the base for calculation and not the class of a certain aircraft.

Economic impacts of the Charleroi-Decision

The basic result of the Charleroi-Decision is an increase in transparency. Start-up aids and discounts for new air services are still possible; however, they must be granted in a non-discriminating way. Besides the cancellation of the route from Charleroi to London by Ryanair, which more or less is an act of defiance, no severe impacts can be observed following the decision. Yet the operation of airports remains in an area of conflict: On the one hand, authors emphasise its nature as a service of general interest, while others emphasise it as an economic activity.

XIV.4.4.7. Changes needed to achieve the White Paper's Objectives

The idea of the White Paper "care will have to be taken to make airport charges actually correspond to the services provided"[85] deserves special consideration. In fact, on the one hand, in many instances the current regime on airport charges does not offer economic incentives for air carriers at congested airports to relocate their services to off-peak hours or alternatively to non-congested airports. On the other hand, the current regime (cost-plus or incentive regulation) impedes airport operators from extracting monopoly rents from their users.

In relation to the above mentioned statement a new development at some airports may just go into the Commission's intended direction. The LCCs with their market power on the one side and their cost pressure on the other side forced several airports to differentiate their charges; because the LCCs want to pay only for services they need whereas up to this pressure there was mainly one single airport charge. This example shows that the market forces may find a way independently from administrative regulations. So the objective may be achieved via a strengthening of the market forces.

Policy options on airport charges:

No ex-ante regulation on airport charges

One possibility to circumvent the problems associated with regulatory approaches is a deregulation of airport charging, as already realised in Australia and New Zealand. While in Australia regulators will monitor the development and threatened to return to price regulation when the pricing proves to be "unsatisfactory", evidence suggests that airport charges in both countries are relatively high in comparison to other countries. In the meantime, discussions came up to reintroduce some form of regulation.[86]

Theoretically it is said that non-capacity-constrained airports have a genuine interest not to overcharge on aeronautical charges, as non-aeronautical revenues depend on the number of passengers arriving at and departing from an airport.[87] Setting the aeronautical charges on a considerable low level could be an incentive for airlines to increase services, which would result in more passengers and hence higher revenues from non-aeronautical sources such as retailing or parking.

As this assumption could prove true for non-congested airports, some form of regulation will be needed for capacity-constrained airports, as rent-seeking behaviour by airport operators could lead to limited incentives to increase infrastructure capacity. On the other side a capacity constraint means that demand is higher than supply, so excess demand cannot be catered. So the incentive for airlines to serve this airport is already very high; out of this follows that the airport has an incentive to increase charges to find a new equilibrium.

Break-up of local multi-airport-monopolies

Some authors argue that the current ownership situation limits effective airport competition due to a concentration of market power. Many multi-airport-systems are managed by the same operator, for instance the vast majority of Spanish airports is owned and operated by AENA, Heathrow, Gatwick and Stansted by BAA, Milan Linate and Malpensa by SEA, Frankfurt and Hahn by Fraport and so forth. A regulation prohibiting the ownership and/or operation of more than one airport in the same geographical area could lower market power, spur competition, enhance efficiency and capacity provision and lead to lower user

[85] Commission of the European Communities (2001), p. 39.
[86] Cf. MacKenzie-Williams, P. (2002), p. 12f.
[87] Cf. Starkie, D. (2001), p. 125.

charges. Authors argue that after the break-up of multi-airport monopolies a lesser degree of regulation on airport charges will be needed as reduced market power will have positive impacts on competition between the airports.[88] The break-up of multi-airport monopolies could be a part of a policy package, yet it alone can be hardly seen as sufficient. If realised, within a then existing duopoly or narrow oligopoly, the possibility for collusive behaviour must be considered. The competitive intensity in narrow oligopolies tends to be either very high (e.g. Airbus vs. Boeing on the market for commercial airplanes) or very low (e.g. the gasoline market in Germany). Due to the different characteristics of airports (Heathrow as hub, Stansted as point-to-point low cost airport), for most airlines different airports in one area are not perfect substitutes, therefore a highly intensified competition will most likely not develop.

Single vs. dual till approaches

Within a price cap regulation, the question arises whether to include commercial revenues into the price cap formula for aeronautical charges (single till approach) or to separate them (dual till approach). With the single till approach, aeronautical charges will be lower, as commercial revenues will be subtracted from total costs, so aeronautical charges only have to cover the residual. Some authors argue that a single till approach is superior at non-congested airports, due to the relatively lower aeronautical charges induce more traffic, while a dual till approach is preferable at congested airports. Relatively higher aeronautical charges in this case are said to have a positive effect on the scarcity situation as far as slots are concerned.[89] In the light of a still underdeveloped environmental policy where external costs are not internalised, a single till approach arguably exacerbates the problem by de facto enabling aeronautical costs and thus, indirectly, ticket prices, to be cross-subsidised by revenues from commercial activities that enjoy a sort of monopoly in the individual airports. The average price of air transport can thus fall further below its true cost.

Use of airport charges to mitigate congestion problems

The White paper explicitly states that "[a]irport charges must be adjusted to deter bunching of flights at certain times of day."[90]

In this respect, one must differentiate three different types of airports:

I. Uncongested airports
II. Airports with congestions occurring during peak times
III. Airports with continuous congestions during most or all times of operation

No action is needed for type-I-airports. For type-II-airports, revenue-neutral peak-load-pricing schemes could be considered, which could lead to a more evenly distribution of traffic flows. Airlines already try to mitigate the negative effects of peak time congestion with voluntary actions (depeaking of hubs).

Airport charges at type-III-airports do not reflect the scarcity and the value air carriers attribute to the use of airport facilities. The prevailing system of cost-relatedness or a price cap in airport charges in combination with the allocation of slots based on grandfathering stands in opposition to the fundamental economic efficiency paradigm that the market determines a price where demand equals supply. Basically, two policy options exist:

(a) Inclusion of congestion pricing in airport charges

[88] Cf. McCarthy, C./McDowell, J. (2004), p. 45.
[89] Cf. Czerny, A. (2004).
[90] Cf. Commission of the European Communities (2001), p. 38.

(b) Regulation of airport charges and usage of a different instrument to tackle congestion

Alternative (a) *de facto* implies that the property rights for slots are attributed to the airport operator. If this rule is applied to the airport market, in absence of any compensation or transfer payments, airport operators will generate an economic rent by far exceeding their costs. As a negative side effect, under this laissez-faire framework, airport operators would tend to restrict capacity expansion to a level where marginal cost equals marginal revenue, resulting in a loss of welfare and continuously high prices for users. Therefore, IATA as a representative of airlines strongly opposes such a solution.[91] Under the current framework, one could say that economic rents are attributable to the air carriers, as they receive a benefit for a lower price than they are willing to pay. If alternative (a) is applied, it is still questionable, what the instrument to tackle congestion should look like. If it should be designed to enhance economic efficiency, it has to incorporate monetary incentives, which in turn will likely generate revenues that have to be attributed to someone. A solution for this puzzle must on the one hand offer adequate capacity expansion incentives for the airport operator and on the other hand a higher level of economic incentives for the use of existing airport infrastructure. One possibility might be the earmarking of revenues exceeding actual cost for capacity expansion projects and therefore lowering the cost of future use (e.g. lower cost of capital for new runways or terminals). This strategy would be in line with the White Paper´s proposal to channel back revenues exceeding actual cost to users. Furthermore this strategy is in line with the infrastructure-charging directive for roads, where guidelines allow the use of charges of existing routes to fund for the construction of new projects. In contrast to road and rail projects, the financial aspect for capacity expansion of congested airports is less of a problem – it is more likely that such projects cannot be implemented due to legal constraints. This in turn could be a major drawback of the approach, as it cannot be guaranteed that the funds generated will be reused for capacity expansion at the respective airport.

An alternative could be the use of revenues exceeding the cost of airport and airway infrastructure use for projects in alternative modes, as proposed by the White Paper.[92] However, this approach will most likely not be accepted by aviation stakeholders.

The impact of other policy measures on airport competition, service quality and charges

Other policy measures in the field of air transportation are likely to have repercussions on the situation of airports. A further-going liberalisation of air traffic rights and ownership regulations may lead to increased competition between hubs, as large network carriers then have the opportunity to shift traffic between hubs in different countries. The acquisition of KLM by Air France or of Swiss by Lufthansa could be alongside this rationale, as Swiss's hub in Zurich has capacity reserves left, while Lufthansa's main hub Frankfurt operates at its limit, whereas in the case of KLM/Air France Amsterdam and Paris have about the same congestion level making a two-sided competition possible.

High growth rates of LCCs, made possible by the liberalisation packages implemented during the 1990s may also have an impact on hub airports' service quality and charges. While LCCs primarily use airports with comparably lower airport charges than hubs for point-to-point connections they compete successfully with traditional airlines that are using hubs on intra-EU O&D markets. The LCCs' attractive fares force legacy carriers to become more efficient and control costs along their value chain. This also means that the airports they are using must become more efficient and offer attractive service levels and charges, so that incumbent hub carriers can compete more effectively with LCCs. This development becomes for instance obvious in the negotiations for a new ground-handling contract between Lufthansa and Fraport.

[91] Cf. IATA (2004a), pp. 5f.

[92] Cf. Commission of the European Communities (2001), p. 63.

Lufthansa, the main user of Frankfurt airport, has reduced the costs for ground-handling by a double-digit percentage, resulting in savings of several million EUROs.[93]

XIV.4.4.8. How far is this a Role of the EU or of other Levels of Aviation Policy

The problem in the field of grants by regional airports to airlines is also one of different levels of politics. Municipalities, regional and state governments believe in economic benefits for their regions in association with the establishment of new airports and routes to European business centres, while the Commission is interested in the development of the Common Market without competitive distortions. In the context of institutional impacts the different institutions on different levels were already mentioned. The optimal distribution of tasks on different levels needs a diligent calculation especially of the relevant transaction costs.

As far as public funding of airport construction is concerned, the Commission has limited competences, as the provision of infrastructure is part of the economic policy of the Member States.

Concerning environmental surcharges, the introduction of such measures on a European level is laudable when it is possible to minimise the distortions on inter- and intramodal competition and the costs for compliance. As the intra-European aviation market is fully liberalised, it seems appropriate to implement a pan-European solution to minimise negative effects on competition.

The towering challenge in the field of airport charges and their regulation is that the EC Treaty leaves broad scope for the Member States to arrange ownership and institutional organisation of airports. But ownership and institutional arrangements play an important role in regulation, e. g. how to set incentives or to achieve efficiency increases. Because of the rules on subsidiarity and the notion that investments in airports fall into the category of general economic policy, for which the Member States are responsible, the scope to act for the EU is rather limited. Therefore, the EU will only be able to achieve improvements in close cooperation with the Member States and other stakeholders. It can be assumed that due to the close relation of efficiency and private ownership one will have difficulties to reach promising regulatory achievements when leaving traditional ownership structures such as multi-airport-monopolies untouched.

XIV.4.4.9. Assessment

The analysis has shown that it is very difficult to develop general guidelines on airport charges, due to different airport sizes and functions, different ownership structures and the needs of the Member States.

Concerning the environmental component of airport charges, many airports already use noise-differentiated charges to create incentives for airlines to use less noisy aircraft. Charging schemes to improve local air quality are under development on subsidiary levels, for example in Germany or Sweden. As the intra-European aviation market is fully liberalised, it seems on the one hand appropriate to implement a pan-European solution to minimise negative effects on competition. Moreover, the potential impact of noise- and emissions-differentiated charging schemes is higher if applied in all airports, because the economic incentives to improve performance are then not restricted to operations at a few, given airports. On the other hand, as the environmental situation at European airports greatly differs, such a legislation should offer enough room to adapt to the local circumstances, which might be best identified on subsidiary levels. While the impact of environmental surcharges may be expected to be rather limited in the short-term as the penetration rate of improvements in technology is very slow, (among other factors, due to the long-term usage of aircraft), the longer term effect could be considerable if applied at European level as this would further influence investment decisions.

[93] Cf. Frankfurter Rundschau (2005), p. 13.

An improvement in using capacity constrained airports cannot only be achieved through regulation of airport charges, but also in new slot allocation procedures, which will be covered in the next chapter.

At least for regional airports, the new guidelines will help to create a "level playing field" between different regional airports and different airlines. However, as privatisation of airports advances throughout the EU, it could be advisable in future also to regulate public funding for airport construction, as competitive distortions between private and public airports operators may arise.

Assessment: New legislation concerning airport charges in general has not been implemented yet, although progress has been made in the case of regional airports and state aid. These rules offer some advice, how airport charges can be set for airlines serving these kind of airports.

XIV.4.5. Measure 21: Slot Allocation on Community Airports

XIV.4.5.1. Description

As capacities at many attractive European airports reach their limits, slots become an important factor for the contestability of the liberalised aviation market. Under the current system, slots remain with the airlines in subsequent schedule periods, when they have been used at a minimum of 80% of the time in the preceding period, which is called the "use-it-or-lose-it" rule. Slots that have not been used or become available due to capacity expansion will be made available partly for incumbents and partly for new entrants.

The customary practice has some severe drawbacks as far as economic efficiency is concerned. For example, incumbents may use more slots than they actually need with an occupation rate of exactly 80% for each slot with the aim to create an entry barrier for possible newcomers, the so-called "babysitting". Therefore, a reform of the slot allocation policy has been considered for a long time.

In connection with slot allocation, there are several aspects that have to be taken into account. On the airline side, a balance between the interests of incumbents and newcomers must be found. Concerning the airports, it is important to create proper incentives for capacity expansion. Besides these aspects, a lively discussion in the academic community is going on, which is concerned with distributional effects on airport operators, airlines and passengers and the definition of a slot in connection with property rights aspects.

XIV.4.5.2. Objectives

The Commission states in the White Paper as an objective to present a revision of the slot allocation system by 2003 in order to improve market access and to take account of the environmental impacts at Community airports.[94]

The White Paper states that rules concerning slot allocation "will have to be amended"[95], to achieve a more transparent system of slot exchanges and allocation priorities, immediate penalties in the event of non-use and to allow greater access to the market for newcomers. Furthermore, the introduction of market mechanisms shall increase flexibility and efficiency and reduce negative environmental impacts.

[94] Cf. Commission of the European Communities (2001), p. 106.
[95] Cf. Commission of the European Communities (2001), p. 38.

XIV.4.5.3. External Developments since 2001

The temporary downturn in commercial aviation after the war in Iraq and the SARS epidemic resulted in Regulation 1554/2003. Under the then existing slot allocation rules, slots would have been withdrawn if not used by the carrier for 80% of the schedule period. This could have had severe impacts on the carriers' operations for the summer period 2004. Regulation 1554/2003 advised the coordinators to allocate slots for the summer period 2004, even if they had been used less than 80% of the time in summer 2003. However it may be question if this is not a hindrance of competition. In the case of external influences some airlines are less efficient and cut back operations, others are more efficient and want to expand. Why should these airlines be hindered to expand their flights even at congested airports?

In the meantime the situation of lack in capacity has become more important than ever, as growth in commercial aviation has returned and airport capacity expansion at various sites in Europe has severe acceptance problems, resulting in lengthy legal problems and delayed construction.

Additionally, the growing importance of alliances may be counterproductive for competitiveness under the current slot allocation rules. Alliances tend to make it easier for incumbents to trade slots and stay above their 80% occupation rate limit to retain the slot for the next schedule period. This makes it more difficult for newcomers to gain access to pool slots.

XIV.4.5.4. Legislative Achievements

Since the release of the White Paper in 2001, no groundbreaking reform of the slot allocation system has been achieved. Regulation 1554/2003 is merely a reaction on the situation after the drop in demand following the September 11, SARS and Gulf war crises.

A first step towards a far-reaching reform constitutes Regulation 793/2004 to amend Regulation 95/93. Regulation 793/2004 clarifies definitions and calls for more transparency in the slot allocation procedures.

For instance in Regulation 95/93, a slot was implicitly defined as a runway movement. This neglected the fact that the runway is not the only constraining factor for airport use, but also other infrastructure. The new Regulation 793/2004 defines a slot as a permission to use the full range of airport facilities.

Slot allocation remains based on grandfathering, where slots have to be used 80% of the time to be allocated again to the current user for the next period. Free exchanges are possible (on a *quid pro quo* basis), while trading in exchange for money is now explicitly ruled out. This indeed is a severe problem in practice, as slots during different times of the day possess a different value.

Furthermore the new Regulation lays down more clearly the role of the scheduling committee and the role of the schedules facilitator or airport coordinator.

XIV.4.5.5. Institutional Impacts

Regulation 793/2004 has a limited institutional impact. It strengthens the independency of the airport coordinator and marginally improves the situation for new entrants. Yet there is no final solution on the question concerning the property right of slots, as the new Regulation defines slots as the permission to use airport infrastructure. The new Regulation is therefore only of limited use for enhancing the economic efficiency of the slot allocation process.

XIV.4.5.6. Social Impacts

It may be questioned if there is any social impact in the consideration of slot allocation, and in the actual situation there seems to be no need to deal with. However the whole situation changes if the EU succeeds to implement more market oriented rules in the allocation process. It is often mentioned against market mechanisms that they do not consider social requirements adequately. In the aviation sector, these social requirements are mainly regional services to more or less remote regions. In these cases, the demand for a certain service is too low; however, it is in the so called general interest that such a service is provided.

Regulation (EEC) No 2408/92 lays down the process how Public Service Obligations (PSOs) can be imposed. Under certain conditions, state or regional administrations may limit the number of carriers serving the respective relation or give subsidies, which are not counted as state aid. Instead of competition in the market we have competition for the market, that means that the administration asks for a tender, and the airline requiring the lowest subsidies and granting the best service will get it. Some examples are the routes along the Norwegian coast, the Scottish Island services, and most of the French regional services.

Now we are faced with the argument that after the introduction of commercial slot allocation system these services would not survive. But in the reality of a free market oriented system this needs not to be the case as long as the airlines are not forced to sell and rebuy the slots. Together with a secondary trading the real value of a slot is better known; the slot value would be the opportunity cost for such a service. For an already existing service there will be no problem in the first place. However, if a completely new service shall be set up, the public authority wanting to impose a PSO must therefore buy the slots and take these costs into account as well as the subsidies on the ongoing operation. More generally it has to be questioned how many services are still needed under these conditions.

XIV.4.5.7. Economic and Ecological Impacts

A commercial slot allocation mechanism will tend to increase efficiency, as those airlines with the highest willingness to pay will receive the slots. An important question is the impact of economic slot allocation instruments on the price of air services. Different implications are conceivable - which of them will materialise is hard to predict, as it depends on the complex relation of airports, airlines, pricing and competition issues and the reaction of the consumers.

<u>The case for lower airfares:</u>

Newcomer airlines, which can produce more efficiently, would gain access to the market, while the current regime effectively shuts out competition from many airports. Increased competition and the market entry of airlines with lower costs per available seat-kilometre will tend to lower prices.

It is assumed that lower airfares will primarily materialise on long-haul services. A study for the EU conducted by NERA assumes a replacement of short-haul services by long-haul services, as airlines expect to earn higher profits with long-haul flights.[96] Thus, seat capacity on long-haul services will increase, forcing down yields for incumbents and prices for consumers.

<u>The case for higher airfares:</u>

The main aspect of slot allocation is the distribution of scarcity rents. Under the current system of grandfathering, these rents are vested in the hands of the airlines. Airlines have the option to retain the profits generated from the free allocation of slots or – out of competitive reasons – pass them on to consumers

[96] Cf. NERA (2004), p. 118.

in the form of lower fares. When under a new system airlines have to buy slots from the airport operator, the state or from other airlines, these costs are likely to be passed on to the consumer.

The introduction of a market mechanism aims to bring demand in line with supply via some form of pricing. This means that demand will be reduced with the introduction or increase of prices – which add as costs to the provision of air services – be it either as opportunity cost in case of secondary trading for slot holders who could opt to sell some slots or as effective cash-flow relevant cost in case a slot has to be bought. Airlines will have the options either to bear the costs, which would further reduce their margins and profits in an already difficult environment, or to shift the costs on to the passengers. The ability to shift cost increases on to the passengers (and therefore enforce higher prices in the market) with the aim to increase revenues *inter alia* is dependent on the elasticity of demand, the behaviour of competitors and the intensity of competition. Therefore, it would be imprudent to make general statements on the effects of market mechanisms in slot allocation for the airline industry in general; however, the following assumptions could give a hint on the developments:

Given the high growth of low cost carriers which operate mainly from non-congested airports facing no cost increases for slot allocation, price increases on short-haul flights will tend to be hardly possible to enforce for the traditional network carriers. As there is less competition and a considerably lower elasticity of demand on intercontinental direct non-stop O&D markets, particularly in the premium cabin classes, it could be assumed that cost increases will occur for these services.

Given the example of £ 15.6m for the value of four slot pairs in Heathrow,[97] the general question for incumbents will be whether the profit from the provision of the air service surpasses the profit from the sale or lease of the correspondent slot pairs. If not, it is rational not to buy the slot respectively to sell slots allocated for free. Under these circumstances, in case of profit-maximising behaviour, the price of slots will be reflected in the price for air services. This could lead to a reduction of air services between regional airports and the major hubs with low passenger volume in the absence of PSOs.

So far the economic rationale of slot using or selling. But one point is not yet mentioned; however, it may become quite more important with such a market mechanism. Of course we will get a market for slots, but the market partners will all be potential competitors. Selling a slot from a regional or a holiday carrier to a long-haul carrier will not cause any problem, but in more or less all other cases the slot one carrier sells will help directly or indirectly its competitor. This probably will hinder an efficient market development. So the lack of available slots will act as a market entry barrier, and the competitive situation within the airline industry may also act as an market exit barrier. A possible help could be a "blind selling", but this can also hinder even more.

Ecological impacts

Recent studies have argued that the introduction of market mechanisms in slot allocation will have a negative impact on the overall ecological performance of the air transport system.[98] With market mechanisms in slot allocation, it can expected that airlines will use the slots in a way to maximise their profits. It is commonly argued that there is a greater opportunity to generate profits with long-haul instead of short-haul services, which will on the one hand result in an absolute increase in greenhouse gas emissions. On the other hand, on a per-passengerkilometre-basis, emissions tend to be reduced, as airlines will use their valuable slots for air services with higher load factors. Also long-haul services tend to have a lower emission level on a per-passengerkilometre-basis. But it may not be neglected that the absolute amount of

[97] Cf. Kilian, M. (n.d.) in the case of AirUK/KLM UK's transfer to British Airways in 1997, newer sources talk about a value of £ 40m for six slot pairs in Heathrow, cf. Balfour (2004), p. 145.
[98] Cf. NERA (2004), pp. 121f. or Ewers, H.-J. et al. (2001), p. 5.

emissions will be higher though we have a reduction on the per-passenger-base caused by the in average bigger aircraft or the aircraft of the same size but with more seats. However the overall energy efficiency may be higher given the fact that – from an ecological viewpoint – short-haul flights are relatively inefficient.

From the viewpoint of theoretical political economy, the objective to increase economic efficiency in slot allocation and to reduce environmental impacts constitute two different, in this case conflicting policy objectives – therefore according to Tinbergen's principle, at least two different policy instruments are necessary to achieve an optimal degree of achievement of these objectives.[99] For instance, to mitigate the effects of growth in greenhouse gas emissions in aviation, an open emissions trading scheme could be introduced, where other sectors with lower marginal cost of emissions' reduction than in aviation, reduce their emissions, allowing aviation to grow with an overall positive environmental performance. This of course necessitates that such a system is actually technically and politically feasible.

With the arguments presented above, it could be argued that the negative environmental impacts are not a valid reason to avert the introduction of a market based slot allocation system. Prerequisite for enhancing overall social welfare is the introduction of instruments that address adverse environmental and social effects.

XIV.4.5.8. Changes needed to achieve the White Paper's Objectives

Regulation 793/2004 is only a first step for a more extensive reform of the slot allocation process. In the meantime the Commission released on 17th September 2004 a staff working document, which provides initial discussion points for a consultation process with Member States and stakeholders.[100] In this staff working paper, it becomes obvious, that the Commission is aware of "the fundamental flaws of the current regulation"[101], especially concerning the absence of economic incentives for the efficient use of slots. The document therefore proposes the introduction of some kind of commercial mechanism, which so far was ruled out by the Regulations in place.

Considering the results of recent studies concerning slot allocation, including the study conducted for the Commission by NERA, several policy options exist to achieve a higher degree of efficiency regarding slot allocation at Community airports:

Introduction of financial instruments to bring capacity in line with demand

From an economic perspective, the price mechanism is a very powerful tool to assure efficiency. For airports facing congestion at certain times of the day, a revenue-neutral peak load pricing scheme could be introduced, while at permanently congested airports, a congestion charge in addition to the regular landing charges could be imposed.

However, care must be taken that the proceeds from these instruments are not misused by airport operators to enhance their own financial standing, resembling monopoly pricing and its negative impacts on capacity provisioning. It is suggested that all revenues could be earmarked to be used for capacity expansion.[102] But this concerns only the normal airport charging, not the slot trading or any other form of slot allocation. After a free primary allocation of slots, earnings of secondary trading can be considered as windfall profits for the affected airlines. It may be said that a certain percentage of these revenues may be

[99] Cf. Tinbergen, J. (1972), pp. 98f., cited by Luckenbach, H. (2000), pp. 358f.
[100] Commission of the European Communities (2004b).
[101] Commission of the European Communities (2004b), p. 4.
[102] Cf. Ewers, H.-J. et al. (2001), pp. 15ff.

used for capacity expansion. But this will probably not be accepted by the airlines arguing that newly created slots of such a capacity expansion will be first available for newcomers, so for their competitors.

The problem of congestion charging to bring capacity in line with demand must therefore be viewed from two different perspectives:

To reach static efficiency, it might be sufficient to raise airport charges to a level where infrastructure supply matches demand. But from a dynamic point of view, this can have severe negative impacts on the provision of additional capacity as the airport operator will increase its profits by skimming scarcity rents, if this generates higher profits than capacity expansion.

A new regulation must therefore provide incentives to use existing slots efficiently (static efficiency), but also create incentives to achieve capacity growth (dynamic efficiency). This could be severely impeded when scarcity rents are attributed to airport operators.

Solution of property rights aspects

Under the current legal framework, airlines are entitled to use slots, although they are not "owners" in legal terms. In Europe, the notion is upheld that slots basically are *res communes*, owned by the state which entitles private entities to use them.[103] Some authors argue that the entitlement according to customary law may not be withdrawn without compensation, which would be a serious obstacle if a major change of the primary allocation mechanism is intended.

Some authors argue that the property rights issue - which is in its core a question of distribution of scarcity rents either to the state, the airport operators or the airlines - must be ultimately solved before decisions about primary and secondary trading could be made, while under the current system of grandfathered allocation this question is deemed largely irrelevant.[104]

Although not intended by the Commission, secondary slot trading in combination with monetary compensation has occurred in reality under the prevailing uncertainty. From an economic perspective, the uncertainty associated with the entitlement of slots would be included as a risk discount, raising severe transaction costs for the holder of slots. In its utmost consequence, a viable market would not be able to develop, as buyers and sellers would disagree on the value of slots in light of uncertainty concerning the protection of vested rights.

To achieve a maximum degree of productive efficiency, the question who is the owner of the property rights for slots is under absence of transaction cost less of a problem, as the actors will allocate the slots through a process of bargaining to those users who value them most (Coase theorem). Therefore a distinction must be made between distributional aspects (distribution of scarcity rents) – which are of importance in the policy context – on the one hand and maximising of productive and allocative efficiency – which is of prime interest for the economist – on the other hand. This subsequently means that the question about primary allocation could be neglected, as long as the property rights are ascertained. Secondary trading – if allowed – would theoretically assure economic efficiency.

In short, it is not quite clear why the property rights issue has not been solved *de jure* and it is obviously not intended to solve it shortly *de lege ferenda*. *De facto* in many instances airlines treat their slots as property. To make them tradable assets, it would be helpful to find a clear definition of who is owner of slots.

[103] Cf. Leveque, F. (1998), p. 5.
[104] Cf. Balfour, J. (2004), p. 150.

Permission of secondary trading

While auctioning as an instrument for primary allocation of slots on a grand scale is associated with severe transaction costs (airports like Frankfurt or London-Heathrow have hundreds of thousands of slots to offer in a given schedule period) and international legal/political problems (removal of grandfather rights could be a violation of protection of confidence and is in conflict with customary law), the allowance to trade slots freely between interested airlines and other stakeholders could provide an incentive for better use of existing slots and enhance contestability of the market. Although under the current framework the Commission takes a tough stance against the sale of slots, rumours exist that slot pairs at London Heathrow have changed hands for as much as € 10m.[105]

The rationale behind this is that two airlines having slots in Heathrow exchange these slots; one airline has very valuable slots in peak times and they get slots with low value they don't intend to use. So far this is allowed and not questioned. But as slots of different times of the day have a different value, a compensation payment to equalise this differential may be demanded by a slot trading airline. This is not directly forbidden, as a court in the UK decided.[106] The fact that it is known that slots are traded and the Commission does not act against it effectively may indicate in which direction new legislation on a European level could probably go. But it must be seen too, that once secondary trading is allowed the current IATA-oriented allocation procedure will find its end very soon. If an airline intends to fly to a certain airport, it asks the airport about the necessary slots – if the airport cannot offer the requested slots, the airline would ask incumbents to trade; a slot coordinator in the current form would no longer be needed.

Auctioning of pool slots

Pool slots are slots that become available due to non-use or capacity improvements. Under the current rules, a maximum of 50 per cent of pool slots will be allocated to newcomers. This limit severely impedes the contestability of congested airports, as not only newcomer, but also the incumbents will be awarded slots. Under an auction approach, every airline would have an equal opportunity to receive a slot – depending on its willingness to pay.

An auctioning of slots may gain relevance in the long run. There are discussions that the user right of slots should be limited for a time frame of about five years or that every year about 10 % of all slots should become available. These freed slots then could be auctioned. So an auctioning is not only usable for the very first distribution but also in the long run. Therefore this measure could also be considered as improving the contestability of hub airports, which more and more develop into "hub fortresses" for the home carrier and its alliance.

XIV.4.5.9. How far is this a role of the EU or of other levels of aviation policy

Legislation concerning slot allocation is part of the Common Transport Policy, as was decided by the ECJ in the Open-Skies-Cases. The ECJ decision clarified that the European Union has exclusive competence to legislate in areas concerning CRSs, intra-Community pricing and slot allocation.

Nevertheless, implications of new legislation on the external relations must be carefully assessed. A unilateral change in slot allocation procedures may provoke some conflicts with third countries, in case they

[105] Cf. McCarthy, C./McDowell, J. (2004), p. 14 - 8 slots in LHR have allegedly been traded for £15.6m between Air UK and British Airways in 1998, cf. Kilian, M. (n.d.). In 2004, 12 slots have allegedly been sold by flybe to Virgin Atlantic and Qantas for £40m, cf. Balfour (2004), p. 145.
[106] Cf. Balfour (2004), pp. 147ff.

suspect disadvantages for their own carriers. This could trigger retaliatory measures, especially if grandfathering would be removed unilaterally for primary allocation.[107]

Slot allocation follows in most countries worldwide the IATA procedure. In Europe this procedure is adjusted in some points but generally it is followed. So this shows that the subsidiarity principle has no influence in this case. But on the other side two exemptions show that this is not the only possible allocation technique. In the U.S. no direct slot allocation exists, with the exemption of four airports all the others follow a first come first served order. This shows that on the one side unilateral allocation procedures are possible and also accepted in international aviation policy, on the other side no legislation in the international aviation policy exists that makes grandfather rights mandatory.

XIV.4.5.10. Assessment

Given the potentially huge impact of a new slot allocation policy on airline operations, all options must be assessed carefully. It is highly probable that incumbent network carriers will oppose commercial instruments to allocate slots, as this would lead to a loss of scarcity rents currently vested in their hands. Not surprisingly, stakeholder groups unanimously favour a status-quo-solution.[108]

A prudent approach could be the implementation of a limited amount of instruments, e.g. allowing secondary trading without changing the slot allocation system entirely in the beginning. In due time, an assessment has to take place if these measure have proven to be sufficient or if graver measures have to be taken to achieve the intended objectives, such as a higher intensity of competition at major European airports by increasing their contestability. A realisation of these objectives could offer a variety of advantages for consumers, such as increased frequencies and lower fares.

Due to the complexities associated with the matter, it is expected that the necessary legislation will be in place no sooner than 2007 or 2008.[109]

Assessment: Delayed – The objectives of the White Paper have not yet been cast into convincing legislation.

[107] Cf. Paylor, A. (2005), pp. 52ff.
[108] Cf. Paylor, A. (2005), pp. 52ff.
[109] Cf. Paylor, A. (2005), pp. 52ff.

XIV.4.6. Measure 22: Community Framework for Airport Noise Management

XIV.4.6.1. Description

Noise limitation and mitigation is an integral part of the overall objective to achieve sustainable growth of transport activities in general and air transport in particular. Additionally, noise mitigation measures are an important factor to gain acceptance by local politicians and residents for the expansion of airport capacities, which is inevitable to cope with a growing demand.

In particular noise generated at night-time is of special concern for residents close to airports. While on the one hand night aircraft operations of integrators and express cargo airlines are vital for physical distribution concepts of various industries, on the other hand negative impacts on the health of residents cause concerns regarding current airport operations and future expansion projects.[110] Therefore, the Commission stated in the White Paper that airport expansion is subject to new regulations aimed to reduce noise caused by aircraft.[111]

Already before the White Paper was published in 2001, steps had been taken to bring forward the phase out of the noisiest aircraft in operation. In 1992, Council Directive 92/14/EEC was implemented to phase out Chapter 2 aircraft in the Community by 2002. Furthermore, Regulation (EC) No 925/1999 of 29th April 1999 prescribed Community-wide operating restrictions of recertified aircraft. This caused an intensive conflict between the U.S. and the EU. In reaction to the inability to reach consensus on stricter aircraft noise standards at the level of ICAO, the EU acted unilaterally and banned older aircraft retrofitted with so called "hushkits", which made them marginally compliant with ICAO Annex 16 Chapter 3 noise standards. While this Regulation was aimed to reduce noise at Community airports it drew heavy criticism from the U.S., as foremost aircraft built by U.S. manufacturers and operated by U.S. cargo airlines where affected by this Regulation. In order to achieve a resolution in this conflict, a new legislation was considered necessary.

XIV.4.6.2. Objectives

With new legislation on airport noise management the Commission basically follows two objectives:

First, it was intended to resolve the hushkit conflict with the USA. The USA filed a complaint at ICAO against the EU-Regulation banning hushkitted aircraft. In the following arbitration process the EU agreed to repeal a general ban of marginally compliant aircraft and to switch over to an airport specific approach for noise management. This EU-wide procedure to manage noise externalities shall have the flexibility to adapt to local circumstances, while it should be in line with Common Market principles to safeguard fair airport competition.

Second, it was intended to put something in place of the "hushkits" Regulation being repealed so as to reduce the noise impacts on residents near airports. The new EU Directive follows the "balanced approach to noise management" as outlined in Appendix C of ICAO Assembly Resolution A33-7, containing the four principal elements of noise management measures, namely reduction at source, land-use planning and management, noise abatement operational procedures and operating restrictions.[112] This balanced approach shall achieve noise reduction at lowest possible cost.

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[110] A recent study for the Commission stated that 360,000-500,000 jobs were directly connected with nighttime aircraft operations; cf. MPD Group (2005), p. 4.

[111] Commission of the European Communities (2001), p. 39.

[112] Cf. ICAO (2001), pp. 15ff.

XIV.4.6.3. Legislative Achievements

On 26th March 2002 the Council and the Parliament adopted Directive 2002/30/EC on the establishment of rules and procedures with regard to the introduction of noise-related operating restrictions at Community airports. The Directive is applicable to all airports with more than 50,000 movements of jet aircraft per year and contains a special provision for airports located closely to city centres. It contains in detail the procedure, which has to be adhered to, if operating restrictions for marginally compliant aircraft are to be introduced at airports after an assessment of other available measures in the run of the "balanced approach".

The Directive had to be transposed into national law by 28th September 2003. However, the Commission has brought forward actions at the European Court of Justice against several Member States for either not transposing the Directive into national law in due time or for failing to implement national legislation fully compliant with the Directive.[113]

In this context Directive 2002/49/EC (environmental noise directive) has to be mentioned as well. This Directive, which is directed at all sources of noise, prescribes *inter alia* for airports the strategic mapping of noise areas by 2007 and the creation of action plans designed to manage noise impacts by 2008.

A proposal for a Directive "on the establishment of a Community framework for noise charges on civil subsonic aircraft", presented by the Commission in 2002 did not find enough support in the Council and was withdrawn in August 2004.[114]

XIV.4.6.4. Institutional and Social Impacts

The primary objective of Directive 2002/30/EC to resolve the transatlantic conflict with the U.S. about hushkitted aircraft has been achieved. The U.S. withdrew its complaint against all Member States but Belgium at ICAO in June 2002.[115]

The Directive leaves a relative wide scope of interpretation for the Member States when transposing it into national law. Some authors criticise the approach of the Commission, as the Directive does not contain specific limits on noise, but only makes references towards a "balanced approach" in implementing noise limitation measures.[116] As the new Directive does not guarantee noise reduction and not even a noise limitation at Community airports, the benefit of the regulation for residents near airports is doubtful. It is also feared that the airport-by-airport-approach will lead to a shift of noisy aircraft towards airports with less stringent regulatory supervision, causing additional nuisances for the residents of these airports, instead of a community-wide phase-out of these aircraft as originally intended by Regulation 925/1999/EC.

The criticism of environmental NGOs is to a lesser extent directed at the Commission or the Directive, but to a higher extent at the national governments of the Member States. They argue that the scope of the national legislation does not fully utilise the possibilities granted by the EU as far as environmental protection is concerned.

ACI-Europe as a representative of European airport operators points out that the Directive 2002/30/EC is only a temporary solution for the phase out of Chapter 2 hushkitted aircraft and no long-term solu-

[113] Cases C-44/05 against Italy, C-71/05 against Luxembourg, C-153/05 against Austria and C-158/05 against Germany, Cf. http://curia.eu.int/jurisp/cgi-bin/form.pl?lang=en. Retrieved 01/08/05.
[114] Commission of the European Communities (2005c), pp. 16f.
[115] Cf. The United States Mission to the European Union (2002).
[116] Cf. Upham, P. (2002), p. 40.

tion.[117] The Directive indeed has a shortcoming, as the increase in movements of less noisy aircraft is also an undesirable situation for many residents near airports. However it is questionable if this is a valid argument, as airports themselves have the ability to create incentives for airlines using less noisy aircraft by the means of noise-related charges, trade of noise permits or self-imposed operational restrictions.

Concerning Directive 2002/49/EC, ACI-Europe criticised already during the legislative process that it was biased "towards regulating environmental noise regarding to the air transport sector" and that "the Directive only makes a small reference towards reduction of noise at source".[118] At this point it must be mentioned that reduction at source does not bring relief in a short time-frame. The introduction of new technologies reducing noise at the source will usually take about 15 to 25 years from the invention up to the point of large scale penetration in practice, so that the reductions will be noticeable at airports. So if the intention is to limit or reduce noise in a shorter time scale other measures than reduction at source are needed. These may be operational or aviation policy measures.

XIV.4.6.5. Economic Impacts

The economic impacts of Directive 2002/30/EC are rather limited, as European airlines have largely phased out hushkitted Chapter 2 aircraft. Nevertheless, as an argument during the conflict about Regulation 925/1999/EC, it was estimated by the U.S. side that a total ban of hushkitted Chapter 2 aircraft would cost U.S. carriers alone about US-$ 2bn, primarily due to a decrease in fleet value or early retirement of concerned aircraft.[119] As Directive 2002/30/EC will be applied on an airport level, the impacts will be considerably lower than under the old Regulation. Carriers from developing countries will be allowed to operate their marginally compliant Chapter 3 aircraft for an additional period of 10 years even on airports with operational restrictions due to an exemption laid down in Art. 6 of the new Directive.

In case an operational restriction is introduced, it can be expected that social costs associated with noise may be reduced. These positive impacts may, however, be offset by an increase in total movements of Chapter 3 aircraft. Additionally, the older aircraft may be rerouted to airports with a less stringent noise regulation, causing additional nuisances for residents located near these airports.

XIV.4.6.6. How far is this a Role of the EU or of other Levels of Aviation Policy

As already stated in the White Paper, the Commission acknowledges that „the European Union has little room for manoeuvre" in the field of noise standards for civil aircraft using Community airports, since „account must be taken of the international commitments entered into by the Member States within the International Civil Aviation Organisation (ICAO)".[120] The conflict with the U.S. concerning hushkitted aircraft has basically made clear that the EU and its Member States have to accept the general rules concerning aircraft noise certification as adopted by ICAO.

Nevertheless, competent authorities in the Member States ultimately have the power to regulate airport operating licenses and could possibly mitigate noise effects by night curfews or operational restrictions. To take the local specifics of an airport into account, the local or regional level of administration may be more competent than the national one.

Besides these "strong" forms of regulation, it is also in the power and in the interest of airport operators to reduce public concerns regarding airport operation and capacity expansion projects with "soft", volun-

[117] Cf. ACI-Europe (2004), p. 7.
[118] ACI-Europe (2000), pp. 1f.
[119] Cf. U.S. House of Representatives (1999).
[120] Commission of the European Communities (2001), p. 39.

tary noise mitigation measures, such as passive noise insulation or compensation payments for the toleration of noise.

XIV.4.6.7. Assessment

The legislative action taken so far concerning a Community framework for airport noise management must be seen primarily in the context of the hushkit conflict of the EU with the USA. Directive 2002/30/EC basically resolved this conflict.

However, it does not give any guidance on the relief of nuisances for residents near airports concerning aircraft falling under Chapter 3 or the future Chapter 4 of ICAO Annex 16. Although these aircraft are considerable less noisy than hushkitted Chapter 2 aircraft, the growth of total movements severely affects residents in the approach and departure flight paths of major airports. To reduce these nuisances and bring relief to residents near airports, it should be assessed how the "balanced approach" as adopted by ICAO could be used to achieve a higher level of sustainability with a combination of economic and political instruments.

Assessment: Measure has been implemented; however, substantial impact on noise abatement is very limited. Therefore the impacts on realising the White Paper's objective of achieving a more sustainable air transport system are only marginal.

XIV.4.7. Measure 23: Protection against Subsidisation and unfair Pricing Practices in the Supply of Air Services from Third Countries

XIV.4.7.1. Description

Measures against subsidisation and unfair pricing practices in the supply of air services from third countries were not mentioned in the White Paper. These issues came on the Commission's agenda after 2001, as the international aviation industry slid into its worst crisis ever. An overall economic downturn that started in early 2001[121] combined with the terrorist attacks of September 11, 2001 and the subsequent events had severe impacts for the years to follow.

Especially the U.S. carriers were heavily hit by the terrorist attacks, because first of all, this event caused a four-day closure of the U.S. airspace, i.e. the domestic market on which the U.S. airlines are highly dependent was completely shut down. Secondly, in the aftermath passenger volumes decreased drastically, leading to even higher losses. In addition, upgraded security measures in aircraft and at airports eminently increased costs.

To compensate for the losses directly attributable to the closure of the U.S. airspace and security necessities, "the US government granted generous emergency funds to keep its major carriers alive; an immediate $3 billion to upgrade security […] $5 billion in direct aid and another $10 billion in loan guarantees."[122] One could argue that at least the US-$ 3bn additional expenditures in security upgrades can be considered as a general responsibility of the state and therefore not relevant for competition. The payment of US-$ 5bn to the airlines is directly relevant, while the loan guarantees will help the troubled carriers to reduce their cost of capital, because creditors will demand a lower interest rate due to the credit risk reduction.

[121] Cf. Ehmer, H./Heinrichs, E. (2003), p. 131.
[122] Soames, T./Goeteyn, G./Camesasca, P. D. (2004), p. 116.

Community carriers could not benefit that much from state aid in this crisis, as EU legislation provides for strict rules concerning government aid, as laid down in Art. 87 of the EC Treaty. However, several EU carriers did receive some compensation, in the case of the German carrier Lufthansa € 70m.[123] This did cover the direct losses resulting from the U.S. airspace closure, but not the drop in demand and revenues following the events. Basically these payments were in line with the EC Treaty, which provides in Art. 87 (2) that state aid is compatible with the Common Market in case of "exceptional occurrences".

Nevertheless, the aid granted to Community carriers is not comparable to the amounts granted to the U.S. aviation industry. Although the U.S. serves as the prime target of complaints, the allegations of unequal competition also include carriers from other countries. Thus the Commission feared that the practices involving state aid could lead to distorted competition. In the case of subsidised third country airlines it was apparent that these carriers include subsidies in their price setting considerations, i.e. setting a lower price than without subsidies and therefore gaining an unfair competitive advantage over unsubsidised airlines. While within the EU state aids are generally limited to certain exceptions and in the area of goods trading the EU has the ability to complain at WTO in the case of unfair trading practices, before 2002 there was no instrument to do likewise in aviation.

XIV.4.7.2. Objectives

Measures in the area of protection against subsidisation and unfair pricing practices of third country air carriers fit into the objective of the White Paper of taking the internal air transport acquis to an external dimension. The Commission feels confident about the prospect to defend the achievements of liberalisation in the air transport sector within the Community also in the relation with third countries. This includes "free access to traffic rights, equal conditions of competition, protection of safety and the environment and the elimination of property rights."[124]

The Commission therefore was motivated to establish a framework that guarantees equal conditions of competition for carriers from the Community and for airlines from third countries.

Besides this economic main objective, another intention of the Commission has been identified by the then Minister of State, of the Department of Transport of the United Kingdom, Mr John Spellar: "We believe that the proposal is intended primarily to balance out executive powers enjoyed by the US President, rather than to introduce an instrument which will be used extensively in practice."[125] As this quote points out, legislation in this field must be seen in the context of the ongoing negotiations between the Commission and the U.S. on a EU-US open aviation area. In fact, the USA have similar instruments against dumping prices, regulated in Section 41310, Title 49 of the U.S. Code of Federal Regulations. It is therefore intended to strengthen the position of the Commission in the negotiations with the U.S., independently from the question if the legislation emanating from this proposal will be applied in practice.

XIV.4.7.3. Legislative Achievements

The proposal to protect Community carriers from unfair competition by third country carriers that benefit from state aids was implemented as Regulation (EC) 868/2004 on 21st April 2004.

Regulation (EC) 868/2004 allows for redressive measures in the preferred form of duties to be imposed on such carriers that are found to have profited from subsidies after an investigation procedure by the Commission which is laid down in the Regulation. The Regulation clearly rules on the existence of subsi-

[123] Cf. Zimmerer, F. (2003), p. 49.
[124] Commission of the European Communities (2001), p. 100.
[125] House of Commons European Scrutiny Committee (2003), pp. 31f.

disation, namely when a government, regional body or other public organisation makes a financial contribution that confers a benefit and may take the form of:

- "grants, loans or equity infusion, potential direct transfer of funds or the assumption of liabilities;
- revenue that is otherwise due but which is foregone or not collected;
- the supply of goods or services other than general infrastructure, or their purchase by a public body;
- payments by a public body to a funding mechanism or the entrusting to a private body of one of the functions described above."

The distinctive investigation procedure that shall clarify on the existence of a harmful non-commercial advantage of a third country carrier over a Community carrier can lead to four possible scenarios that shall counterbalance the unfair advantage:

- provisional measures: these may be imposed for a maximum period of six months if it is determined that injury is being caused and that the Community interest calls for intervention to prevent further such injury;
- termination of the proceedings without measures being imposed: this happens when the complaint is withdrawn or a satisfactory remedy is obtained;
- definitive measures: these will be imposed when it is established that unfair pricing practices or subsidies which cause injury exist. The level of measures imposed must not exceed the level of the subsidies or the difference between the fares charged by the two air carriers concerned (Community and non-Community);
- undertakings: an investigation may be terminated without measures being imposed if the public authorities or non-Community air carrier concerned undertake to eliminate the subsidies and revise its prices in order to prevent further injury. In the event of an undertaking being breached, a definitive measure will be imposed.

It is applicable only in cases when bilateral ASAs of the Member States with the respective third countries do not address competitive distortions. This is another indication for the relative small scope of application of this Regulation in practice.

XIV.4.7.4. Institutional Impacts

With Regulation (EC) 868/2004, the Commission has implemented an instrument with which it gains basically two advantages on the institutional side:

1. As the Commission's plan on Community external relationships in aviation is to overcome the Chicago framework by replacing more and more bilateral ASAs with Community ASAs, the Regulation would already provide a key element of these future ASAs. To a certain extent the Commission would in this case, for which the OAA shall be the first template, demonstrate an attitude of "one regulation, one negotiator, one state".
2. With the Regulation in force, the Commission posses a potentially powerful instrument to lay pressure on third countries in ASA negotiations when it would find third country carriers had an unfair competitive advantage over Community carriers. This could probably also be used in the ongoing EU-US negotiations.

So, although currently the opportunities of the regulation may seem to be rather shallow, with a special emphasis on the "external dimension" it can reach a higher degree of importance in the long-run.

XIV.4.7.5. Economic impacts

To analyse the economic impacts of Regulation (EC) 868/2004 it seems worthwhile to have at first a look at some facts concerning state subsidies for airlines.

Historically, the international aviation industry is characterised by protective behaviour of states, respectively its policy makers. This protective behaviour is more present in the aviation sector than in other industries, as policy makers tend to associate psychological aspects such as prestige with this particular industry, in addition to its economic importance.[126]

Protective behaviour by policymakers does not only become apparent through restrictive anti-competitive bilateral air service agreements or direct financial aid given to carriers which would otherwise exit from the market. These kinds of instruments can in most cases fairly easily be identified. However, in reality more subtle forms of support that distort competition are used.

For example, the U.S. follows a strict "Fly America" policy codified in Title 49 Section 40118 of the U.S. Code of Regulations, meaning that government officials and military personnel exclusively make use of U.S. carriers where available.[127] This generates additional revenue for U.S. carriers estimated to be in the hundreds of millions of dollars.[128] Besides this, tenders for cargo and mail transport are exclusively open to U.S. carriers participating in the Civil Reserve Air Fleet. The CRAF provides additional transport capacity to the U.S. military using aircraft from civil airlines and will be activated during major crises, like the U.S. attack on Iraq in 2003.[129] This system has a particular benefit for the airlines as aircraft are used for military purposes during crisis times, where civil demand is flagging anyway. Otherwise, these aircraft would most likely have to be parked idly in the desert. It is far from being realistic to say that the new Regulation could be applied to force the U.S. to give up the anticompetitive behaviour outlined above. When it comes to national security, the U.S. have already shown in the past a very limited willingness to negotiate, as for example it was the case with the transmission of sensitive passenger data.

Another distortion criticised by European airlines is war-risk insurance coverage provided by the U.S. government to U.S. airlines under the Terrorism Risk Insurance Act of 2002.[130] Although the market for this kind of insurance is working properly again and European carriers have contracted new commercial coverage, the U.S. government still provides its airlines with this cost advantage. This led to a formal complaint with the Commission by British Airways in June 2004.[131]

Another example of what can be interpreted as indirect state aid for airlines can be found in the Arabic world. The Emirate of Dubai does neither levy capital nor corporate income taxes. Its 100 per cent state-owned carrier Emirates therefore has a competitive advantage over carriers located in countries that levy corporate income taxes. Though the airline which is poised to become a major world-wide carrier claims not to receive any subsidies from the government (which is questioned by competitors), it could subsequently finance its ambitious expansion plans to a high degree with retained earnings, while Lufthansa or British Airways have to raise additional capital on the equity or credit markets. Even an experienced economist would be in serious trouble when trying to quantify the effects of these advantages on pricing behaviour. Therefore, the applicability of Regulation (EC) 868/2004 is also in this case far from being easy.

[126] Cf. Zimmerer, F. (2003), p. 3.
[127] Cf. U.S. Code (2003).
[128] Cf. Brattle Group (2002), p. 7-4.
[129] Cf. DoD (2003).
[130] Cf. U.S. House of Representatives (2002).
[131] Cf. Corduant, V. (2004).

XIV.4.7.6. Changes needed to achieve the White Paper's Objectives

With the prevalence of bilateral ASAs, the Commission's scope to act practically in cases of unfair competition remains limited. One possibility to create a more efficient governance and dispute settlement could be the inclusion of international aviation under the auspices of WTO or GATS as international industries are usually governed by these organisations.

The WTO expressively forbids subsidisation of any kind.[132] Unfortunately, the aviation sector is still exempted from WTO governance, as it is subject to the 60-year-old Chicago Convention. The Commission's White Paper and other proposals by the European Parliament suggest a deeper integration of international air services into the scope of WTO/GATS[133], but it is questionable how and when this can be realistically expected to happen.

XIV.4.7.7. How far is this a Role of the EU or of other Levels of Aviation Policy

In the related area of trading in goods, Member States have largely transferred their competences to the EU in the field of the imposition of duties, customs procedures and the like.

As cited in the regulation, it is also possible for the Member States to cover the subject within their bilateral air service agreements with third countries. In this case, the rule of subsidiarity applies, so that the bilateral ASA has precedence over the EU Regulation.[134] This seems to be in contradiction to the "normal" EU-position to claim the right to negotiate. But in this case here a big advantage lies in the bilateral ASA because once the topic is covered by the ASA both states have agreed on a common solution, whereas the EU-Regulation is a unilateral one which needs not necessarily to be accepted by other states.

XIV.4.7.8. Assessment

The outlined considerations for this add-on measure to the contents of the White Paper show primarily the difficulty of evaluating third country's state aid and subsidisation behaviour. Furthermore, even the new Regulation acknowledges that primarily the Member States themselves with the provisions outlined in their bilateral ASAs are in charge to safeguard fair competition. As bilateral ASAs between the EU and third countries will develop only very slowly (in fact the Commission has the mandate to negotiate such an agreement with the U.S. only), the practical applicability of the new Regulation in practice will remain very limited for the time being.

Assessment: On track – but it remains to be seen in future, if the Regulation will be applied in practice. However, the Regulation is an element to show third countries that the Commission has distinctive competences also in external relations. The measure therefore contributes to the objectives outlined in the White Paper's policy package "Managing the globalisation of transport".

[132] Cf. Zimmerer, F. (2003), p. 28.
[133] Cf. Commission of the European Communities (2001), p. 91 and European Parliament (2002), p. 8 and p. 40.
[134] Regulation EC No 868/2004, recital 5.

XIV.4.8. Measure 24: Safety of Third Country Aircraft

XIV.4.8.1. Description

Air transport is one of the safest modes. To maintain the high degree of safety, an effective system of aviation law and its enforcement must exist. To evaluate the safety of third country aircraft in the Community, it is reasonable to look at how the international safety system in civil aviation works.

According to the international aviation framework, the Chicago Convention, the establishment of standards and recommendations (SARPs) lies in the hands of ICAO. However, the SARPs are not directly legally binding and it is the task of the states to implement and enforce them on a national level. According to this system, national authorities oversee the safety of aircraft and operators registered in the country. But not every state has the financial or organisational means to set up a system that is able to guarantee a high degree of safety. An analysis by ICAO in the run of the Universal Safety Oversight Audit Programme (USOAP) has revealed that a strong correlation between deficits in the implementation of safety standards and accident rates exists. Especially in many African states the USOAP auditors have found deficits that result in a relatively low level of safety.[135]

As it is commonly known that safety standards vary strongly throughout the world, ECAC established in 1996 the Safety Assessment of Foreign Aircraft Programme (SAFA). While the USOAP programme of ICAO is intended to assess the general aviation safety system of a country, SAFA directly addresses the safety situation of aircraft and their operators flying to ECAC member states. In the run of this programme, auditors conduct spot checks of foreign aircraft to assess the compliance with a list of 54 inspection items. All findings are entered into a database, where the information is made available to draw conclusions about areas of special concern. Since 1996, more than 24,000 SAFA checks have been performed.[136]

XIV.4.8.2. Objective

In the White Paper it is stated that the Commission's objective is not only to improve aviation safety for airlines from the Member States, but also for third country air carriers. To ensure safety for passengers travelling on third country aircraft and people living near airports a framework to guarantee minimum safety standards was to be developed.[137]

The need for a harmonisation of safety standards resulted from the fact that under the rules in place at the time of the release of the White Paper checks for the safety of third country aircraft were under the sole responsibility of national civil aviation authorities. In the past, this often led to an incongruent treatment of airlines that were suspected to have committed safety violations. An airline banned in one Member State, but not from others effectively had the opportunity to evade flight restrictions with the diversion to Member States with less stringent safety checks.

The compliance with safety regulations also has repercussions on competition in the air transport sector. It is feared in this regard that some third country airlines could be tempted to reduce costs by means of non-compliance with safety standards, therefore achieving a competitive advantage over safety-conscious airlines which could have potentially dangerous implications for passengers and persons on the ground alike.

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[135] Cf. ICAO (2004), p. 11.
[136] Cf. JAA (n.d.).
[137] Cf. Commission of the European Communities (2001), pp. 40f.

XIV.4.8.3. External Developments since 2001

The accident of an aircraft registered in Egypt carrying mostly French tourists near Sharm-el-Sheik on January 3, 2004 heightened the attention concerning the safety of third country aircraft. While the cause of this particular accident is still under investigation, at the time of the accident the carrier concerned was banned to fly to Switzerland due to objections in safety. In the past, the information about safety objections was not generally released to the public or shared with other civil aviation authorities. Already in 1996 tourists from Member States of the Community where affected by insufficient safety of third country aircraft when a Turkish airliner with 189 people aboard, mostly German tourist, crashed off the coast of the Dominican Republic.

XIV.4.8.4. Legislative Achievements

On April 21st 2004 Directive 2004/36/EC concerning the safety of third-country aircraft using Community airports has been adopted by the Parliament and the Council.

The main aspects of the Directive are a harmonised approach in the enforcement of international safety standards, standardised forms for ramp inspections and data collection, improved exchange of information, standardised procedures for grounding of aircraft, ban of operations and implementation of safety improvement measures

The Directive has entered into force on April 30, 2004; however, the Member States have time until June 30, 2006 to transpose it into national law.

XIV.4.8.5. Institutional Impacts

The action in the field of third country aircraft safety actually concerns the enforcement of basic safety standards outlined in the Annexes of the Chicago Convention. By international law, the states where airlines and aircraft are registered are responsible to ensure that operators adhere to the safety provisions. The Commission is concerned that these standards not always have been adhered to. This notion is supported by the final report on the Safety Assessment of Foreign Aircraft (SAFA) for 2004, published by ECAC. It states that "information available to ICAO shows that a significant number of Contracting States have experienced major difficulties in carrying out their safety oversight functions".[138]

The SAFA programme, initiated in 1996 by ECAC already features many aspects outlined in Directive 2004/36/EC. Almost all Member States of the Community already participate actively in the SAFA programme; therefore, the implementation of the Directive will actually be rather straightforward and uncomplicated. Only minor adjustments of the SAFA programme will be needed to make it compliant with the Directive.

XIV.4.8.6. Economic Impacts

The economic impacts of the Directive and its implementation into national law can be considered as minor. As there is already a well-proven system of safety checks in place (SAFA), the costs of implementation are low.

On the benefit-side, besides the positive impacts on safety and a reduction of costs associated with accidents, a positive impact on competition can be expected. When a harmonised system of safety checks and the resulting consequences (operative bans that cannot be evaded geographically) is in place, carriers from

[138] ECAC/JAA (2005), p. 3.

third countries will not be able to achieve a competitive advantage over Community carriers with savings achieved from disrespect of safety procedures.

XIV.4.8.7. Changes needed to achieve the White Paper's objectives

Although air safety performance in the Community is on a high level, ramp-checks performed under the SAFA programme have indicated a high number of significant and major findings causing some concern. It is likely that the Directive 2004/36/EC will enhance the information flow between the civil aviation authorities of the Member States.

However, two major aspects are not included in the current legislation. Firstly, it still remains at the Member States' discretion how and how many checks are to be performed. This is a severe loophole in the efforts to achieve a harmonised approach for safety checks. Secondly, the question if information about safety findings or operational bans shall be released to the public still remains disputed. Proponents for a release of this data emphasise a better transparency resulting in a need for airlines to act in a responsible manner when publications about safety objections potentially have a severe impact on the respective carrier's commercial performance. Opponents deny this notion – mainly with the argument that the public might misinterpret the complex data and that airlines might refuse to cooperate in voluntary programmes when data will be published.

The most recent Communication from the Commission[139] clearly indicates a very positive stance towards a higher degree of transparency. In the Communication the Commission proposes to compile and publish a list of air carriers banned in the Member States. With such a list, the EU would be a world-wide leader in consumer protection and transparency, as this information is not yet published anywhere in the world.

The Commission also wants to give all passengers the right to know which airline will be the actual operating carrier. In the past, this information was mandatory for flights booked in the CRSs, but not for flights that were part of a travel package. This is also an important step to strengthen the rights of passengers, which is an objective of the White Paper, too.

As the ramp checks are associated with considerable costs, a system of fines for violations of safety standards could be envisaged. This would not only generate an economic incentive for the foreign air carriers to comply with safety regulations, but also cover the costs of the checks.

XIV.4.8.8. How far is this a Role of the EU or of other Levels of Aviation Policy

According to the Chicago Convention, the enforcement of safety standards concerning maintenance and airworthiness of the aircraft rests with the state of registry, while matters concerning the operation of aircraft rest with the State of Operation, i.e. where the airline is based.[140] Usually, both are the same, as airlines either do voluntary or out of legal requirements register their aircraft in the State of Operation. ICAO lays out standards and recommended procedures (SARPs), which form the basis of the States' regulatory practice. The authorisation to conduct ramp checks is usually included in bilateral air service agreements.

It would be quite an improvement if all airlines would find the same control procedures with the same frequency all over the EU. There a centralisation of standards might be helpful. On the other hand the execution of checks should stay in the hands of national institutions, if they can be faster and more flexi-

[139] Cf. Commission of the European Communities (2005d).
[140] Cf. JAA (n.d.).

ble. So a close cooperation between the EASA as the probable responsible institution in the EU and the national administrations is needed.

XIV.4.8.9. Assessment

Directive 2004/36/EC aims to codify the procedures already in place by the SAFA programme. Although the SAFA programme is in place since 1996, an improvement in data exchange could help to improve consistent decision making throughout Europe.

A critical aspect remains as the spot checks under the SAFA programme or the Directive 2004/36/EC are rather cursory. Although obvious safety problems can be addressed, a thorough analysis of the condition of aircraft will be difficult to achieve. A further step to harmonise procedures for ramp checks could be achieved when EASA would take over responsibility for these checks.

Assessment: The measure is on track – minor changes are probably needed to achieve the objectives more thoroughly: harmonised flight bans to avoid evasion to less stringent Member States and a better information policy for passengers which airlines are banned to operate to a Member State and the reasons for it.

XIV.4.9. Measure 25: Air Service Agreements with Third Countries

XIV.4.9.1. Description

Within international civil aviation, air service agreements (ASAs) represent an important factor, as they define the scope of air services between two nations. The international framework governing the conclusion of ASAs was created with the Chicago Convention in 1944 "on the principle of national sovereignty and intergovernmental negotiations".[141] Owing to this framework, ASAs have been concluded on a bilateral basis between sovereign national states. They were used for the purpose of securing the "balance of benefits" for both concluding countries, limiting competition for instance by regulating access to certain markets in order to protect the flag carriers as only carriers designated by the respective governments were allowed to fly between airports in the respective countries. This behaviour is attributable to the fact that commercial air transport was seen as a prestigious industry of national interest and also because of its economic influence due to its ability to foster international commerce and travel.[142]

For intra-EU air services provided by carriers registered in the Member States, bilateral ASAs lost their commercial relevance with the implementation of the third liberalisation package in 1993. Since the completion of the Common Market for air services within the EU in 1997, carriers from each Member State are allowed to offer air services between any Member States or even within another Member State (cabotage). Yet the granting of traffic rights between a Member State and a third country outside the EU remained in the hands of the government of the particular Member State concerned. In practice, this meant that airlines were generally not allowed to operate to third countries from Member States other than their own country of registration. Therefore, competition on direct non-stop routes to third countries was limited to the services of the respective Member States' and third countries' air carriers.

Even the Open-Skies-agreements concluded by several Member States mainly with the USA during the 1990s, contain clauses that connect traffic rights to the nationality of the carrier, though in general they provide a very liberal framework. Airlines not substantially owned or controlled by one of the concluding

[141] Cf. Flouris, T. G. (2003), p. 20.
[142] Cf. Zimmerer, F. (2003) pp. 24f.

parties of the respective bilateral ASA generally are not allowed to offer air services between those countries.[143]

In the White Paper the Commission expressed its concern that these nationality clauses have negative effects on competition and the structure of the European airline industry. In addition to the anti-competitive nature of nationality clauses in bilateral air service agreements, they avert a consolidation of the European airline industry by mergers and acquisitions, which would result in the loss of traffic rights for one airline when changing nationality. Currently airlines circumvent these traffic rights limitations with alliances.

From the Commission's point of view the Member States concluding bilateral ASAs with third countries containing nationality clauses were contravening the EC-Treaty, as the provisions concerning the freedom of establishment, laid out in Art. 43 of the Treaty had been violated. Therefore, the Commission had already contested the bilateral ASAs between eight Member States and the USA in the European Court of Justice at the time the White Paper was written.[144]

The Commission saw the solution for this problem in taking over the competences for negotiating ASAs with third countries from the Member States.

XIV.4.9.2. Objectives

The Commission's main objective in the field of air service agreements with third countries is to enhance competition and to strengthen the position of the European Union and of European carriers, especially as far as the negotiations with the USA are concerned.

Regarding international aviation negotiations in the White Paper emphasis is laid on the continuous extension of the Community's influence and power in international organisations governing aviation, i.e. primarily the International Civil Aviation Organization (ICAO), but also ECAC and EUROCONTROL. While the EU already acceded to EUROCONTROL, the Commission is still working towards a full membership for the EU in ICAO.

The Commission stated that it is urgent for the European Union to "speak with a single voice in defense of its industrial and environmental interests in the field of air transport".[145] The argument is that the EU as one of the world's leading commercial powers has almost no influence as a whole on international aviation negotiations, but rather that the Member States individually take part in such negotiations in pursuit of their own interests. These interests are perceived to be not always beneficial for the Union's consumers, as limitations in market access are anti-competitive, leading to higher prices than under a regime of free market access for airlines from all Member States.

This is also the reason why the Commission sees the negotiation of bilateral ASAs with third countries by each Member State separately as a handicap. In fact, the Commission wants to receive the mandate to act as negotiator with third countries instead of the national governments – which would mean a renouncement of sovereign rights of the Member States and a fundamental change of the legal framework governing international aviation relations for over 60 years.

The Commission's idea is to "base these agreements with its main partners on principles guaranteeing free access to traffic rights, equal conditions of competition, protection of safety and the environment and the

[143] Cf. for instance Article 4 of the air transport agreement between Germany and the USA, cf. Bartkowski, D./ Byerly, J. (1997), p. 33.
[144] Cf. Commission of the European Communities (2001), pp. 99f.
[145] Cf. Commission of the European Communities (2001), p. 97.

elimination of property rights."[146] The Commission lays down the principles for a "common transatlantic area" with the USA, creating the "biggest liberalised airspace in the world"[147] that is supposed to overcome the traditional bilateral ASAs between the Member States and the USA currently in existence. Besides the proposed common transatlantic area which will eventually become known as "Open Aviation Area" (OAA) the Commission furthermore plans to examine possible Community-wide ASAs with "other major partners, in particular Japan and Russia".[148]

So, while on the one hand, the Commission regards the existing bilateral ASAs of the EU Member States as anti-competitive and against the EC Treaty, on the other hand there is a second aspect that is vital to the Commission in terms of external aviation policy. This aspect is to strengthen the external powers of the Community, and this is twofold as well: first, the Community's power in international organisations like ICAO, secondly the Communities' power in strengthening the European industrial interests. This last point may show the Member States that it may be a win-win-situation if they transfer some of their competences to the EU. This last point may be especially important in the ongoing consolidation process in Europe with the specific ownership problems mergers face today. Both dimensions of the external aviation policy, the competition related and the external power related, proposed in the White Paper are closely related to each other.

Bilateral ASAs of EU Member States with the USA certainly are the Commission's toehold for its proposals on the aviation transport policy laid down in the White Paper. They secure an oligopoly market situation for the few (in some cases only one) major carriers of the respective Member State and basically six internationally operating U.S.-carriers (United Airlines, American Airlines, Continental Airlines, Delta Air Lines, US Airways and Northwest Airlines), while providing entry barriers for prospective new entrants. Hence the 'Open Skies' are indeed anti-competitive with regards to the European Common Market. Furthermore on the European side there is a number of about 25 airlines flying on the North Atlantic competing with the six mentioned U.S. airlines. With the current regulation of the ASAs a consolidation on the European side seems to be impossible, or at least it is very complicated not to lose the traffic rights, as the case of Air France and KLM has shown.

The original idea behind these bilateral agreements, especially with the 'Open Skies' type ASAs, was to further liberalise the markets of the signatory countries with regards to the aviation industry's international context, expanding the freedoms of the air for the affected airlines. This included in particular the grant of fifth freedom (or beyond) rights for the designated carriers, meaning "the right […] to put down and to take on, in the territory of the first State, traffic coming from or destined to a third State".[149]

While seven Member States have 'Open Skies'-agreements that included nationality clauses with the USA, the UK still has a more restrictive bilateral ASA, i.e. the Bermuda II agreement signed in 1977.[150] This agreement limits in particular transatlantic traffic rights between London Heathrow, UK's most important international airport, and a limited number of destination airports in the USA to only two carriers from each country (currently American Airlines/United Airlines and Virgin Atlantic/British Airways). Additionally Bermuda II limits the number of flights between the two countries.[151] Bermuda II can be considered to be the most restrictive bilateral ASA a Member State still has in force with the USA. Other Mem-

[146] Cf. Commission of the European Communities (2001), p. 100.
[147] Cf. Commission of the European Communities (2001), p. 100.
[148] Cf. Commission of the European Communities (2001), p. 100.
[149] ICAO (n.d.).
[150] Cf. Brattle Group (2002), p. 1-8.
[151] Cf. Brattle Group (2002), p. 1-8.

ber States that do not have agreed on 'Open Skies' but on more restrictive bilateral ASAs are for instance Greece, Spain and Ireland.[152]

XIV.4.9.3. External Developments since 2001

The Decision of the ECJ and its Consequences

Corresponding with the idea of an urgent need to "speak with a single voice […] interests in the field of air transport" formulated in the White Paper[153], in the cases brought to the ECJ, the Commission claimed the Community had the exclusive power to negotiate bilateral ASAs as opposed to the Member States. Furthermore it asked the Court to investigate in the validity of the nationality clauses of the existing bilateral ASAs of the eight Member States it fought against.[154]

As described earlier, from the Commission's point of view nationality clauses in the existing bilateral ASAs of the Member States with the USA contravene European law. The cases brought to the ECJ[155] in 1998 were supposed to clarify on three aspects[156]:

1. The external competence of the Community with regards to the report 1/76 of April, 26, 1977
2. The external competence of the Community with regards to the AETR doctrine
3. The clause concerning the ownership and control of carriers ('nationality clause') as an infringement to Article 43 of the EC Treaty, the right of establishment.

The most important goal for the Commission was to disable nationality clauses and to give EU carriers 'Community Nationality' to enable competition between European carriers on transatlantic routes from and to each Member State.

With regards to the internal EU economic policy, this step is necessary, since it is supposed to further deregulate the European aviation industry and release it to market powers. The regulations of the existing ASAs with nationality clauses actually impede the completion of the liberalisation of the internal European market, since access to third country markets is not free for any Community carrier but only for those airlines designated by the signatory countries, subject to national ownership and control. "In practice, these clauses prevent carriers from fully benefiting from the Community market and consumers from gaining the benefits of increased competition."[157] Especially potential mergers and acquisitions between EU carriers are obstructed by these clauses because an airline that is not owned and effectively controlled by nationals of the contracting states would lose its traffic rights. The outcome of this economic problem is that consolidation in the aviation industry in Europe is long overdue, though recently, first attempts have been taken through mergers and acquisitions. The takeover of KLM by Air France is an example for a beginning consolidation process, followed by the takeover of SWISS by Lufthansa. However, KLM as well as SWISS still remain to a certain percentage – at least for a transitional period - in Dutch respective Swiss interests to avoid losing the traffic rights from the Netherlands respectively Switzerland to third countries. While after this transitional period KLM and SWISS will ultimately not be substantially owned by the nationals of its prime place of business and country of registration anymore, it is argued that the importance of legal ownership/control provisions in bilateral ASAs is reduced in a greater policy context. Although nationality clauses remain in bilateral ASAs, situations exist where an informal agreement be-

[152] Cf. Brattle Group (2002), p. iii; it should be taken into account that this was before the enlargement of the EU in 2004, some of the newly accessed member states do not have open skies either.
[153] Cf. Commission of the European Communities (2001), p.
[154] Cf. Soames, T./Goeteyn, G./Camesasca, P. D. (2004), p. 125.
[155] Cf. Cases C-466/98, C-467/98, C-468/98, C-469/98, C-471/98, C-472/98, C-475/98 and C-476/98.
[156] Cf. Bentzien (2003), p.1.
[157] see Commission of the European Communities (2003), p.3 [COM2003/94 final]

tween governments is reached that the provisions will be waived.[158] However, this situation is highly dependent on the political relations between the countries concerned and does not offer legal certainty, which will be desired by the respective airlines and investors.

Finally, on November 5, 2002 the European Court of Justice ruled in the cases. Although the Court did not agree with the Commission's claim of exclusive Community competence for conducting ASA negotiations with third countries, it did, however, decide that the aforementioned nationality clauses were indeed contravening the EC-Treaty.[159] Therefore the Commission was at least partly successful with its claims.

Direct Consequences for the Member States and their external Aviation Relationships

The cases before the ECJ were primarily concerned with the 'Open Skies' type agreements between seven (out of at that time 15) Member States of the Community and the USA plus the Bermuda II agreement between the UK and the USA. However, the decision *de facto* affects all ASAs containing nationality clauses concluded by Member States, a total of more than 1,500 agreements.

With the required modification of nationality clauses the Member States are forced to open the aviation markets with third countries to all EU carriers, so that for instance Air France would be legally allowed to offer direct air services from Frankfurt to New York. However, it remains questionable if these services will materialise. Incumbent carriers did not offer air services abroad from their home bases after the liberalisation of the internal market in 1997 on a large scale, simply because this did not fit into their hub-and-spoke concept and it was rarely possible to gain additional slots at the most attractive airports in the EU. Therefore, although legally feasible, practical market entry barriers did impede an internationalisation of traditional carriers in this regard.

Nevertheless, the Common Market for air services has – mostly unpredicted – lead to a rise of low cost carriers offering point-to-point air services independent from their country of registration. The liberalisation of market access for air services between a Member State and third countries for all carriers registered in the EU could possibly result in a likewise emergence of long-haul low-cost-airlines, using secondary airports and therefore circumventing congested hubs. As traditional hub carriers are highly dependent on feeder flights from their own short-haul network to fill long-haul flights, it makes little sense for them to let originate long-haul services outside their hubs.

The ruling does, however, not require the Member States to hand over their negotiation competence with third countries to the Community, except in fields that lie already in the Community's competence, such as CRSs, slot allocation procedures or fares.

Some European aviation law experts regard the ECJ's decision as the take-away of the "very reason for the Member States to keep exclusive control over the negotiations of bilateral ASA as they were no longer able to reserve traffic rights to their own national carriers".[160] It might be true that the reservation of traffic rights to national carriers has been a major consideration for governments in the past, especially when national carriers were still state-owned, highly prestigious 'flag-carriers', in which the respective governments had a direct financial and a high degree of social interest. In the liberalised internal EU market existing today, this assumption has mostly lost its timeliness. First, most European big player airlines today are privatised or at least partly privatised,[161] so governments do not necessarily have a direct financial interest

[158] Cf. Mendes de Leon (2004), p. 362.
[159] Cf. Soames, T./Goeteyn, G./Camesasca, P. D. (2004), p. 126.
[160] Cf. Soames, T./Goeteyn, G./Camesasca, P. D. (2004), p. 126.
[161] Cf. Doganis, R. (2001), p. 202.

in their airlines anymore.[162] Second, the internal EU liberalisation with the result of a multilateral deregulated aviation market within the Community has been accepted and supported by the Member States as well, albeit exposing their home-markets to foreign carriers.[163] For example British Airways has used this right to step into the German domestic market with its subsidiary Deutsche BA, attacking Lufthansa after the internal deregulation, albeit not commercially successful.[164]

International aviation law, as it is laid down in the Chicago Conference in 1944, is based on the sovereignty of states. All Member States of the EU are *de facto* sovereign states and as such signatory countries of the Chicago Convention. Therefore, the ruling of the ECJ cannot be considered to be the take-away of the reason to keep control over bilateral ASAs of the Member States. The very first reason to uphold the authority over bilateral ASA negotiations for the Member States is that they are actually bound by their signature under the Chicago Convention. However, the ECJ ruling can be considered as an attempt to withdraw a bit of sovereignty from the Member States, as they are now forced to accept and even actively support the entrance of other Member States' carriers into their aviation markets with the USA. The objective will be to convince the Member States that it is in their public interest that the negotiations are done by the EU. So it has to be emphasised that the interests of the consumers together with the possibilities for the alliances are more important than the shift of competences towards EU institutions.

The Commission's interpretation of the ECJ ruling

As the proposal of the White Paper already suggests, the next milestone, the EU aviation policy is heading for is the creation of a "Common transatlantic area".[165] Although the ECJ ruling did not agree with the Commission's point of view regarding the Community's exclusive external aviation competence, the Commission interpreted the decision on the bilateral ASAs of the Member States in that way as it would justify Community-wide negotiations with the USA[166], a long wanted goal of the Commission. So, the Commission did not find it sufficient to adapt the bilateral ASAs Member States concluded with the USA to make them compliant with the ECJ decision. In general, it wants the Member States to refrain from taking any further bilateral actions in the field of aviation without having clarified their compatibility with Community law.[167] Subsequently, the Commission urged to receive the mandate from the Council to negotiate with the USA, Japan, Russia and China.

In the meantime, as the Member States are reacting rather slowly on the ECJ decision, the Commission has sent letters of formal notice and even started infringement procedures against the Member States that did not act to bring their ASAs with the USA in line with the court's judgment.[168]

In reaction to the ECJ ruling, a low-key alternative to a mandate of the Commission to negotiate all new bilateral ASAs or to the individual amendment of each of the more than 1,500 ASAs Member States have concluded with third countries has been developed. The Council has awarded the Commission a mandate to negotiate with third countries only with regards to the nationality clauses. The individual bilateral agreements as such stay valid. In the first half year of 2005, the Commission has concluded agreements on the removal of nationality clauses with 15 countries, namely Chile, Georgia, Lebanon, Azerbaijan, Croatia, Bulgaria, Romania, Albania, Bosnia-Herzegovina, Macedonia, Singapore, Morocco, Ukraine, Australia and

[162] On the other hand of course, prestigious reasons for protecting national carriers and opportunistic behaviour of national policy makers can be assumed to still have some value for certain Member States.
[163] Cf. Marchick, D./Newman, D. (2002), p. 451. As long as the signatory countries, i.e. the Member States are sovereign states under international aviation law, this agreement can be seen as a multilateral one.
[164] Deutsche BA has been sold in the meantime to German interests, restructured and renamed dba.
[165] Cf. Commission of the European Communities (2001), p. 100.
[166] Cf. Commission of the European Communities (2002b), p. 13; although the Commission's immediate reaction does not expressively states this interpretation, this Communication makes it fairly obvious.
[167] Cf. Commission of the European Communities (2002b), para. 69, p. 15.
[168] Cf. European Commission (2005b).

New Zealand.[169] These agreements affect about 300 individual bilateral ASAs, which are now in line with Community law.

XIV.4.9.4. Legal Achievements

In reaction to the ECJ decision, the European Parliament and the Council have published and implemented Regulation (EC) No 847/2004 on the "negotiation and implementation of air service agreements between member states and third countries" in April 2004.

The Regulation clarifies the issues that came up after the ECJ ruling. Member States are allowed to negotiate with third countries, but have to inform the Commission about the proceedings. Within these negotiations, Member States must adhere to the provisions outlined in the ECJ ruling, namely the rules concerning nationality clauses.

Even in its communication entitled "developing the agenda for the Community's external aviation policy" of March, 11, 2005,[170] the Commission has not met the expectations of the European aviation industry regarding the clear outline of its proposed approach towards the external aviation relations, according to the AEA.[171]

After the visit of Transport Commissioner Barrot in the U.S. in March 2005, it is expected that the EU-US negotiations will be continued in autumn 2005. While the transport ministers' Council granted the Commission a mandate for negotiations with the USA on an EU-US open skies agreement already in June 2003, the complexities described above made the progress so far rather cumbersome.

XIV.4.9.5. Institutional Impacts

To achieve the proposal for an external dimension to air transport set in the White Paper, the Commission must face the institutional difficulties that are associated with the change of responsibilities in international aviation that it wants to take place. First of all, there are many different stakeholders involved in this process. There are the Member States that have the authority over aviation relations right now, and their respective airlines, together forming European airline lobby groups (e.g. AEA). On the other hand there are third countries to negotiate with, the most important one being naturally the USA. But, following the idea of the White Paper proposal, also other third countries play an important role in the Community's external aviation dimension.

The process of achieving the proposal for an "external dimension" has already been started with the opening of the negotiations for the proposed transatlantic OAA. Since this is supposed to be the first step towards the change of responsibilities for external aviation relations wanted by the Commission, the following analysis of the institutional process shall rely primarily on these negotiations.

Conflict of interests between Member States and the Commission

The Commission has clearly outlined which role it is considering for the Community to fulfil in future negotiations of air service agreements. One idea is that it "could act as a catalyst in opening up markets that are still too closed".[172] In order to achieve this, the Commission's plan is to enhance the Community's influence on international bodies such as the ICAO, where it wants to become a full member.[173] The

[169] Cf. European Commission (2005c).
[170] Cf. Commission of the European Communities (2005e).
[171] Cf. Association of European Airlines (2005c), p. 1.
[172] Cf. Commission of the European Communities (2001), p. 91.
[173] Cf. Commission of the European Communities (2001), p. 98.

Community's interests in international aviation negotiations shall have a greater importance than it is the case so far. The question arises whether the Member States of the Union will accept this change of responsibilities, especially taking into account the fact that the Member States often seem to have different opinions in ICAO negotiations and that these points of view do not always coincide with what has been agreed on Community level.[174] So, why should the Member States forgo their very own influence on international bodies in favour of the Community?

In the OAA negotiations the EU demands cabotage rights for EU carriers in the U.S. market in relation to the fifth freedom rights that U.S. carriers enjoy in the EU market; the EU side considers this to be a limited form of cabotage since it wants to be regarded as one single economic area: "US officials point out that if the EU wants to be treated as a "single country" in international aviation fora, it should have only one vote on the International Civil Aviation Organization instead of the multiple votes currently allocated to EU Member States."[175] The Commission admits that this is exactly what it wants to achieve as this idea has already been stated in the White Paper. It has been addressed beforehand that the Member States have not always identical opinions in ICAO. Even when the Member States agree upon the EU representing all of them at ICAO, the question remains if Europe will lose influence in ICAO when forgoing 25 individual votes for the sake of one unified EU-vote, simply out of arithmetical considerations. Under the current framework, this would be a tremendous loss if the Member States had only one vote.

Herein lies the first conflict of interests that impedes such a development: the conflict between the Member States and the Commission regarding centralisation of political power towards Brussels.[176] This conflict not only embraces the ICAO issue but already starts at the European level when it comes to negotiation of ASAs.

Coming back to the negotiation claims of the EU taking the UK's bilateral ASA with the USA as an example, it actually safeguards a very comfortable situation for UK's major carrier, British Airways, which holds the major stake of market share on the transatlantic market from and to Heathrow international airport, because of the limited market access granted by Bermuda II.[177] It also safeguards a comfortable situation for the British government since it holds the major incentive the Community could offer the USA to bargain from an OAA in terms of traffic rights. Furthermore, Bermuda II protects the lion share of all transatlantic air traffic to the UK-US market.[178] Thus, the UK is one example for a Member State, which has indeed only a very limited interest in handing over its political powers to the Commission. In fact, because of the international aviation law, under which the bilateral ASAs are governed and which is guarded by ICAO, the UK provide a text-book example for a state that would gain nothing if it would give up its own negotiation rights in favour of the EU.

The Relation Commission – Member States as an Agency Problem

While trying to explain this conflict of interests between the Member States and the Community, represented by the Commission in a more generic sense, one might come across the economical concept of the "principal-agent-problem" otherwise simply known as "agency-problem". The agency-problem is an economic theory that is applied specifically to corporations in which shareholders (principals) hire managers (agents) to run the business for them. However, generalising this economic theory, it is also applicable to political organisations, as administrations usually run the businesses of the states on behalf of the public. Under the agency-problem theory, agents may seek to maximise their own wealth, which is basically up to very high extent self-interest, not necessarily to the best of the principal(s).

[174] Cf. Commission of the European Communities (2001), p. 98.
[175] Cf. Brattle Group (2002), p.1-12, fn. 25.
[176] The most recent developments concerning the EU Constitution underpin this idea.
[177] Cf. Harrison, M. J. (2003), p. 24.
[178] Cf. Harrison, M. J. (2003), p. 24.

In the Community dimension one can conclude that the Commission is the agent that is supposed to act to the best of the Community, consisting of the Member States, which are therefore the principals. The fact that the Commission must ask the Council for granting negotiation mandates underpins this assumption. Focusing on bilateral ASA negotiations and the above given instances of different interests between the Member States and the Commission, the self-interest of the Commission is the expansion of its international political powers. The validity of this conclusion is given by the outline of the Commission's idea of the "single voice" for the Community as stated in the White Paper and furthermore through its (meanwhile shown) ambition to become this "single voice".

Nevertheless, this expansion of political power (e.g. by receiving a vote in the ICAO) cannot be conducted without taking away political powers from the Member States. As the UK example has shown this is not necessarily in the Member States' interests. As the Member States' governments themselves are sovereign actors, they seek just like any other entity to gain advantages from a deal, which in this case contains the transition of their political powers. However, there is little to gain from voluntarily transferring political power to the Commission. More precisely, the OAA negotiations have shown in how far the Commission's interests differ from the Member States interests. The mandate granted by the Council to the Commission "covers a wide-range of issues *inter alia* traffic rights, routes, capacity, frequencies, slots, fares, application of competition rules, high standards of safety and security."[179]

In June 2004, the Council, as the representative for the Member States' interests rejected a draft proposal for the OAA[180], that was essentially not more than a slightly improved 'Open Skies' type agreement for the Community including basically only the US-side acceptance of nationality clauses and to a certain extent eased ownership and control rules. Taking a look on the Commission's communication of November 2002 and the outlined order of negotiation priorities one can conclude that the draft proposal was aimed at coming to a conclusion with the USA as soon as possible in order to continue with the further extension of the Commission's powers in international aviation. The Member States and their airlines on the other hand seek a true benefit from the OAA negotiations and therefore rejected the draft proposal. This is a real indicator for an agency-problem. The principal-agent problem between the Member States and the Commission describes the true conflict of interests here.

Conflict of interests between third countries and the Commission

The second conflict of interests involves the relation of third countries with the Commission. While the intention of the Commission to increase competition on routes from the EU to third countries may be laudable from the economic perspective, the sovereign rights of the third countries under the framework of the Chicago Convention and their interests must be taken into account as well. It is uncertain how third countries will react on the European Commission as a negotiator,

- as their bilateral aviation relationships with the Member States that have been established for years will suddenly vanish and
- as it does not correspond with the Chicago Convention that a supranational organisation is a contracting entity for bilateral air service agreements.

This aspect is of special importance in case when a third country has open skies agreements with some Member States, but does not want to have one with each Member State.[181] It could therefore refuse to

[179] Cf. European Union - Delegation of the European Commission to the United States (2003).
[180] Cf. EURACTIVE (2004).
[181] Cf. Balfour, J. (2003), p. 47.

negotiate with the Commission on the grounds of the established legal framework for international civil aviation.

Another factor that must be considered when analysing the external relations policy and the ECJ judgment is the question why third countries shall in general accept a revision of the existing ASAs to include the EU Community clauses.

While the USA can be regarded as relatively open-minded towards a further liberalisation of international aviation despite their current concerns about the OAA, other third countries follow a more restrictive traffic rights regime with Member States of the European Union. The decision of the ECJ does not automatically grant market access to more competitors,[182] as in many cases of non Open-Skies-ASAs the number of carriers that can be designated by each party to serve a specific relation is limited. Even when a third country accepts to remove nationality clauses, it is difficult to guarantee an equal-treatment designation procedure for these relations when more EU-carriers want to serve the route than can be designated.

There remains a very general aspect to be considered: of course it will be a reduction of transaction costs if a third country needs to negotiate only with one partner instead of 25. But what is the desirable negotiation position of a third country? It is mainly not to reduce the cost burden but more to have a better negotiation position. Of course if the power of the negotiating partner gets stronger, this will very probably not be in the interest of the third country – and of course the negotiation position of the EU will be stronger than that of the individual Member States. So it will be very understandable when the third countries will be reluctant to accept new negotiations.

The acceptance of the EU as negotiator and the removal of nationality clauses by third countries is therefore highly dependent on the fact whether the respective third country expects economic gains from the new institutional framework. Largely unsolved is the question what happens in case a third country will not accept to remove nationality clauses from its bilateral ASAs with Member States of the EU.

Conflict of interests between air carriers and the Commission

The third conflict of interests exists between the Commission and the Community carriers. The AEA and its member airlines have, as the most important interest group in the European aviation industry, indicated several times that the outcome of the OAA negotiations is of primary importance to them and that it must fulfil the mandate granted to the Commission to the full extent. From the perspective of European airlines, a half-hearted agreement that leaves obstacles of any kind to a fully liberalised airspace in force should not be concluded. Moreover, other third country negotiations by the Commission must show a considerable added value to the EU carriers, which cannot be foreseen yet from markets like China or Russia for example.

Besides these conflicts of interest between the Community airlines and the Commission it has to be stated that they have also a common interest. The Community airlines will be the main winners in this context, because it will become quite easier to consolidate. So far, mergers and takeovers are very complicated due to the restrictions on traffic rights. Another advantage will be the broader possibilities to expand the scope of the network.

Up to now only the Community carriers were in the interest of consideration. But also the carriers of the third countries will be affected, and they have also their disadvantages. Taking the U.S.-carriers as an example they have via their bilateral ASAs in most cases a lot of 5th freedom rights throughout Europe, so they do not need any further rights. They can win nothing out of these negotiations but have to fear the

[182] Cf. Abeyratne, R. (2003), p. 338.

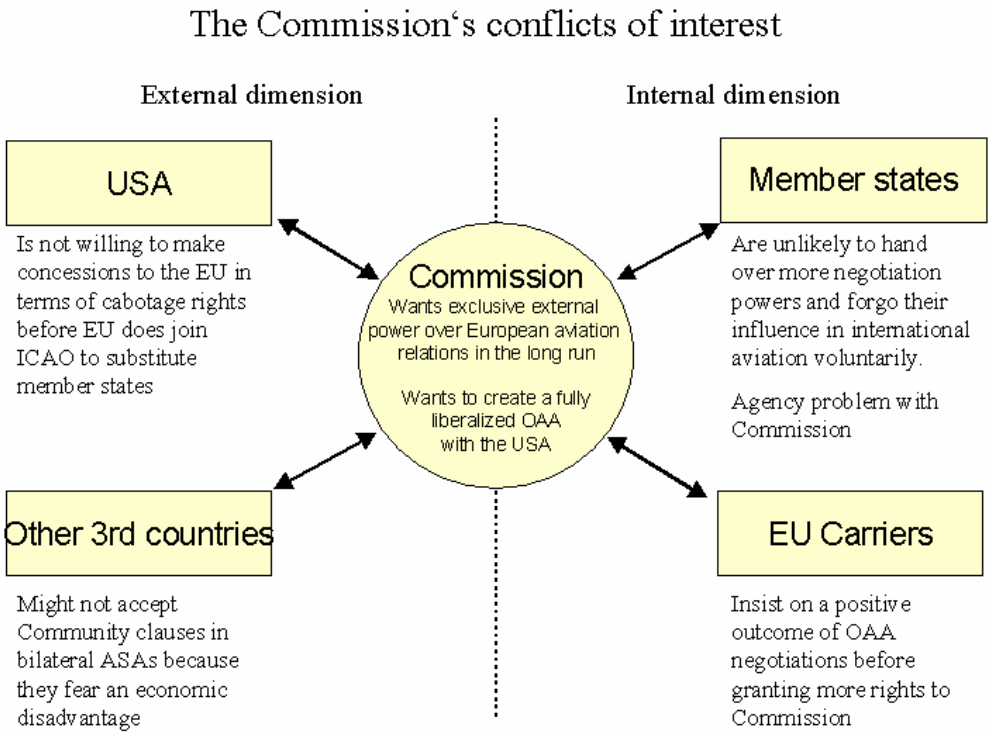
European carriers as potential competitors within their own country. This could only be an advantage within an alliance, and even then it is limited.

Another disadvantage for these carriers will be the new possibilities to consolidate for the European carriers. The American carriers have done this already just after the deregulation in the early eighties, and this advantage they may loose now. They may gain nothing out of this European consolidation process, only that the European carriers get even stronger competitors.

Taking both reasons together they will certainly put pressure on to their government to proceed very carefully – if at all.

The following figure summarises the possible fields of conflict for the Commission following the ideas of centralising power.

Figure 1: The Commission's conflicts of interest



Source: Compiled by the authors.

The whole idea for increased Community powers in international aviation to overcome the fragmented Member States' powers needs a well organised process in order to cope with the two conflict dimensions shown in Figure 1 while resulting in a best possible solution for all involved 'players'. This could take years to implement and is associated with extraordinary high costs. The question is: What are these costs? And furthermore: Do these costs justify Community wide negotiations conducted by the Commission or would a traditional approach under the Chicago system of bilateralism be the better way?

XIV.4.9.6. Economic Impacts

From the viewpoint of institutional economics, a mandate for the Commission to act as negotiator in the field of international aviation relations is advantageous, if transaction costs can be reduced. In fact, a system of bilateral ASAs negotiated by the Commission means a reduction from currently over 1,500 ASAs to merely 175 or so, in case the Community would conclude agreements with every other country in the world. However, complexity and the costs measured in monetary and temporal "expenditures" resulting

from this negotiation process rise, as the Commission has to negotiate in the name of all Member States. The Member States have their own interests in the field of aviation, which are as outlined above sometimes contravening. This could be a major obstacle to reach an agreement agreeable in all Member States, therefore delaying the conclusion of a Community – third country agreement.

The costs of Community wide negotiations vs. traditional bilateral negotiations

Air service agreements – be it on a bilateral or multilateral basis – can be interpreted from a viewpoint of institutional economics as "contracts". So the negotiation processes of ASAs can safely be regarded as the process of contracting. Moreover ASAs can be seen as an institutional tool to organise aviation markets, with an impact on the industry, which is part of the overall economy. Hence one may say that ASAs are a form of economic institution. In his book "The Economic Institutions of Capitalism", Oliver E. Williamson formulates the idea of transaction costs as being "the economic equivalent of friction in physical systems"[183] and furthermore that "transaction costs economics poses the problem of economic organization as a problem of contracting".[184] Since the contracting status of ASAs has been clarified above, one can conclude that the negotiation (or contracting) process of ASAs is associated with costs, more precisely with transaction costs. Williamson defines that "any issue that can be formulated as a contracting problem can be investigated to advantage in transaction cost economizing terms".[185]

Based on Williamson's transaction cost economics theory the following part shall examine whether Community wide ASA negotiations as postulated by the Commission are associated with lower transaction costs than the adjustment of the Member States' existing bilateral ASAs to Community clauses to fulfil the ECJ ruling.

With regards to

- the proposals made in the White Paper on an external aviation dimension,
- the progress that has been made so far in the negotiation process between the EU and the U.S. for the OAA that was described earlier and
- the importance of the transatlantic economic and political relations,

the transaction cost analysis will be focussed on these negotiations. In addition there are other negotiations between the Commission and third countries that have been finalised (e.g. Ukraine, Australia, New Zealand Singapore), or that are ongoing (e.g. Chile, Western Balkans) or planned (e.g. China, Japan, Russia), which will not be analysed in detail.

Williamson distinguishes two types of transaction costs, ex ante and ex post,[186] the former being the costs of drafting, negotiating and safeguarding an agreement, the latter the costs evolving after an agreement is in force trough for instance aligning or correcting alignments. Regarding the OAA negotiations, one can solely allocate ex ante transaction costs since the negotiations are not yet concluded. In addition, the only existing ex ante costs so far are the costs of drafting and to a certain degree negotiating the agreement. As the EU and the U.S. have not yet reached a common position to many of the proposed contents that the OAA idea is aimed at (e.g. ownership and control clauses)[187], the ex ante costs that have been incurred so far will still increase in the upcoming progress of the negotiations.

[183] Cf. Williamson (1985), p. 19.
[184] Cf. Williamson (1985), p. 20.
[185] Cf. Williamson (1985), p. 17.
[186] Cf. Williamson (1985), p. 20.
[187] Cf. Soames, T./Goeteyn, G./Camesasca, P. D. (2004), p. 131.

Considering the fact that the negotiations for this contract have started already in 2003 and that little progress has been made since the last round, one may find the costs that have been spent on this transaction so far relatively high. Besides, the USA strictly rejects some of the EU side's demands as for instance the cabotage rights issue, and even EU transport Commissioner Jacques Barrot sees the necessity to put expectations for possible U.S. concessions in this matter later on the timescale.[188] This means essentially that the negotiation process might go on for an unpredictable amount of time, inevitably increasing the ex ante transaction costs associated with the process.

The problem with the OAA negotiation is that while trying to create such a complete new bilateral ASA framework, especially because of the high prestige character for the Commission, the negotiators seek perfection as far as possible. This is highly suitable in terms of ex ante transaction costs because drafting, negotiating and safeguarding an agreement "can be done with a great deal of care in which a complex document is drafted in which numerous contingencies are recognized, and appropriate adaptations by the parties are stipulated and agreed to in advance."[189]

Although this is a highly ambitious undertaking as Williamson poses it, the other possibility, namely an incomplete document whereby the gaps are "to be filled in by the parties as contingencies arise"[190] is not an opportunity for the contracting parties. First of all, the OAA must be as embracing as possible in order to be of a true economic benefit and to meet all possible concerns of the parties, and secondly because of its status as a prestige object for the Commission. The successful completion of the negotiations to the full requirements of the mandate would at least eliminate two of the four conflicts of interests.

So, one can already estimate that the ex ante transaction costs that evolve from the OAA negotiations do not necessarily justify the Commissions claim for its announced future role as the "single European voice", especially considering the two facts that first, the ex ante costs are just at its preliminary and on the second part possible ex post transaction costs need to be considered as well, since "ex ante and ex post costs of contract are interdependent [and] they must be addressed simultaneously rather than sequentially".[191] Nevertheless a sincere estimation of both the ex ante and the ex post costs of contracting cannot be conducted as they are difficult to measure[192] and not easily to be expressed in monetary units but rather in terms of time consumption and research work.

On the other hand "the difficulty, however, is mitigated by the fact that transaction costs are always assessed in a comparative institutional way, in which one mode of contracting is compared with another"[193]. Hence the outcome of this analysis shall be a comparison between community wide ASAs or adjusted existing ASAs, the focus will remain on the difference between the two possibilities in terms of transaction cost economics.

Despite having the Commission now negotiating with the USA over the OAA, the Member States still have the right to negotiate with other third countries themselves as long as Community clauses are included. This is because the ECJ ruling did not precisely clarify on the issue of exclusive external aviation competence of the Community. The OAA promises a great opportunity for the European aviation industry and major economic benefits to the European carriers, but leaving this aside and concentrating on the fulfilment of the ECJ judgment's requirements, one could come across the fact that the Commission does not have to have the power it is claiming for the third country relations in general. The adjustment of existing bilateral ASAs between the Member States and third countries could even be cheaper concerning

[188] Cf. Neue Zürcher Zeitung (2005).
[189] Cf. Williamson, O. E. (1985), p. 20.
[190] Cf. Williamson, O. E. (1985), p. 20.
[191] Cf. Williamson, O. E. (1985), p. 21.
[192] Cf. Williamson, O. E. (1985), pp. 21f.
[193] Cf. Williamson, O. E. (1985), p. 22.

the transaction costs of contracting than the Commission having sole power over Community wide negotiations.

So, what are the costs of adjusting the existing contracts? If the Member States whose ASAs with the USA were contested in the ECJ were simply to renegotiate under Community clauses, they would only have a limited amount of ex ante costs to spend, since the contracts are entirely legal and in force with the exemption of only one clause that has to be adjusted. Furthermore, after the decision of the ECJ, the USA initially offered to accept Community clauses.[194] This can be considered to be less cost intensive than redrawing a whole new contract regarding the ex ante costs and most probably also ex post costs. Possible alignments are unlikely to sum up to severe amounts once Community clauses are established. Bilateral ASAs as they are in existence today generally create few costs of contracting, a statement underpinned by the Commission who states that the "main text of most ASAs remains unchanged for years".[195]

However, the OAA promises such a great economic benefit to the European aviation industry and the consumers that the transaction costs of negotiating the OAA will most likely be outweighed. It is estimated that the OAA will create for consumers in Greece, Ireland, Spain and the United Kingdom (all countries which currently have restrictive ASAs with the USA) alone annual economic benefits of up to € 1.62bn.[196] For the EU-15 it is estimated that 9,000 additional jobs in aviation will be created[197] and overall consumer surplus would be increased by more than € 5bn annually.[198]

The theory described is mostly concerned with the EU-US aviation relation since this is the only opportunity to compare the two different models so far. However, the U.S. is not the only third country that the Commission wants to negotiate with. Other Community wide third country negotiations were already planned in the White Paper[199] and recent developments show that the Commission is very eager to receive negotiation mandates for Russia and China from the Council.[200] This is not so much appreciated by AEA and other aviation stakeholders, because they do not expect as much of an added value to the European aviation industry as the OAA promises. Precisely, AEA remarks, that many other third country markets are underdeveloped, still highly regulated and not ready to fulfil EU wide requirements.[201]

Overall, the EU Member States have on average 60 to 70 bilateral ASAs per Member State.[202] Consequently, just like the situation with the USA, also the external relations with other third countries are marked by existing bilateral ASAs and many of these agreements are also to be revised. Community wide negotiations with these third countries may indeed not provide so much added value to the European airlines industry. In the cases the AEA regards as still highly regulated and not ready to fulfil EU wide requirements, the transaction costs approach may not justify Community wide negotiations, at least not until the requirements for a liberalised laissez-faire approach are fulfilled.

On the one side the opportunities of the OAA is by far bigger than the negotiations with other third countries, but this means too, that these last mentioned negotiations will be by far easier. It may be assumed, once the first countries have signed such an agreement the transaction costs will decline for the following ones. Even the contract with the U.S. may get a push when the first other Community ASAs will be readily negotiated. Therefore the strategy of the Commission to gain additional mandates to nego-

194 Cf. Harrison, M. J. (2003), p. 22.
195 Cf. Commission of the European Communities (2002b), p. 4.
196 Cf. Brattle Group (2002), p. A19.
197 Cf. Brattle Group (2002), p. 6-4.
198 Cf. Brattle Group (2002), p. 6-2.
199 Cf. Commission of the European Communities (2001), p. 100; Japan and Russia are mentioned in particular.
200 Cf. AEA (2005b), p. 1.
201 Cf. AEA (2005b), pp. 1f.
202 Cf. Commission of the European Communities (2002b), p. 4.

tiate for instance with Russia, Japan and China even before the negotiations with the U.S. come to a successful end can be seen as appropriate, although the AEA criticised such an extension of mandates to be "premature"[203], "over-ambitious and unfocused"[204]. Whereas the transaction costs per adaptation of an existing ASA will stay the same from case to case probably the transaction costs of Community wide ASAs will decrease.

Three other economic impacts of a liberalisation of bilateral air service agreements shall be mentioned – at least briefly – as well:

Firstly, even when the liberalisation of bilateral ASAs does not lead to additional services from network carriers outside their home markets, even the possibility that other carriers could enter the market usually has a disciplinating function on the incumbent. He will not increase, but maybe even lower the fares to prevent the market entrance of potential competitors.

Secondly, a far-reaching liberalisation of ownership rules also has repercussions on the situation of employees. It can be expected that the wage differential for airline staff will tend to equalise.[205]

Thirdly and finally, it can be expected that the liberalisation of bilateral ASAs will spur the growth of traffic. This will be contrary to the White Paper's objective of "Controlling the growth in air transport".[206] At this point it must again be emphasised, that each objective needs an independent economic instrument to be tackled. The primary answer on concerns that increased traffic growth due to "Open Skies"-agreements will cause additional environmental burdens is that a second, independent instrument, aimed directly at environmental problems, must be implemented to mitigate these effects. In other words the reform of the air service agreements is likely to increase the need for further measures. However, it is therefore equally important that the reform in itself does not establish or preserve barriers to taking such measures. For this reason, the Commission aims to remove traditional clauses that prohibit fuel taxation when negotiating on behalf of the Community.

XIV.4.9.7. How far is this a Role of the EU or of other Levels of Aviation Policy

The open skies judgment does not dictate that the Commission has to be the acting negotiator with third countries. If the provisions made in the judgment are honoured by the national governments, the system could stay as is. However, because of the advantages of a harmonised approach, national governments have granted the Commission mandates for the negotiations with several third countries. So the Member States agree to give up a part of their sovereignty though the analysis stated that they are not required to do so. This is an indicator that the Member States see added value in negotiations conducted by the Commission.

XIV.4.9.8. Assessment

The Commission's aim to receive an exclusive mandate to negotiate air services agreements with third countries has failed. However, it is at the Member States discretion to grant this right to the Commission to conduct harmonised negotiations with third countries what in some cases is already done.[207]

In principle, the Commission was successful with the intention to open air service markets for routes from the Community to third countries for all Community carriers, although the effects of the ECJ ruling

[203] AEA (2004), p. 1.
[204] AEA (2005b), p. 1.
[205] Cf. Brattle Group (2002), pp. 8-3f.
[206] Commission of the European Communities (2001), p. 35.
[207] Cf. IATA (2004b), pp. 1f.

within the current framework of bilateral ASAs can be estimated to be low. Even if a "community nationality" for air carriers as far as traffic rights are concerned is established, it does not automatically mean that the number of air services will increase. Out of operational considerations, traditional network carriers are reluctant to start air services outside their hubs, while in practice designation limits will make it difficult for low-cost-carriers to enter the market from the EU to Russia or Turkey for instance. Another obstacle is that the business model of low cost carriers does not permit to offer long-haul-flights to third countries.

However, the Commission's intention of creating an EU-US open aviation area could work as a catalyst to establish a global multilateral liberalisation approach in air services in the long run.

Assessment: Partly successful (opening of markets), partly not successful (exclusive negotiating mandate), partly not on track (delays in EU-US negotiations).

XIV.4.10. Measure 26: Airport Capacity Expansion

XIV.4.10.1. Description

Without doubt, growing demand for air transport in the European Community makes it inevitable to provide additional airport capacity in the near future. The White Paper acknowledges this fact saying: "Europe will not be able to cope without new airport infrastructure"[208], while at the same time it is its stated priority to limit new airport construction, as it is hard to gain public support for these projects.[209] Indeed, only very few greenfield airport construction projects can be identified throughout Europe currently, for instance the Ciudad Real airport in Spain, scheduled to open in 2006 or the new international airport in Lisbon, where construction is planned to start in 2008.

Nevertheless, the construction of additional runways at existing airports, foremost at the major hubs, is troublesome and time-consuming as well. The problems associated with these projects range from geographical constraints, as new runways consume an area of several square kilometres in often densely populated conurbations, to public resistance, as local residents fear to be exposed to additional nuisances caused by traffic growth. Additionally, legal constraints, such as movement caps (Heathrow, Düsseldorf), construction moratoria (London Gatwick) or legal disputes on airport expansion have an impact on the ability to cater growing demand.

XIV.4.10.2. Objectives

In the field of airport capacity expansion, the White Paper stated the following objectives:[210]

Firstly, it was intended to develop capacity to cope with a growing demand. This capacity was also seen necessary for European airlines to be able to maintain competitiveness with airlines from other continents. It was intended to widely refrain from the construction of new airports and to concentrate on enhancing the capacity of existing airports. A prerequisite for such projects was the implementation of new environmental standards to reduce the effects of aircraft noise and emissions. With reference to the Single European Sky project which shall tackle congestion in the sky, it was mentioned that there exists no action plan for congestion on the ground.

[208] Cf. Commission of the European Communities (2001), p. 37.
[209] Cf. Commission of the European Communities (2001), p. 38.
[210] Cf. Commission of the European Communities (2001), pp. 35ff.

Secondly, it was intended to adapt the current guidelines for trans-European networks to support the funding of airport development projects, with special regard to the new Member States. Although no capacity constraints could be observed there in 2001, it was evident that the existing airport infrastructure would not be able to cope with the growing demand expected in the years to come.

Thirdly, as capacity expansion will be limited, it was intended to implement a new regulatory framework aimed at creating incentives for the better use of existing airport infrastructure. This shall basically address slot allocation and airport charges.

XIV.4.10.3. External Developments since 2001

As already stated in the White Paper, it is very hard to gain public support for new airport construction and airport capacity expansion. Since the publication of the White Paper in 2001, several important airport capacity expansion projects are facing serious delays, e.g. the construction of a fourth runway in Frankfurt and a third runway in London Heathrow is subject to opposition and lengthy legal complaints by local residents.

A study by ECAC and EUROCONTROL published in 2004 outlined which airport capacity is needed for the future.[211] The study came to the conclusion that total capacity at existing European airports could be enhanced by about 60 per cent by 2025. However, much of this capacity could be created at secondary airports, where the demand is considerably less pressing than at the major hubs, where capacity expansion is severely limited. In contrast, dependent on the underlying scenario, demand is expected to grow by 70 to 150 per cent in this timeframe. Therefore the study comes to the conclusion that up to 10 major hubs and 15 medium sized airports needed to be constructed to cope fully with the expected demand.

A development of the recent years was the appearance of the LCC. It was already mentioned that they concentrate their services on secondary airports, in a lot of cases even at remote airports. The capacity problems are by far less important there; especially at remote airports they stimulate the creation of new capacity because these airports are often expanded just for such carriers. But if the growth of this segment will continue in the same way like in the last three years it is foreseeable that some of the secondary airports may also reach their capacity limits, foremost to mention London-Stansted. And it has also to be seen that, some of the services of low cost carriers go to airports that already have capacity problems. Amsterdam may be seen as an example for an hub airport, Barcelona or Düsseldorf as non-hub airports.

XIV.4.10.4. Legislative Achievements

So far, no legislative actions have been taken concerning airport capacity expansion in particular. A Communication by the Commission is planned to be released, but it has not yet been published.

Concerning the financial support of airport projects in the run of TEN-T, only one airport project is explicitly mentioned in Decision No 884/2004/EC of the Parliament and the Council to have special priority under the TEN-T future funding: the construction of the new Lisbon airport.[212] Although growth of demand for air transport in the new Member States outpaces growth in the old Member States and largely inadequate infrastructure exists in the new Member States, these areas do not receive special consideration in the TEN-T programmes. Support in the form of funding from the TEN-T budget did not play an important role in the past. For instance, the construction of Milan's Malpensa airport, which cost € 945m in

[211] Cf. Eurocontrol (2004c)

[212] Cf. European Parliament and the Council (2004), p. 32.

total and was a priority project from the Essen list, was supported with € 26.8m over a 7-year period from 1995-2001, less than 3 per cent of the total project cost.[213]

It is argued that unlike other projects within the TEN-T framework, financing does not pose a serious obstacle to the realisation of airport expansion projects, as large airports can usually be fully user-financed. Therefore, it is doubtful if financial support from TEN-T funds is necessary at all. An effective form of financial aid could possibly be the support of intermodal connectivity of airports, namely the integration into the high-speed railway network, where the Netherlands or Switzerland could serve as successful examples.

The allocation of TEN-T funds was criticised by ACI-Europe, stating that in the years 2000 and 2001 less than 2% of the total TEN-T budget was used for airports and in 2002 no airport-specific projects have been supported.[214] However this criticism is largely invalidated by the fact that there are other organisations and programmes, funded by or closely connected to the European Union, providing substantial assistance in airport and aviation finance, namely the European Regional Development Fund (ERDF), which supplied almost € 500m to airport-related projects between 1993 and 1999, the Interreg programmes, the Cohesion Fund, which supplied € 160m for the construction of Funchal airport alone, the Instrument for Structural Policy for Pre-Accession (ISPA), Phare, which supported the construction of Tallinn Airport with a grant of € 2.5m and the European Investment Bank (EIB) and European Bank for Reconstruction and Development (EBRD), which granted loans of several million EUROs at favourable terms for airport projects.[215]

XIV.4.10.5. Changes needed to achieve the White Paper's Objectives

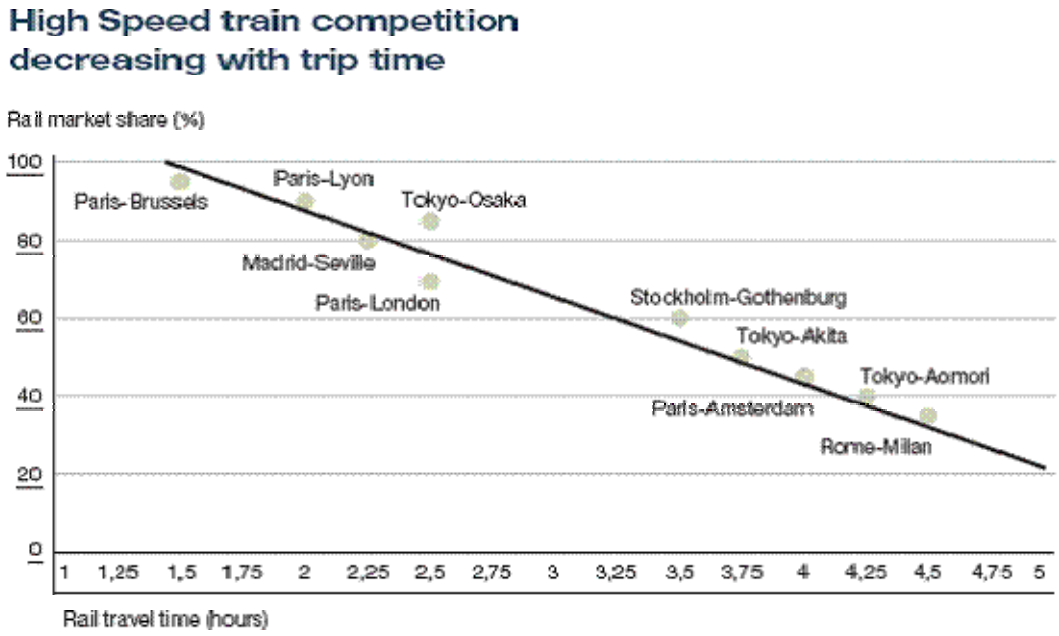
Taking the existing problems associated with airport capacity expansion into account, it is pretty much clear that the growth of demand - as outlined in the ECAC/EUROCONTROL study - can be fulfilled only to a very limited extent. Therefore, besides physical expansion other strategies are to be followed up to reduce the impacts of capacity constrains. These are for example:[216]

- Intermodality with rail, traffic shifting to high speed railways
- Improvement of the connection of primary and secondary airports combined with
- Traffic shifting to secondary airports
- Traffic shifting to less congested hours of the day (although this could have negative impacts on night noise)

Out of these examples, intermodality with rail and traffic shifting to high speed trains shall be analysed more in detail. To achieve a shift towards high speed railways, it is very important to create incentives for users to change their preferences towards rail. The foremost factor to shift preferences is the reduction of train journey times. An analysis by Airbus shows that there is a strong correlation between trip time and market share of high speed trains (see Figure 2)

[213] Cf. European Commission (2002b), p. 29.
[214] Cf. ACI-Europe (2003), pp. 2f.
[215] Cf. U.S. Department of Commerce (2003).
[216] Cf. O'Toole, K./Thompson, J. (2005), pp. 50ff.

Figure 2: Trip time and market share of High Speed Trains



Source: Airbus Global Market Forecast (2004).

This is an indication for the need of additional infrastructure investments in order to reduce trip times and making rail more attractive to passengers.

However, the general potential to free up airport capacities by a shift to railways is rather limited. An analysis of schedules from Amsterdam, Frankfurt and Munich shows that less than 5 per cent of daily movements are flights on short-haul distances that could be substituted by high-speed trains in the short term. Environmentally, without any flanking measures, such a shift could even prove to be negative, in case when free capacities will be used by long-haul flights with by far higher total emissions. Furthermore, the integration of high speed trains at hub airports constitutes the best way to enhance the airport's catchment area. Its accessibility would be enhanced and subsequently its attractiveness for passengers. This in turn would lead to more air passengers and would therefore foil the objective to shift more traffic to railways.

For the network carriers, short-haul flights serve to a large extent for the purpose to feed additional passengers on their long-haul flights that originate in their hubs. So even when highly competitive high speed train lines exist, airlines still perceive that short-haul flights are necessary to attract passengers to their long-haul flights. This is the reason why on the route Cologne - Frankfurt, which can be travelled by train in less than one hour, still four daily flights each way are offered by Lufthansa. The same applies to the route Frankfurt – Stuttgart. If Lufthansa had to cease operations on the above mentioned routes, it fears to lose passengers to other airlines like KLM or British Airways, which will continue to offer flights from Stuttgart or Cologne into their more distant hubs.

A high potential to shift a significant number of passengers to high speed trains exists on routes that have a high share of passengers travelling for a same-day return business trip. This for instance is the case for the route Madrid – Barcelona. In total, more than 4 million passengers fly between the two cities annually, while only less than 400,000 passengers use the train[217], which currently takes between 4,5 and over 7 hours, depending on the time of day. When the new high speed railway line with top speeds of 350kph and a trip time of 2,5 hours will be inaugurated, a significant shift of travellers to rail can be predicted, when the same mechanisms that led to a shift to rail after the inauguration of the high speed lines between

[217] Cf. López-Pita, A./Robusté, F. (2005), p. 18/p. 32.

Madrid and Sevilla or London and Paris are considered. It is estimated that more than 1.5 million travellers will switch from air travel to the new railway line.[218] It can be expected that as much as 45 slot pairs per day at Madrid and Barcelona, respectively, could be freed up with the help of the new railway line.

XIV.4.10.6. How far is this a role of the EU or of other levels of aviation policy

It is questionable, which function the EU can fulfil in the field of airport capacity planning. Ultimately, the planning of airports is the role of national, regional or even municipal authorities, depending on the legal system of the respective Member State. The Commission itself has conceded that the possibilities for the Union to act in this field are largely limited to the function of a catalyst to start a debate of the urgency of airport capacity expansion at different levels in the Member States.[219] A debate on a more strategic level seems advisable, because not every Member State does possess an "airport master plan", which lines out on a supra-regional level the needs of airport capacity development. Positive examples include the White Paper "The Future of Air Transport" in the United Kingdom[220] or the "Master Plan for the development of airport infrastructure in Germany"[221], which is based on a initiative of aviation stakeholders rather than the authorities responsible for planning. The need for such a kind of strategic planning becomes also obvious when taking a look at the emergence of small secondary airports supported by funds of regional authorities. The scores of such secondary airports offer low cost carriers broad scope to push down airport charges.[222] Other authors argue that in case all social costs and externalities are internalised, there would be no need to leave airport planning in the hands of public authorities. Then it should be left to the market how, when and where capacity shall be expanded.[223]

What the EU can do is to facilitate the implementation of strategies to relieve airport capacities, for instance by supporting the construction of high speed railway lines with funds from the TEN-T programme.

XIV.4.10.7. Assessment

So far, the objectives of the White Paper have not been achieved. Nevertheless, it must be admitted that the scope of action for the Commission in the field of airport capacity expansion is relatively narrow. The core aspect of airport planning and capacity expansion remains on subsidiary levels with the Member States. However, the Commission could act in the field of funding programmes such as TEN-T to control infrastructure expansion projects to a certain extent. The general question remains if public funds are really needed to support airport expansion. In many instances, airport and airline representatives emphasise proudly the ability of the air transport sector to finance its own infrastructure.[224] In the past, in some instances extensive public funding by Member States' national and regional authorities has lead to a massive capacity build-up at secondary airports, which distorted not only airport competition, but also competition between airlines.

Assessment: Airport expansion projects are delayed at many major airports. The legislative competences of the EU are limited to act in the field of airport capacity expansion, therefore the implementation of the White Paper's objectives remain primarily with the Member States' national, regional or local governments.

[218] Cf. López-Pita, A./Robusté, F. (2005), p. 18/p. 32.
[219] Cf. O'Toole, K./Thompson, J. (2005), p. 51.
[220] Cf. Department for Transport (2003).
[221] Cf. Initiative Luftverkehr (2004).
[222] Cf. the statements of Ryanair chief executive Michael O'Leary presented in chapter 4.4.3.
[223] Cf. McCarthy, C./McDowell, J. (2004), p. 15.
[224] Cf. Bisgnani, G. (2005).

XIV.4.11. Measure 65: Compensation of Air Passengers

XIV.4.11.1. Description

Denied boarding, long delays and flight cancellations are nuisances for air passengers, particularly for time-conscious business travellers. Denied boarding is resulting from the airlines' practice to accept more reservations than there is available seating capacity on a flight (overbooking). This strategy is alongside the rationale to maximise revenues, because it is very common that passengers holding a reservation for a particular flight for various reasons do not show up. Airlines use advanced techniques to predict the number of passengers that will not show-up, increasing seat availability and avoiding to leave many seats unfilled. Nevertheless, more than 250,000 passengers annually were denied boarding throughout the EU. Although it is a standard procedure – as outlined already in Article 3 of Regulation (EEC) No 295/91 - to ask for volunteers to forfeit their confirmed reservation and be rebooked on a later flight in exchange for benefits offered by the airlines there is a substantial number of passengers, which have to renounce their confirmed bookings involuntarily. For non-time-conscious passengers, the benefits offered are effective incentives to be booked on the next available flight. In the media, the number involuntary denied boarding is referred to with about 9,000.[225] If one applies different measures and ratios from data of the U.S. Department of Transport (unfortunately no rates are published in the European Union), one could come to the conclusion that the number could more realistically lie between 13,600 and 50,700 for the EU-25.[226]

Besides denied boarding due to overbooking, several additional problems became evident in the past: On the one hand, fares were falling constantly, mainly because of the rise of low fare carriers. On the other hand it was feared that their business model with particular emphasis on reducing costs would lead to a lower service level, lack of care and more inconveniences for air passengers. Particularly the treatment of passengers in cases of long delays and cancellations were of concern, but also the treatment of persons with reduced mobility and liability in case of accidents. In this respect, the Commission came to the conclusion that the existing Regulation (EEC) No 295/91 did not effectively protect the rights of consumers.

XIV.4.11.2. Objectives

The White Paper states in the policy package "Recognising the rights and obligations of users"[227] as an objective to increase air passengers´ existing rights concerning denied boarding, delays and cancellations by 2001.[228] With new legislation covering this subject it was intended to reduce denied boarding and to minimise the inconveniences caused by cancellations and delays.[229]

It was intended to extend the passenger protection measures to other modes of transport, in particular to the railways, maritime transport and urban transport services. Additionally it was intended to put forward a new regulation concerning requirements relating to air transport contracts by 2004. These objectives consistently fit into the overall commitment of the Commission to protect and bring forward consumer rights.

[225] Cf. Ginten, E.A. (2005).
[226] This estimation is based on either the ratio of involuntary denied boardings compared to all denied boardings or the rate of involuntary denied boardings per 10,000 passengers, cf. Department of Transport (2004), p. 30.
[227] Commission of the European Communities (2001), p. 17.
[228] Cf. Commission of the European Communities (2001), p. 109.
[229] Cf. European Commission (2004).

XIV.4.11.3. Legal Achievements

Concerning air passengers' rights related to denied boarding, delays and cancellations, a new Regulation (EC 261/2004) has been implemented, which entered into force on 17th February 2005. The new Regulation repeals Regulation EEC 295/91 and outlines in detail the obligations that air carriers have for their passengers in case of involuntary denied boarding, delays and cancellations. The Regulation is applicable for all airlines with flights departing from a Community airport and for flights from third country airports bound for a Community airport when operated by an air carrier registered in the Community.
Table 4 gives a detailed overview about the changes associated with the introduction of the new Regulation:

Table 4: Changes associated with the implementation of Regulation EC 261/2004

Events → / Regulation ↓	Denied Boarding						Cancellations				Long Delays[3]		
	Financial Compensation				Reimbursement or Re-Routing	Meals and Hotels	Financial Compensation	Reimbursement	Meals	Hotels	Reimbursement	Meals	Hotels
	≤ 1500 km	1500-3500 km	≤ 3500 km	> 3500 km									
Existing Regulation [EC]295/91	n/a	n/a	150 €	300 €	Included	Included	n/a	n/a	n/a	n/a	n/a	n/a	n/a
New Regulation	250 €	400 €	n/a	600 €	Included	Included	as denied boarding [1][2]	Included [4]	Included	Included	Included[4]	Included	Included

Footnotes :

[1] Unless carrier can prove that it is not responsible (i.e. extraordinary circumstances cause the cancellation).
[2] Unless carrier informs passenger of cancellation two weeks or more before departure or offers alternative flight that does not delay passenger more than 2 or 4 hours.
[2 hours delayed by re-routing when cancellation announced ≤ 7 days; 4 hours delayed by re-routing when cancellation confirmed between >7-14 days]
[3] Two, three or four hours depending on distance flight.
[4] When cancellation causes delay of more than five hours.

Source: DG TREN (2003).

It is important to note that the scope of the new Regulation has been broadened. While the old Regulation did not cover cancellations and long delays, the new Regulation specifies that the operating carrier is to provide care and assistance in the form of meals, refreshments and accommodations to its passengers. In case of long delays and cancellations, passengers also have the right of reimbursement even of segments already travelled, in case the delay or cancellation has made the original purpose of the journey obsolete, irrespective of the circumstances of the delay or cancellation. In case the operating carrier does not inform the passengers properly and timely about a cancellation, which is not caused by extraordinary circumstances, passengers additionally are entitled to receive the same financial compensation as in the case of involuntary denied boarding. It has to be stressed that no compensation has to be paid in case of delays.

In the field of air passenger rights, other regulations have been implemented as well or are under discussion to be implemented soon. For instance, the liability of air carriers in case of accidents has become more consumer-friendly with Regulation EC 889/2002, which repeals the existing Regulation EC 2027/97. A consultation paper has been released in 2002 concerning aspects of air transport contracts, such as code sharing, name changes, creative ticketing and dispute resolution.[230] In 2005, the Commission brought forward new proposals for Regulations concerning the right of information for passengers on the operating carrier at time of booking of package deals[231], travel of persons with reduced mobility[232] and a general proposal for passenger rights in different modes of transportation[233].

Besides the legislative actions, the Commission has encouraged airlines and airports to prepare voluntary commitments to improve their quality of service. These were presented to the public in May 2001 and

[230] Cf. DG TREN/DG Health and Consumer Protection (2002).
[231] Cf. Commission of the European Communities (2005d).
[232] Cf. Commission of the European Communities (2005f).
[233] Cf. Commission of the European Communities (2005b).

since then most airports and airlines have signed up, as recommended by their representative associations.[234]

XIV.4.11.4. Institutional Impacts

An important reason for the EU to take action can be found in the weak representation of consumers' interests on a European level. While stakeholders like airports and airlines have formed lobby groups that play an important role in the industry, passengers are not sufficiently represented in Europe. To overcome this deficit, different approaches are conceivable, when it comes to the strengthening of consumers' interests. These elements can be found to a different degree in the implemented legislation.

The main element that can be found in the new legislation is the very detailed degree of provisions, which exactly prescribe the procedure and the services and compensation levels that have to be provided by the airlines. This approach is able to achieve a high level of consumer protection, as it guarantees the rights passengers have in relation to the airlines. As a drawback, the extensive legislation curbs to certain degree the possibility for airlines to offer low fares in connection with a low or non-existent level of compensation payments or other benefits for stranded passengers. In case passengers were well informed about the consequences of low fares (i.e. the absence of care and compensation benefits) and would accept this business behaviour, this could be accepted. However, in the EU compared to the U.S., consumers possess less information about the individual airlines' performance in relation to denied boarding, delays, cancellations or mishandled baggage.[235] In the U.S., the approach concerning the rights of passengers is to a lesser degree based on formal legislation, but to a higher degree on the improvement of the flow of information, which is provided in the form of official documents of the Department of Transport, e.g. the Airline Consumer Report. The rationale behind this strategy is to inform passengers better, so that they can base their decision for an airline on a more solid ground. This strategy of industry self-regulation could additionally be a valuable driver for airline competition in case consumers prefer those airlines with a good performance record.

Another element that can be found in Art. 16. of Regulation (EC) No 261/2004 is the establishment of an enforcement body in each Member State to ensure that rights of passengers will be respected. This is an important step to create a somewhat 'countervailing power' in contrast to the influential industry federations on the supply side. Although several bodies that represent consumers' interests exist on the Member State level, their public influence and visibility was rather limited so far. Moreover, the incentives for passengers to become involved in such organisations are rather weak – basically said, the individual costs of participation outweigh individual benefits. Furthermore, passengers who would not participate in such an organisation would benefit from its actions, therefore causing free-rider problems and further diminishing incentives to participate. Therefore the success of a strategy to establish a body under private governance would not be very effective. For this reason the creation of an enforcement body under public governance is an appropriate strategy to strengthen the enforcement of passenger rights. An analysis of complaints received by the enforcement bodies in each Member State could be used for future monitoring of possible calls for action.

XIV.4.11.5. Economic Impacts

For the analysis of the economic impacts of the new Regulation it must be distinguished between two different matters: First, Regulation 261/2004 is designed to reduce denied boarding. It shall therefore be analysed if the Regulation is appropriate to do so. Second, the impacts on different stakeholders arising out of the applicability of the Regulation concerning cancellations and delays shall be analysed.

[234] Cf. DG TREN (2005b).

[235] The Consumer Report of AEA gives at least some information, although only those of its member airlines.

Economic impacts of the Regulation concerning overbooking

When analysing the economic impacts of the new Regulation concerning overbooking and involuntary denied boarding resulting from it, one should take into account that overbooking as such is not only a nuisance when it leads to denied boarding, but it also offers manifest benefits for consumers. Given the structure of their fares and conditions, traditional network carriers face a comparably large rate of no-show passengers (typically above 10%[236]), mainly attributable to the fact that many business travellers use flexible tickets. Taking for instance Lufthansa, per year about 5.5 million passengers do not show up for their reserved flights. Overbooking allows Lufthansa to carry 640,000 additional passengers, which could not have been carried without overbooking.[237] Therefore overbooking is a necessary instrument to achieve higher load factors, which also translates into more positive ecological results on a per passengerkilometre basis. The revenue generated by these passengers has a direct impact on ticket prices, as the higher capacity offered due to overbooking results in lower fares for the passengers.

Stakeholders view the economic impacts of the new Regulation quite differently. On the one hand the Association of European Airlines (AEA) estimates the costs for its members at a total of € 41.2m, claiming that these costs will increase ticket prices by about € 1.5 each.[238] Giovanni Bisignani, Director General and CEO of the International Air Transport Association (IATA) goes even so far to say that the costs for IATA airlines will increase by € 600m[239] and challenges "these rules [as] exceedingly complex to implement, impractical and likely to cause confusion."[240] It is argued that the comparably low number of passengers that have been denied boarding involuntarily does not justify a Regulation, which is perceived to push up costs disproportionately.

On the other hand, Lufthansa claims that not much will change with the new Regulation, as full-service network carriers have traditionally been relatively service conscious and offered hotel accommodations and/or travel vouchers/cash in the case of overbooking, which proved as a sufficient incentive to find enough volunteers to resolve situations with overbooked flights.[241] The view of Lufthansa is supported by a mathematical model, which analyses the sensitivity of overbooking behaviour of airlines in relation to the financial compensation level.[242] The model is oriented at the newsvendor framework and uses as input empirical data (e.g. no-show-probabilities, aircraft capacities, costs and revenues) of Lufthansa. For a typical intra-EU-flight of Lufthansa conducted with an Airbus A320, the model shows that the increase of financial compensation from € 150 to € 250 will reduce the number of overbooked passengers from 17 to 16. Even in case the compensation would triple from current levels, i.e. that it would be raised to € 750 for short-haul flights, the airlines' strategy to overbook would not be changed radically. Based on the above mentioned example, overbooking would be reduced to 13 passengers. One could therefore conclude that the effectiveness of the new Regulation to reduce the number of passengers that will be denied boarding involuntarily is limited.

Overbooking is rarely used by low cost carriers, as their tickets are generally non-refundable, so the no-show-rate is smaller in comparison to traditional carriers. For a low cost carrier, an unused seat in connection with a no-show does not result in a direct loss of revenue, as it is often the case with traditional airlines due to refundable tickets they offer.[243] Therefore, low cost carriers have smaller incentives to over-

[236] Cf. Klophaus, R./Pölt, S. (2005a), S.9.
[237] Cf. Klophaus, R./Pölt, S. (2005), p. 3.
[238] Cf. DfT (2004), p. 23.
[239] Cf. Bisignani, G. (2005a).
[240] Cited in Klophaus, R./Pölt, S. (2005), p. 12.
[241] Cf. Ginten, E.A. (2005).
[242] Cf. Klophaus, R./Pölt, S. (2005), pp. 7ff.
[243] Cf. Haanappel, P.P.C. (2005), p. 27.

book their flights and the new Regulation does not have a significant impact on their operations under the current circumstances.

Economic impacts of the Regulation concerning cancellations and delays

Concerning the situation when passengers encountered cases of delays and cancellations, different treatment of passengers by full-service carriers and low cost airlines has caused concern by various consumer protection organisations and the Commission in the past. While traditional network carriers have shown a relatively consumer friendly policy, some low cost airlines aggressively claimed that a "no refunds under any circumstances policy"[244] is well known to passengers before the booking is made as part of the conditions of carriage and passengers accept this policy in return for low fares.

Rather problematic seen by critics is the provision that in case of cancellation and delays in addition to a full reimbursements even of flight coupons already used, other services must be provided by the airlines regardless of negligence or fault. So even when a technical problem or adverse weather conditions cause a long delay or flight cancellation, airlines have to provide meals, refreshments, accommodations or have to accept when passengers want to get reimbursed. Airlines argue that they should not be held responsible for delays caused by these events and it is argued subsequently that they should not be held liable for any inconveniences caused to their passengers in these cases. Likewise, airlines were exonerated for cancellations resulting from fortuitous events under the national laws of most Member States and for delays under the Montreal Convention, in which all Member States and the EU are contracting parties.[245]

Especially for airlines operating flights from airports where due to their geographical location a high probability for weather-related delays exists, the new Regulation could have severe effects on the commercial viability of their operations. In the end, additional costs related to Articles 8 and 9 of the Regulation are likely to be shifted on to consumers in the form of higher ticket prices.

Eventually, several stakeholder organisations (e.g. IATA, German airline association ADL, European Regional Airlines Association ERA, European Low Fare Airline Association ELFAA) filed court actions against Regulation (EC) No 261/2004, in particular with respect to the provisions concerning cancellations and delays.[246] Additionally, it is argued that Regulation (EC) No 261/2004 poses a competitive disadvantage to community carriers, as they have to provide the services outlined in the Regulation on flights from a third country to a Member State of the Community, whereas a carrier from a third country only falls under the Regulation on flights originating in the EU.

In the meantime, the opinion of the Advocate General indicates that the ECJ will uphold Regulation 261/2004, as in his view the new provisions concerning care and compensation do not interfere with the Montreal Convention and constitute an appropriate means of legislation for consumer protection.[247] Usually, the ECJ follows the opinion of the Advocate General.

XIV.4.11.6. How far is this a Role of the EU or of other Levels of Aviation Policy

The Commission justified the action it took with the argument that "in the absence of Community legislation, in certain difficult circumstances, passengers are confronted with a set of national rules, which are largely ineffective. Sometimes, they have no effective legal protection and are subject to significant obligations in a situation which is not normally very familiar, far from home and trying to defend their rights in a

[244] MacQueen, V. (2005).
[245] Cf. Haanappel, P.P.C. (2005), pp. 27f.
[246] Cf. Haanappel, P.P.C. (2005), pp. 30f.
[247] Cf. Geelhoed, L. (2005).

foreign language."[248] Regulation (EC) No. 261/2004 reads in recital 1 "Action by the Community in the field of air transport should aim, among other things, at ensuring a high level of protection for passengers. Moreover, full account should be taken of the requirements of consumer protection in general".

The issues of flight cancellation and denied boarding are not covered under the Warsaw Convention or the Montreal Convention. In the case of damages that emerge due to delays based on the carrier's fault, the Montreal Convention sets a limit of 4150 SDRs. In contrast to this, the compensation scheme in the EU does not depend on the incidence of damages to oblige the air carrier to pay compensation or to offer care and assistance.

In the view of the passengers, it could probably be preferable to come to a world-wide minimum standard concerning compensation payments for denied boarding, delays or cancellations and immediate on-site assistance. With such an institution in place, a European passenger could be sure to get all over the world the same protection wherever the airline is coming from he is using.

XIV.4.11.7. Assessment

The measure as outlined in the White Paper has been fully implemented. However, evidence in form of a mathematical model on overbooking behaviour of airlines suggests, that it is likely that involuntary denied boarding will not be reduced by a large amount. This result is also supported by the experiences from the U.S., where the obligatory call for volunteers is seen more effective reducing involuntary denied boarding than high levels of compensation payments.[249] This already existed in the EU and was applied for a long time by most airlines.

Additionally, the ECJ has to decide, if Regulation 261/2004 is compatible with the Montreal Convention, which exonerates airlines for delays caused by *force majeure*. – according to the advocate general's opinion it actually is compatible with the Montreal Convention, as the provision to over on-site care is an appropriate means to protect consumers and does not constitute a conflict with further going claims to be settled in court. In fact, Regulation 261/2004 reads in Article 5 (3) that airlines do not have to pay compensation in case of exceptional circumstances causing cancellations.

Some academics and airline industry stakeholders alike argue that the present Regulation constitutes a form of over-regulation. In fact, in many aspects the Regulation codifies rules, which were applied by the airlines for a long time already.[250] It is argued that instead of a set of detailed rules, broad guidelines could be sufficient. A look towards Canada or the USA could give valuable clues in this direction. The guidelines in North America offer airlines a broad scope to compete in the field of denied boarding compensation, which in case it is designed to offer passengers a high level of convenience can be used as competitive advantage.[251] So it could be helpful to collect and present the European public a periodical report, showing the performance of European airlines in the areas of involuntary and voluntary denied boarding, delays, cancellations and other indicators of importance for passengers, such as the rate of mishandled baggage or the rate of complaints.

Assessment: The measure has been implemented. However, some critics argue that it constitutes at least to some extent over-regulation. A more market-oriented solution would be conceivable, as the example of the U.S. shows. Concerning customer care, the Regulation now in place is likely to be an effective tool to improve the passengers' situation. Concerning the target to reduce denied boarding, the Regulation has to prove in practice if it is able to achieve this aim.

[248] Cf. Commission of the European Communities (2005b), p. 4.
[249] Cf. House of Commons European Scrutiny Commitee (2002).
[250] Cf. Haanappel, P.P.C. (2005), pp. 28f.
[251] Cf. Haanappel, P.P.C. (2005), p. 28.

XIV.4.12. Measure 77: Introduction of Kerosene Taxation

XIV.4.12.1. Description

As a measure to foster sustainability it was suggested in the White Paper to introduce a tax on jet fuel at European level or within the ICAO-framework by 2004[252] to mitigate the effects of emissions caused by commercial air transport.

XIV.4.12.2. Objectives

With kerosene taxation, primarily three objectives can be associated: environmental, competitive and fiscal objectives.

In the White Paper, environmental aspects stand in the foreground of the introduction of kerosene taxation. The measure is aimed at a mitigation of climatic effects of emissions. Carbon dioxide emissions, which play an important role in the total climate change impact of aviation are directly linked to fuel consumption. The rationale behind the measure is to increase costs for fuel and therefore create incentives for airlines to use more fuel-efficient aircraft or to introduce fuel-saving measures, which are not economically attractive on a lower fuel price level. On the demand side, it is likely that a shift of fuel price increase to the passengers will reduce demand.

A second aspect, which is also included in the White Paper is the aim to create a "level playing field" for the different modes of transport as far as taxation is concerned.[253] While air transport enjoys a tax exemption under bilateral agreements and national laws, fuel consumption of other modes is heavily taxed. This objective is in line with the overall aim to change the modal split towards rail, as a rise in cost of air transport is perceived to cause a shift towards rail, where it is a viable alternative to air transport. However, in this context it must not be ignored that in some countries the taxes on fuel for road transport are levied up to some extent to finance infrastructure, while commercial aviation has to pay for the use of infrastructure with separate charges (en-route/terminal navigation and airport charges). Therefore the tax imbalance is reduced to the part of taxes for road and rail fuel consumption that exceeds road and rail infrastructure construction and maintenance.

A third aspect in connection with taxation is also of importance. From the fiscal perspective, fuel taxation is a legitimate means of generating proceeds for the general upkeep of the state. Viewed from this angle, it is not easily to be justified why aviation (and maritime) bunker fuels are exempted from taxation, while land-based modes of transport are heavily taxed. The original justification to exempt the bunker fuels of aviation from taxation was to protect a young and fragile industry. In the meantime, the arguments to justify the exemption of bunker fuels concentrate on the problem of tax avoidance due to tankering, which is in maritime transport an even bigger problem than it is already in aviation.

In this study, fiscal interest, although they are of high importance for the Member States, shall be put in the background, as it is the primary objective to analyse measures and instruments that enhance environmental sustainability of the air transport sector in the EU-25.

XIV.4.12.3. External Developments since 2001

Since the release of the White Paper, academia, the public, representatives of the industry, environmental federations and politicians alike have discussed the introduction of kerosene taxation intensively. During

[252] Cf. Commission of the European Communities (2001), p. 106.
[253] Cf. Commission of the European Communities (2001), p. 72.

2005 a similar discussion has emerged focussed on the question if kerosene taxation could be a viable way to generate proceeds to increase aid for developing countries. However on May 14, 2005, the finance ministers of the Member States decided during their informal Ecofin Council meeting to concentrate on a voluntary ticket levy. No agreement on the introduction of a tax on jet fuel could be reached. This discussion again shows that a fuel tax does not only seem to be an attractive instrument for policymakers out of environmental reasons, but also primarily out of fiscal considerations.

During 2005, the debate on the introduction of instruments to mitigate the climate change effects of aviation has focussed on emissions trading as a cost-effective way for air transport to contribute to the efforts of the EU to reduce climate change. In its Communication of 27th September 2005, the Commission stated on environmental and economic grounds its preference for the inclusion of air transport in the EU-ETS.[254]

XIV.4.12.4. Legal Achievements

The most important legal achievement with regard to the introduction of a tax on kerosene is Directive 2003/96/EC. This Directive repeals Directive 92/81/EC, which in its Art. 8 exempted fuel used for commercial aviation from taxation. The new Directive 2003/96/EC also advises to exempt fuels used for commercial air transport out of considerations on international competition, but it explicitly allows Member States to limit this exemption unilaterally for domestic flights or bilaterally for international flights within the EU.[255] Therefore, at least for intra-EU-flights, the introduction of an aviation fuel tax has become possible for the Member States. However, the tendency to do so is limited.

Concerning the introduction of a kerosene tax for flights to third countries, certain stakeholder groups sometimes refer to the Chicago Convention and ICAO Council Resolution to denounce such plans. In contrast to this, several legal studies come to the conclusion that these documents do not pose a material legal obstacle to introduce kerosene taxes.[256] Relevant for the possibility to introduce taxes are the respective bilateral air service agreements. It is the aim of the Commission in its negotiations with third countries in the run of the implementation of the ECJ's 'Open-Skies-Judgment' of 5th November 2002 to remove standard clauses in bilateral air service agreements, which prohibit taxation.

XIV.4.12.5. Economic and Ecological Impacts

The economic and ecologic effects of a kerosene tax have been analysed in several studies.[257] The conclusions that can be drawn from these studies are very similar: With a moderate taxation in the region of € 0.25 per kg of jet fuel, which is comparable to the minimum rate of excise duty on diesel of € 245 per 1000 litres at that time[258], only a marginal ecologic effect would be achieved. If the tax would be applied on EU-carriers flying on intra-EU-routes, carbon dioxide emissions would be reduced by 2.3%.[259] However, impacts on financial viability of airlines (€ -424.3m), employment (-2.7%) and consumer surplus (€ -3.13bn) would be relatively high in comparison to the achieved emissions reduction.[260] This kind of moderate taxation would not be able to reduce absolute emissions, as intended by the Kyoto protocol and the post-Kyoto strategy of the EU, but it would only help to halve emissions growth compared to a business-as-usual scenario.[261]

[254] Cf. Commission of the European Communities (2005g), p. 10.
[255] Cf. Council Directive 2003/96/EC, Recital 23 – article 14 says „shall exempt", cf. also Pache, E. (2005), p. 105.
[256] Cf. Resource Analysis et al. (1999) or Pache, E. (2005).
[257] E.g. Resource Analysis et al. (1999), Wit, R.C.N./Bleijenberg, A. N. (1997) or Wit, R.C.N./Bleijenberg, A. N. (1998).
[258] Effective January 1st, the minimum level is set at € 302, cf. Annex I of Directive 2003/96/EC.
[259] Cf. Resource Analysis et al. (1999), p. 38.
[260] Cf. Resource Analysis et al. (1999), p. 38.
[261] Cf. Wit, R.C.N./Bleijenberg, A. N. (1998), p. 50.

To achieve an absolute emissions reduction towards a more sustainable level, the taxation level had to be increased considerably above the mentioned €245 per 1000 litres of fuel. It is estimated that a tax in the order of €2000 per 1000 litres of fuel could result in a 10% reduction of CO2-emissions compared to a no-tax baseline scenario in the long term.[262] It is questionable that this is politically achievable or economically bearable due to the loss in consumer welfare and the overall impacts on the economy associated with taxation on these levels. In fact, such an instrument would be highly counterproductive in the light of the Lisbon process.

Additionally, the isolated introduction of kerosene taxation by a single state or a group of states will most likely lead to evasion strategies by operators to circumvent taxation, which are believed to seriously impede the environmental effectiveness of this instrument. These strategies include but are not limited to tankering[263] or the relocation of hubs into countries that do not have a kerosene tax. If such relocation is not possible for air carriers affected by the tax due to traffic rights restrictions, they will face a severe competitive disadvantage over carriers from countries without taxation. To evade these problems a solution for only one country would be inefficient. Therefore the Commission tries to work towards a global implementation. But under the current circumstances, this is far from being realistic to be achieved anytime soon. Even if all ASAs are adapted, it is doubtful if tankering can be effectively cut off. For example, even when the EU has agreed with Turkey to tax fuel, no EU institution can force Turkey to amend its ASAs with other third countries to include taxation. Therefore a Turkish airline could achieve an advantage with tankered fuel flown in to Turkey from e.g. Russia and used on an subsequent leg from Turkey to Germany and back. The only element that could effectively prohibit tankering is a tax not oriented at fuel purchased, but on fuel consumed. This way, it would not matter for tax incidence where the fuel has been bought initially.

Due to high marginal abatement costs, inelastic demand and the impossibility to substitute kerosene in the short term for renewable energy sources, kerosene taxation is an instrument that can be considered as largely economically inefficient and ecologically ineffective to achieve environmental goals. It is simply more expensive to achieve emissions reductions in air transport than in other sectors like power generation, so it would be more efficient to create an instrument that would let aviation cross-subsidise emissions reductions in other sectors where the reduction can be achieved for a lower price. Finally, for the reduction of climate change impacts it does not matter at which source emissions are reduced – as long as they are reduced. So why should one reduce a ton of carbon dioxide in aviation for €200, when one can achieve the same reduction for €20 or €30 in the power generation sector? From an economists point of view, an open cap-and-trade emissions trading scheme, which incorporates not only aviation but several other sectors as well, could achieve exactly that.

However, it has to be kept in mind that a key objective behind the existing energy taxes is fiscal. From a purely fiscal point of view, it is justifiable that aviation should contribute to the budget of the state as other fuel-consuming industries. In that context it matters less whether taxation is effective as an instrument to reduce climate change.

XIV.4.12.6. How far is this a Role of the EU or of other Levels of Aviation Policy

In general, taxation belongs to the genuine competences of the national state – there is no inter- or supranational entity to have the competence to levy taxes. However, to ensure fair competition within the Common Market, attempts to harmonise taxation have been undertaken and partly realised within the EU.

[262] Cf. Berghof, R. et al. (2005), p. 158f.

[263] Tankering is a strategy of taking more kerosene aboard than necessary for the next leg in a country without such a tax. The excess fuel will be used on subsequent legs.

On a global level, ICAO has urged its Member States so far not to introduce environmental levies on a unilateral basis "that would be harmful to the development of international civil aviation"[264]. However, it is more than doubtful whether ICAO Docs or Assembly Resolutions are legally binding. Definitely binding are the clauses in bilateral air service agreements prohibiting taxation. Nevertheless, if two contracting parties adjust their bilateral air service agreements in so far as taxation of jet fuel is permissible, it could indeed be implemented. This aspect also plays a role in the ongoing or planned negotiations of the Commission with third countries,[265] where the Commission aims to remove traditional clauses that prohibit fuel taxation. Although it is doubtful that kerosene taxation could be implemented in the near future as competitive distortions from tankering could arise when only a limited group of countries introduces kerosene taxation.

XIV.4.12.7. Assessment

The preceding analysis has focussed on the question, if the introduction of kerosene taxation could be an efficient way to propagate the objectives outlined in the White Paper. These objectives mainly fall into the environmental area and are less connected to fiscal objectives to generate revenue for the Member States.

A tax on fuel used by commercial air transport would indeed generate incentives on the supply side to implement measures that will reduce fuel consumption and on the demand side incentives to fly less, as prices will likely rise. However, these objectives can be achieved by other instruments at lower economic cost. From the economic and ecological point of view, open emissions trading has been identified as a promising instrument to achieve the Commission's objective to internalise the externalities of air transport as far as emissions contributing to global climate change are concerned. This view is also supported by more recent studies, which have focussed on emissions trading as a market-based alternative to kerosene taxation.[266]

Concerning the fiscal objective, after the implementation of Directive 2003/96/EC, Member States can introduce a tax on fuel unilaterally for domestic flights or bilaterally for flights between the respective Member States. In connection with this Directive, it must also be mentioned that in recital 23 it is advised to continue the tax exemptions enjoyed by commercial aviation to maintain the competitive position of Community companies. If Member States' governments come to the conclusion that taxation of fuel used for domestic air transport is justified out of reasons to equalise intermodal competition, they are free to do so.

Assessment: The implementation of the White Paper measure to introduce kerosene taxation in the framework of the ICAO by 2004 was not successful so far. Nevertheless, the Commission and the Member States are making progress in removing the legal obstacles to tax aircraft fuel that is contained in many bilateral Air Service Agreements to open up options for future legislation. In the meantime, the Commission has focussed on the inclusion of air transport into the EU emissions trading scheme to mitigate the climate change impacts of aviation. Open emissions trading is likely to be the more effective instrument, which could achieve environmental objectives at lower cost.

[264] Cf. ICAO (2001), p. 17.

[265] A detailed analysis on the Commission's role in negotiations for bilateral air service agreements can be found in chapter 4.9. of this study.

[266] Cf. Arthur Andersen (2001), ICF Consulting (2004) or Cames, M./Deuber, O. (2004).

XIV.4.13. Measure 78: Introduction of differential En-route Air Navigation Charges

XIV.4.13.1. Description

Like kerosene taxation, the introduction of differential air navigation charges is frequently discussed in the context of climate change abatement and greenhouse gas emissions reduction. The Commission proposes in the White Paper to introduce an emissions surcharge on top of en route navigation charges either as an alternative or as a cumulative measure in addition to kerosene taxation.

Under the current en-route charging regime in the airspace of the Member States of the Community, charges for the use of communication, navigation, surveillance and air traffic management infrastructure (CNS/ATM) are calculated using a formula including aircraft Maximum Take-off Mass (MTOM), the distance travelled in the respective airspace and a country-specific unit rate. The latter takes into account that ATM organisations throughout the Community have a different cost structure, attributable e. g. to differences in cost of living.

With the implementation of this measure, it is intended to include the quantity of greenhouse gas emissions as well, as an incentive for aircraft operators to use aircraft with a higher energy-efficiency and therefore fewer emissions.

XIV.4.13.2. Objectives

The main objective connected with the introduction of differential en route air navigation charges is to internalise externalities caused by the emission of greenhouse gases. This objective is consistent with the Commission's policy to make infrastructure users pay for the full costs caused to society (polluters-pay-principle). Infrastructure in this regard is the air/airspace used by aircraft operators.

Compared with kerosene taxation, fiscal objectives connected with an emissions charge are less important. The charge could be designed to be revenue-neutral by offering discounts on the en-route-navigational charges for those operators that are using low-emissions technology and surcharges for operators with less efficient equipment. If the instrument is designed to generate revenues, it is common that charges are to be used for a specific purpose, while taxes are primarily imposed to finance general functions of the state. In this case, revenues generated by the charge could be used for the mitigation of effects caused by emissions of air transport. Nevertheless, the concrete usage has to be defined. Possible alternatives could be the investment in carbon offset projects, funding of research aimed at low-emission technology or investments in air traffic control or airport infrastructure that could help to reduce emissions generated due to congestion in the air and on the ground.

XIV.4.13.3. External Developments since 2001

A study conducted by CE Delft and published in July 2002 has analysed extensively the feasibility to introduce an emissions based route charge in the EUROCONTROL area.[267] It came to the conclusion that the introduction of such an instrument is feasible in principle.

The introduction of a emissions-based en-route navigational charge has been put in the background, as the Commission has expressed in its Communication "Reducing the Climate Change Impact of Aviation" of 27th September 2005 its preference for the inclusion of air transport into the EU emissions trading scheme.

[267] Cf. Wit, R. C. N/Dings, J. M. W. (2002)

XIV.4.13.4. Institutional Impacts

The biggest advantage of differential en route air navigation charges in comparison to an emissions trading scheme or fuel taxation is that it can be introduced without having to change the institutional framework or to create an extensive new organisational framework. Additionally, the introduction of this instrument is perceived to have relatively lower obstacles in the international law context than taxation or emissions trading.[268] To include carriers from the EU and from third countries alike, the introduction of fuel taxes would require extensive changes of the institutional framework, as most bilateral air service agreements with third countries explicitly exclude the possibility to tax fuel. This process has commenced but will take some time to complete.

In an ETS, a set of well-defined trading rules must be developed, which is under the current circumstances (exclusion of international aviation from the Kyoto protocol) connected with some difficulties. Recent statements by Commissioner Dimas indicate the possibility that the inclusion of aviation into the EU-ETS could take until after 2012, which is viewed by many environmental NGOs as an imperfect situation.[269] Under these circumstances, differential air navigation charges could also act as an interim instrument, until aviation is included into some kind of ETS.

If adhered to the ICAO principle of cost-relatedness, an emissions-based surcharge on en route navigation charges could be set up to include aircraft operators from the EU as well as from third countries flying from or to EU- airports or crossing EU-airspace and would therefore cover a wide range of emissions. The proceeds from the surcharge could be used to fund GHG offset projects or support research in the field of air transport and environment and would therefore have a direct benefit to the environment.

As the EUROCONTROL Central Route Charges Office (CRCO) already bills and collects en-route charges on behalf of EUROCONTROL Member States, EUROCONTROL would also play an important role when differential air navigation charges were about to be introduced. It has already developed an IT-based system (PAGODA-PRISME), which can calculate the emissions of aircraft taking into account actual flight data. Although this could be a viable way with considerably low transaction costs, a higher degree of incentives could be achieved when using actual emissions. This, however, is connected with higher transaction costs, as airlines must report their actual fuel consumption in EU-airspace, from which the emissions could be calculated.[270]

A legal obstacle identified by CE Delft is that the calculation of emissions on the basis of fuel consumption could pose some legal problems as it might be argued that the instrument is an indirect levy on fuel.[271] Therefore, it must be made clear that the instrument is intended to mitigate the environmental impacts and has no fiscal objective.

In all the preceding paragraphs it was already implicitly assumed that the European level is the only one working effective. If such an instrument was introduced on the level of the national state airlines would have the opportunity to bypass the airspace of the respective country and therefore evade such an instrument. The first-best solution would be the introduction of an emissions charge on a global level, but this would be a immense challenge to convince all ICAO member states to adopt such an instrument.

[268] Cf. Wit, Ron C. N/Dings, Jos M. W. (2002), p. 86f.
[269] Cf. European Federation for Transport and Environment (2005), in this context also cf. Anon (2005a), p. 6.
[270] Irrespectively of the aircraft/engine type, there exists a direct and linear connection between fuel consumption and CO_2/H_2O emissions. 1kg jet fuel reacts to 3.15kg CO_2 and 1.26kg H_2O, cf. IPCC (1999), p. 22.
[271] Cf. Wit, Ron C. N/Dings, Jos M. W. (2002), p. 86f.

XIV.4.13.5. Economic and Ecological Impacts

The economic impacts of an emissions based surcharge on en-route navigation charges are basically comparable to the impacts of an emissions trading scheme. The main difference is that the emissions charge fixes the "price" of carbon dioxide emissions, while in the emissions trading scheme the total emissions level is fixed. Under an emissions charge, it is ex-ante very difficult to assess, how the economic agents react to it and to which degree they will reduce emissions. Therefore, it is very difficult to set the charge on a level that will guarantee a predetermined reduction target.

On the supply side the en-route emissions charge will create incentives for airlines to use more fuel efficient aircraft and – if oriented at actual emissions – to use more efficient flight paths, profiles and speeds. On the demand side, a price increase for air tickets will decrease demand depending on the price elasticity of the passengers. If a charge level of € 20 per ton of CO_2 would be assumed, which is about the cost of an emissions permit in the EU-ETS in the second quarter of 2005, a price increase of about € 4 for short-haul and € 16 for long-haul return flights could be estimated.[272]

As it was already stated above, it is most probable that carriers from the EU and from third countries could be included alike, which will avoid to a large extent any competitive distortions. Additionally, in comparison to a fuel tax, the environmental effectiveness of this instrument will not be reduced by evasion strategies such as tankering. On a charging level of € 30 per ton of CO_2 and € 3.6 per kg of NO_x, CE Delft estimates in its study of 2002 an emissions reduction of 10.2 megatonnes or 8.7% of carbon dioxide equivalent units could be achieved in 2010 compared to a baseline scenario without the introduction of environmental instruments.[273] About half of the emissions reduction would be achieved by measures on the supply side. The other half of emissions reductions would be achieved through a demand reduction due to price increases.

XIV.4.13.6. Assessment

To achieve the environmental objectives of the White Paper, an emissions charge could be worthwhile to be considered. Nevertheless, the Commission has focussed in its Communication "Reducing the Climate Change Impact of Aviation" on the integration of air transport into the EU emissions trading scheme. As the maximum emissions level is fixed in the EU-ETS, this strategy will be able to achieve environmental objectives with high certainty. The efficiency advantages of emissions trading become active especially when sectors are included that operate with highly different production technologies and abatement costs. This is particularly important in the context of air transport, as jet fuel remains the only propellant for the time being and reduction costs are by far higher than for instance in power generation.

Assessment: The implementation of differential en-route charges has not made strong progress since the release of the White Paper in 2001. A study conducted by CE Delft comes to the conclusion that the introduction of such an instrument is feasible in principle. It is also one of the measures considered in the Commission's Communication on "Reducing the Climate Change Impact of Aviation" of 27th September 2005. Political precedence has at the moment the integration of aviation into the EU-ETS, which has some advantages over the emissions charge, such as its high ecological certainty and a high economic efficiency when sectors with different abatement cost structures are to be included. When it is possible to integrate air transport into the EU-ETS in a timely manner, it is possible that this sector will contribute to the efforts of the EU to reduce anthropogenic climate change impacts by 2010.

[272] Cf. Wit, Ron C. N/Dings, Jos M. W. (2002), p. 39.
[273] Cf. Wit, Ron C. N/Dings, Jos M. W. (2002), p. 8.

XIV.5. Concluding Analysis of the Implementation of aviation-specific White Paper Measures

A mixed picture can be seen when comparing the objectives of the White Paper with the results of the European policy in the field of aviation by July 2005. One reason for this may be the problem to find a balance between demand driven growth and sustainable growth.

The Single European Sky initiative is well accepted by stakeholders and Member States alike, although the Regulations in place still have to prove if they are effective and sufficient. The efforts of some Member States to create functional airspace blocks (FABs) and the efforts towards developing a harmonised ATC infrastructure with the SESAME project are going in the right direction.

The creation of the European Aviation Safety Agency (EASA) is also widely regarded as positive; it is also a major step forward to establish the European Union as a counterweight to the USA in aviation safety policy. The development of EASA is a gradual process, eventually resulting in transaction cost reductions and establishing a harmonised legal framework in aviation safety policy, probably also extending towards technical supervision of airports and air traffic control.

Action in the field of air transport insurance requirements, protection against subsidisation of airlines from third countries and safety of aircraft from third countries has also been brought forward, although the impact of these measures will be seen in future.

Although it was a stated priority of the White Paper to introduce measures to reduce the environmental impacts of aviation, the results are disappointing so far. The introduction of the Community Framework for airport noise management does contribute to a limited extent to reduce the noise burden of residents near airports, as noise reduction through the phase-out of marginally compliant chapter 3 aircraft is compensated by the growth in movements of chapter 3 aircraft. The implementation of measures in the run of the "balanced approach" has been left to the Member States, which could be reluctant to implement effective measures, as they could fear to create competitive disadvantages for their aviation industry in comparison to other Member States.

Other measures regarding environmental impacts of aviation have not even been implemented so far. While kerosene taxation remains politically contentious, other instruments are in the discussion, such as a ticket surcharge, which would have some environmental effects due to reduced demand or the inclusion of aviation in the EU emissions trading scheme. The latter mentioned instrument is being prioritised.

The need for further measures aimed at environmental sustainability is likely to be increased when other policy measures such as liberalisation of bilateral air service agreements and commercial slot allocation procedures will be implemented that tend to increase the growth in traffic volumes and thus the pressure on the environment.

Concerning airport charges, two different aspects have to be distinguished. On the one hand, the White Paper discusses the question of how to regulate airport charges in a more general way, to include environmental aspects, to deter capacity constraints at peak hours or "to make to make airport charges actually correspond to the services provided".[274] The efforts so far to introduce a more general legislation on infrastructure charging have not resulted in legislation. A second aspect concerning airport charges is state aid for Regional airports, which has been used in the past to set airport charges below cost. This is a very pressing subject, as it tends to distort intra- and intermodal competition. In this aspect the Commission

[274] Commission of the European Communities (2001), p. 39.

has acted and released new guidelines that clearly define the scope of start-up financial aid for operators using regional airports.

From the perspective of economic efficiency, there is a need for action to introduce a groundbreaking reform in the slot allocation process in the Community. Such a reform should be aimed at increasing the contestability of major European airports, which should increase the intensity of competition between network carriers. The achievements so far on this subject have only very limited impact on the air transport sector.

One of the biggest objectives of the White Paper, the strengthening of competences for the Commission in the relation with third countries, could out of legal restrictions not be realised fully. As the ECJ decided, it is still the Member States that have a high degree of authority over the negotiation of ASAs with third countries, as long as they comply with Community law. The Member States can transfer their competences to the Commission, as it is done in the negotiations with the U.S. and other third countries. At least partially the Commission has achieved its objective, insofar as every Community airline will be in future allowed to offer air services to third countries from every point in the Community as long as no limits on the number of designated airlines exist. Finally, in its negotiations with the U.S. on a EU-US open aviation area the Commission has the chance to prove the advantages of centrally negotiated ASAs over individual negotiations. This could be seminal for future negotiations with Russia, Japan or China. Nevertheless, it remains uncertain if and when an agreement with the U.S. can be reached.

Table 5 on page 95 gives an overview in how far the measures proposed in the White Paper have been implemented on a European level. The first column shows the name of the measure and the second column shows its degree of implementation. In case the measure has been implemented by either a Directive or a Regulation that very much is in line with the objectives outlined in the White Paper, the degree is either "high" or "very high". In case the implementation is not yet fully realised, but a clear roadmap to implementation is visible the degree is "medium". In case no implementation has taken place and no concrete plans of implementation are visible the respective policy implementation will be rated either "low" or "very low".

The third column represents the potential impact of the respective measures on the air transport sector. The degree of impact varies highly, as for instance the protection against subsidisation of third countries' airlines has in practice only very limited relevance and therefore gets a rating of "very low", while bilateral air service agreements or slot allocation procedures are very important for the aviation industry's business.

In the last column it is evaluated, to which degree the EU was effective in achieving the White Paper's objectives with its political actions. For example, in the field of airport capacity expansion, there is not much that can be done on a European level in order to achieve the White Paper's objectives; therefore, the political effectiveness is rated as "low". In contrast, the efforts of EU institutions to create the Single European Sky have proved to be very effective so far; therefore, the rating is "high".

Table 5: Evaluation of policy implementation, its impacts and effectiveness

Measure	Policy implementation	Potential impact on air transport sector development	Political effectiveness to reach objectives
Creation of the Single European Sky	High	High	High
Harmonising technical requirements in the field of civil aviation and establishing a European Aviation Safety Agency	Very High	Medium	High
Air transport insurance requirements	Very High	Low	High
Airport Charges	Medium	Medium	Medium
Slot allocation on Community airports	Low	High	Low
Community framework for airport noise management	Medium	Very Low	Very Low
Protection against subsidisation and unfair pricing practices in the supply of air services from third countries	High	Very Low	Low
Safety of third country aircraft	High	Medium	Medium
Air service agreements with third countries	Medium	Very High	High
Airport capacity expansion	Low	High	Low
Introduction of kerosene taxation	Very Low	High	Low
Introduction of differential en route air navigation charges	Very Low	Medium	Low
Compensation of air passengers	High	Medium	High

Source: Compiled by the authors.

The implementation of five of the thirteen aviation-related measures can be deemed as effectively working towards the White Papers' objectives to a high degree. These are the creation of the Single European Sky, the creation of EASA, the introduction of air transport insurance requirements, the liberalisation of bilateral air service agreements and the introduction of air passenger care and compensation rights.

The implementation of two measures is moderately contributing to the reach the objectives of the White Paper, namely the measures concerning airport charges and safety of third country aircraft.

For the remaining six measures, either the policy implementation level is low (meaning that legislation has not been brought forward) or the impact of the legislation that has been implemented does not have a noticeable effect on the achievement of the White Paper's objectives in the air transport sector.

The results are particularly bleak in the area of environmental policy. A noise framework has been established, but it does have only a limited impact on the reduction or limitation of noise, as not only marginally compliant aircraft are a nuisance for residents near airports, but to a higher degree the total number of movements, especially during night-time. Legislation concerning a mitigation of global climatic impacts of emissions from aviation has been delayed again. Kerosene taxation and the proposal to introduce emissions-related en-route charges has made little progress. However, the integration of the air transport sector in the EU-ETS could prove to be an invaluable step to let aviation contribute to the efforts to reduce man-made climate change effects.

Table 6 below summarises the effects of the aviation-specific measures on general transport policy objectives.

Table 6: Net effect of the aviation-specific measures on transport policy objectives

	Effects on …				
Measure	Modal Shift	Improvement of Infrastructure and its usage	Environment	Global Competitiveness	User Rights
Creation of the Single European Sky	-	+	-	+	o
Harmonising technical requirements in the field of civil aviation and establishing a European Aviation Safety Agency	o	o	o	+	o
Air transport insurance requirements	o	o	o	+	o
Airport Charges	+	+	+	o	o
Slot allocation on Community airports	+	+	-	o	o
Community framework for airport noise management	+	o	+	o	o
Protection against subsidisation and unfair pricing practices in the supply of air services from third countries	o	o	o	+	o
Safety of third country aircraft	o	o	o	+	+
Air service agreements with third countries	o	o	-	+	o
Airport capacity expansion	-	+	-	+	o
Introduction of kerosene taxation	+	o	+	-	o
Introduction of differential en route air navigation charges	+	o	+	o	o
Compensation of air passengers	o	o	o	o	+

o Measure has neutral effects
+ Measure has positive effects
- Measure has negative effects

Source: Compiled by the authors.

At this point it is worthwhile to discuss the impacts of the aviation-related measures concerning the towering objective to return in 2010 to the modal split of 1998. Actually, most of the measures implemented so far contravene this objective, as they aim to either reduce costs for airlines (SES, EASA) or make air travel more attractive for passengers (compensation rules, increase in safety). So far, no measures have been implemented that aim at the internalisation of social costs, which are caused by commercial air transport. These measures would most likely increase prices for air transport, probably resulting in a switch to other modes in certain instances.

However, the return to the modal split of 1998 as an objective in its own is questionable. One can wonder how it shall be possible to reconcile expansion of competition without allowing traffic to grow. It has ever since been the objective of the European Union and the Commission to foster competition, in this particular case not only within the modes, but also between them. Aiming at a modal split target that is arbitrarily set will not even be able to cure the symptoms and even less be able to eliminate the true problems.[275] Modal split alone is an insufficient indicator for sustainability. When the deficits of environmental legislation, foremost in the field of internalisation of externalities would be rectified, there would be no need to determine the modal split politically. For the field of air transport policy, this means that infrastructure expansion and capacity enhancement is as obligatory as the internalisation of external effects. This must become a mandate for successful European transport policy, as it ultimately will achieve the Commission's key objectives: a competitive environment encouraging growth, while emphasising the need for sustainable development.

Besides the aspect of competition between the modes, also aspects of intermodal cooperation should be emphasised in future, as aviation is an integral part of the transport system. Attractive combinations of air transport and high speed rail for example could on the one hand reduce the need for short-haul feeder flights, freeing up slots for more attractive flights at congested hubs. But on the other hand it must also be mentioned that rail connections enhance the accessibility and subsequently the attractiveness of airports,

[275] Cf. T&E (2001), p. 2.

leading to higher passenger volumes and negative repercussions on the overall environmental balance. These systems aspects again show that a highly differentiated set of economic, legal and political instruments is needed to "Striking a balance between growth in air transport and the environment", as the White Paper outlines.

With the implementation of the recommendations outlined in this study in addition to the measures already implemented, it is likely to come closer to a more efficient air transport system that remains one of the bases to achieve prosperity, economic growth and a competitive position in the globalised economy.

XIV.6. Future Developments

An exact prediction of what the future of worldwide aviation in general or of aviation in Europe in particular will be like is hardly possible. The events of 9/11/2001 have shown how an unforeseeable development can have the most drastic implications for people, companies and countries. However, this chapter shall outline in some broad brushstrokes the direction of developments that can be observed today.

Fuel price increases due to high demand for oil from China and India

The economic well-being of airlines is highly dependent on input prices. Fuel has a share of up to 25 per cent in an airline's operating cost. While in the past it was possible for many airlines to hedge their fuel demand against temporary price shocks, it is expected that oil prices will continue to increase in the near future due to high demand primarily from the emerging economies like China or India. On the supply side, it is expected that it will become increasingly difficult to find new oil fields, which can be exploited cheaply, whereas existing oil wells will begin to dry up when they approach the end of their production life cycle. In case of an oil price spike of $105 per barrel as predicted recently by Goldman Sachs[276], severe effects on the demand and supply of air transport services could materialise. Rising input prices will make it necessary to increase average fares. This in turn would lead to a reduction in demand, making it problematic to keep up load factors and utilise aircraft efficiently. This especially could be a problem for low cost carriers that will receive aircraft by the hundreds in the years to follow.

Air service agreements under a governance of WTO or GATS

In chapter XIV.4.9, the Commission's efforts towards more liberal bilateral air service agreements have been discussed intensively. It has been shown that the current framework of bilateralism is associated with unfavourably high transaction costs, when it comes to an empowerment of the EU to foster liberalisation of air service agreements.

Alternatively to the sixty-year-old bilateral system under the Chicago Convention, it is conceivable to conclude multilateral air service agreements or to put the provision of air services under the governance of WTO or GATS.

First instances of a softening of the system of bilateralism are clearly visible. Good examples for a multilateral approach is the agreement concluded by the USA, Brunei, Chile, New Zealand and Singapore in 2000 or the sixteen-state Arab Civil Aviation Commission agreement. These agreements show how a new type of governance for civil aviation is emerging throughout the world.[277]

Alternatively, the governance of the World Trade Organization (WTO) for the international aviation industry in terms of e.g. traffic rights under GATS principles must be warrant for consideration. Should this idea become reality aviation would clearly follow in the footsteps of global liberalisation of the trade in goods and services. It could be conceivable that the responsibilities of ICAO are reduced to non-commercial aspects like safety and security issues and that all commercial aspects are transferred over to the WTO.

A potential WTO governance could eliminate or at least ease the potential impediments that the Commission is likely to face when trying to further implement its external dimension.[278]

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[276] Cf. Anon (2005b).

[277] Cf. Marchick, D./Newman, D. S. (2002), p. 451.

[278] This view is also shared by Martin Dolan who states that "GATS is a viable option for aviation liberalization.", Dolan, M. (2003), p. 45.

However, following this approach, the transaction costs until an agreement under WTO governance is reached, must be considered as well. As the application of the transaction cost theory on Community-wide negotiations has shown, the more conflicting interests have to be dealt with, the longer the contracting process will be. Thus transaction costs increase drastically. A predecessor for a possible WTO approach must therefore be a single Community voice, in order to keep the number of conflicting interests as low as possible. But to achieve this single voice is already remarkably difficult.

While a global liberalisation of air transport services under the auspices of WTO in principle can be considered as economically beneficial, it must be admitted that this is mostly wishful thinking, as the air transport sector continues to be associated with national pride and the fostering of national flag carriers is a widespread phenomenon throughout the world. Many countries in the world rank their national pride first, regardless of the economic cost and loss of social welfare associated with such a policy.

Low-cost-carrier Dominance

It is highly likely that the success story of low cost carriers in Europe will continue in the next years. LCCs did not only make air travel affordable for a large part of the population in Europe, but they also changed fundamentally the way how aviation stakeholders conduct business. For example, some of the LCC expect that they will be awarded with payments from airport operators, tourism boards and hotels as they argue to generate positive external effects on these businesses. It must be carefully assessed that legislation in this area does not constrain the creativity of such business models. Inherently, there is always a danger for over-regulation and that structures will be fundamentally preserved, even when they become obsolete or the market could find more efficient solutions by itself. Nevertheless, it must be admitted that it is not easy to find a balance between the sometimes opposing poles equitability, competition, services of general interest and the environment

Given the high growth rates in the LCC sector and the number of unfulfilled orders for new aircraft (in July 2005 Air Berlin, Easyjet and Ryanair alone have outstanding orders for 279 aircraft) that will be pushed into the European market, one can expect rapidly growing market shares and even more pressure on legacy carriers. This could ultimately lead to the dominance of the low cost carrier business model on short-haul flights within Europe.

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