



DIRECTORATE GENERAL FOR INTERNAL POLICIES
POLICY DEPARTMENT B: STRUCTURAL AND COHESION POLICIES

TRANSPORT AND TOURISM

THE IMPACT OF THE ECONOMIC CRISIS ON THE EU AIR TRANSPORT SECTOR

PROVISIONAL VERSION

NOTE

This document was requested by the European Parliament's Committee on Transport and Tourism.

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Abstract:

This briefing note intends to provide background information concerning a number of crucial aspects explaining the impact of the economic crisis on the EU air transport sector. Firstly, the current impact of the economic crisis in terms of freight and passenger transport is analysed, by using a set of key indicators. Secondly, some possible scenarios for the mid-term development of the air transport sector in relation to possible developments of the general economic situation are described. Finally, some recommendations for EU policymakers are made.

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Introduction

Transport economics in general and air transport in particular can be considered to be the laboratory of economic activity. The derived character of transport is obvious. An increase in economic activity, industrial production and expanding trade relations will inevitably result in an ever-greater need for transport. A decrease of the same parameters will result in a decreasing demand for transport (Blauwens et.al., 2008, p. 291). Within the transport sector, air transport seems to be more sensitive than other modes. The question arises how economic growth and international trade will develop in the future, in the face of the recent financial crisis that affected world economy.

The EU's transport system has become a very important factor of the Union's economy. At the same time, it is highly sensitive to, and dependent on, economic developments in other sectors. By the end of 2008, the worldwide financial crisis had increasingly become a global economic crisis. In the meantime, the consequences of this crisis for the transport sector became clear:

- a strong decrease of transport demand because of less transported passengers and goods;
- a dramatic reduction of supply (e.g. through bankruptcies and reduction of frequency);
- changed transport flows (e.g. through mergers of routes and loops);
- lower company profits and a dramatic worsening of companies' financial situation;
- changed strategies.

It can indeed be assumed that this crisis has already had a strong impact on the EU's air transport sector as well.

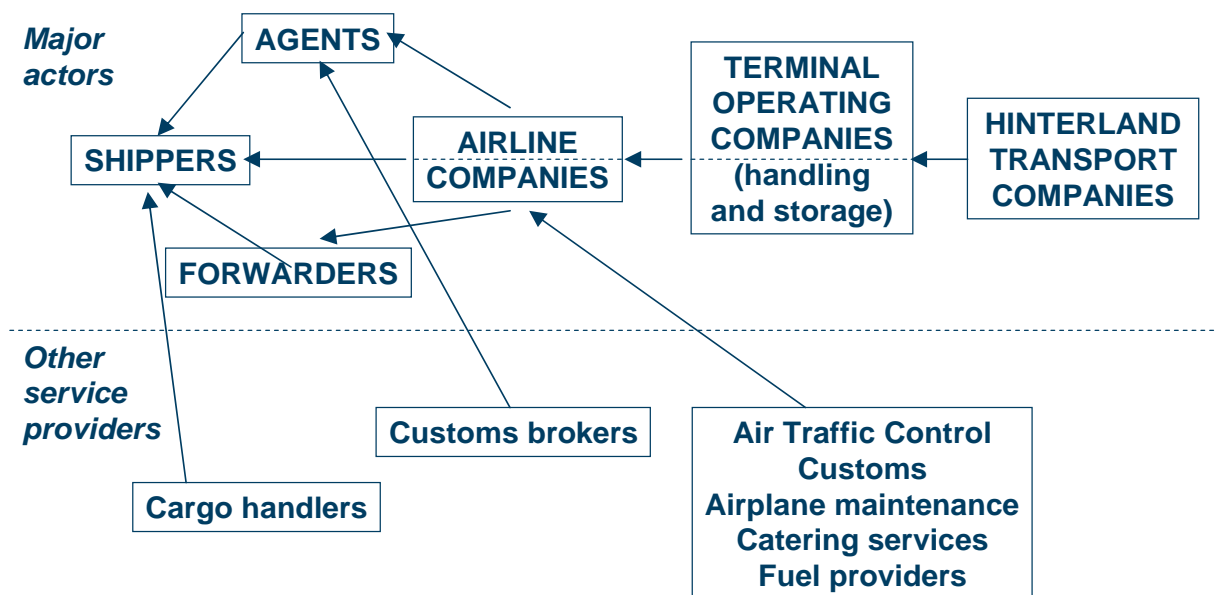
This paper intends to provide background on a number of crucial aspects explaining the impact of the economic crisis on the EU air transport sector. Firstly, the current impact of the economic crisis in terms of freight and passenger transport will be analysed, by using a set of key indicators such as traffic and capacity data, micro- and macroeconomic data, and employment figures. Secondly, we will describe some possible scenarios for the mid-term development of the air transport sector in relation to possible developments of the general economic situation. Finally, some recommendations for EU policymakers will be made on how EU policy can contribute to mitigating the impact of the economic crisis on the air transport sector.

1. Structure of the air transport sector

Too often the air transport sector has been considered as a homogeneous sector. This is not correct. The air transport business involves a highly heterogeneous array of actors (Meersman et.al., 2008, p. 75-78). Some remain subject to a form of state control, others are fully privatised, and others yet operate under a mixed regime. As far as the privately controlled players are concerned, the corporate objective is obviously profit maximisation. The non-privately controlled players, on the other hand, usually pursue other goals, such as maximisation of employment and/or value added, or, more generally, the maximisation of socioeconomic surplus.

In order to understand the evolution of the air transport sector, it is necessary to be aware of the relationships between all actors. As an illustration, figure 1 provides insight into the structure of relationships between actors in the air cargo business. The arrows indicate existing relationships and their direction. These relationships may, in a subsequent phase, be quantified. A similar methodology was already successfully applied to port and maritime relations within the port of Antwerp in Coppens et al. (2007). Similar figures can be composed for the passenger sector and the integrator business.

Figure 1: Air transport actors (cargo business case)



Source: Meersman et.al. (2008, p. 77)

It is equally interesting to highlight and subsequently quantify the existing links between partners at airport level. It is important to know who provides which services to whom, and to what extent actors are dependent upon specific suppliers and clients. Consider the example of Sky Europe that went into bankruptcy in September 2009. A major competitor, Wizz air, entered immediately in some of the routes of the former Sky Europe network. The question arises which airports will be kept by Wizz air and which airports served by Sky Europe will not be incorporated in the Wizz air network. Second, what are the derived effects for service suppliers, including ground-handling companies?

There are clearly forms of cooperation between actors in the air transport industry, both within a particular subsector (e.g. the airline industry) and beyond (e.g. between airlines and ground-handling companies). Table 1 provides an overview of the different kinds of links encountered.

Table 1: Co-operation between actors in the air transport industry

Market actors	Airlines	Handling companies	Airport operators	Authorities
Airlines	<ul style="list-style-type: none"> * Mergers and acquisitions (e.g. Air France and KLM) * Alliances (e.g. Star, SkyTeam, Oneworld, WOW) * Code-share agreements * Joint ventures (e.g. Lufthansa Cargo and DHL Express) * Financial participations 			
Handling companies	<ul style="list-style-type: none"> * Previously mostly integrated in airline, nowadays often outsourced to third party handling companies * Specific contracts (e.g. in 2007 Martinair with Aviapartner, for 9 German airports, for 3 years) 	concentration by take-overs (e.g. Menzies, Globeground, Aviapartner,...)		
Airport operators	<ul style="list-style-type: none"> * Financial participation (e.g. Lufthansa in Munich) * Co-operation between airports and airlines (e.g. Charleroi and Ryanair) 	<ul style="list-style-type: none"> * Concessions and licences * Integration 	Mergers and acquisitions (e.g. Brussels Airport by Macquarie)	
Authorities	Participation of governments in Flag carriers (e.g. TAP)	Monopoly by airport authority or its sole concessionaire	Participation of government in airports, including (partial) privatisation	Participation of two governments in an airline

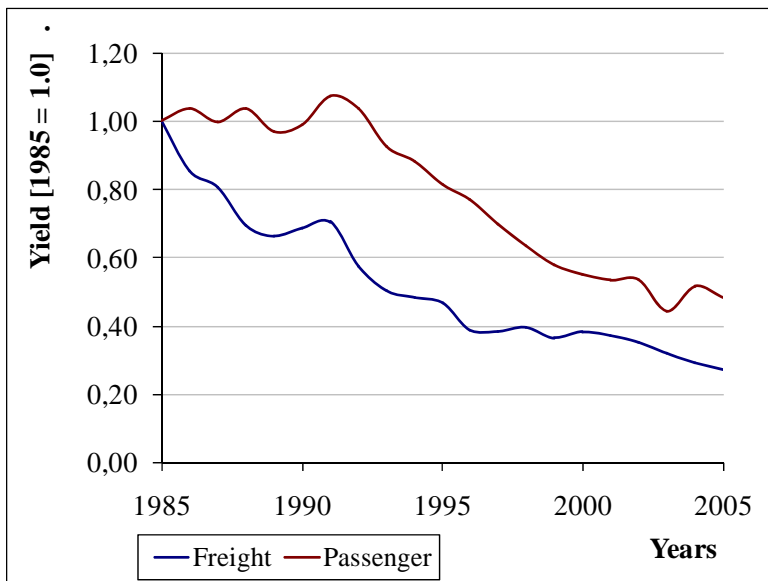
Source: Based on Meersman, Van de Voorde and Vanelslander (2008, p. 77)

Each company operating in the air transport business may have committed themselves to different types of agreement with different players. German carrier Lufthansa, for example, has effectively taken over control of a number of airlines like Brussels Airlines, Austrian and Bmi, while at the same time entering into code-share agreements with numerous other carriers and promoting also the entry into the air transport network of the German rail network, causing a very significant improvement of accessibility to and from German territories. Moreover, the company is a core partner of the strong Star airline alliance. Each merger or acquisition can have consequences for the relationships with other actors, e.g. at ground handling level. Hence, for each enterprise, a specific cell can distinctly be identified in table 1, as every market player has a specific structure and corporate history.

A thorough analysis of the strategic behaviour of a number of carriers shows that, while each airline tends to position its own product in a specific way, the available tools are invariably the same. The approach taken always combines control over the unit cost and optimisation of the seat occupancy or loading factor with a striving to maximise the yield.

In the future, ever greater emphasis will be placed on achieving a sufficiently high yield - Figure 2 below provides good evidence of the impact of the crisis in airline yields - with carriers also generating income from non-flying activities through every passenger. Ryanair is a case in point. Not only does the company apply many surcharges, including a luggage check-in fee and a fee for payment by credit card, but significantly, in recent financial years Ryanair generated more than half of its operational result (earnings before interest and tax) through activities that had little or nothing to do with flying. Typical examples are such diversification activities as car rentals and hotel room reservations, for which Ryanair earns a commission. This brief analysis of the air transport industry shows quite clearly how the airline industry is subject to constant change and how it is evolving towards new business models (e.g. the example of Ryanair in the LCA-market). Hence the importance of being able to estimate the potential impact of the current economic crisis on the future airline market, the airline actors and their business models.

Figure 2: Airline yields (freight and passengers)



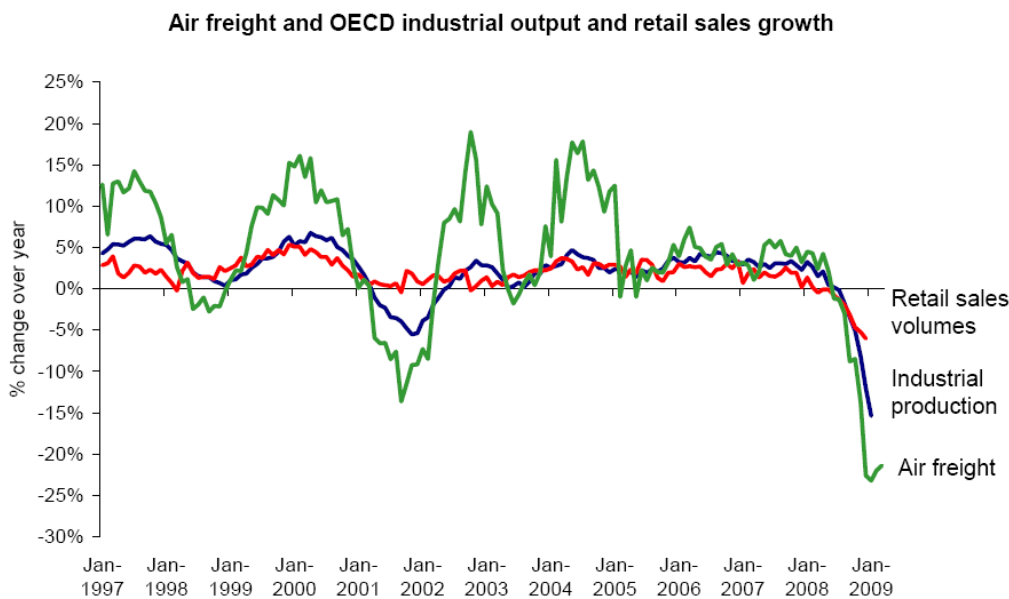
Source: IATA

2. Trends from the past

The evolution of air transportation at worldwide level has shown how economic prosperity can bring along greater demand for mobility and with it an increased willingness for air travel. Supported by several research studies, it can be assumed that as people get wealthier, they may afford to travel further and more often, paying for goods and services brought from further afield (Figure 3). In the particular case of air transport, this trend has been amplified by technological advances, low energy costs, improved operational cost efficiencies and strengthened competition within the industry.

World economy is now increasingly dependent on air travel, also with a growing share of freight, by value, conveyed by air. Tourism and business travel have caused a strong development in airport capacities at worldwide level, supporting millions of jobs in both developed and developing countries. Today it seems impossible to dissociate the success of economies from the ability to maintain and develop international air transport links. Air transport, whether for leisure or business, is now a common experience. The increasing affordability of air travel has opened up new destinations and opportunities. The low cost phenomenon provides good evidence for the mass customization of the air travel services (Macário et al., 2008), bringing to air transport customer segments that would never before have dreamed to fly regularly.

Figure 3: Coupling economic wealth with evolution of air transport



Source: IATA, Haver

However, this context can change quickly and in a very radical way for the industry. A context analysis (Macário et al., 2009) led us to the identification of the following drivers that affect the future trends of air transport. A growing social concern about sustainability and environment together with a clear understanding for more than a decade by most citizens that the contemporaneous transportation system substantially contributes to this deterioration. However, social attitudes towards air transport are possibly not as critical as they are of other modes, in particular towards surface transport.

The recognition of complex issues associated with the current technological paradigm in transportation across all transport modes have triggered R&D efforts towards the emergence of new engine technologies and cleaner fuels. This represents the sort of essential tension that is implicit in paradigm shifts, as a reaction to the growing perception of the “anomalies” behind the unsustainability patterns that characterize current transport systems. Hence manufacturers, both of airframes and engines, have a very strong interest in such continuing growth and, simultaneously, play a crucial role in making this change happen, despite the fact that state-of-the-art in energy efficiency is currently at around 3 litres per 100 seat-km (in the brand new AIRBUS 380), which brings energy efficiency per passenger in air transport to the scale standards of a modern diesel vehicle.

Economic development has led to an increase of income, stimulating leisure and personal travel which affects markets in a differentiated way. However, while there are no signs of an early economic recovery, the sector faces additional potential great risks on the demand side, including rising oil prices and now the impact of Influenza A (H1N1). Cash flow is threatened by weak demand¹, leading to capacity adjustments and thus decrease of ASK, and worsened by fare discounting upon several years of continued cost reduction, making it difficult to cut costs any further. The next table shows evidence on how the current economic context is affecting the sector in the different geographical markets.

Table 2: IATA Recorded Load Factors² - 2009 vs 2008

YTD 2009 vs. YTD 2008	RPK Growth	ASK Growth	PLF	FTK Growth	AFTK Growth
Africa	-9.2%	-5.6%	69.0	-22.5%	-19.8%
Asia/Pacific	-12.0%	-7.7%	70.6	-22.3%	-16.4%
Europe	-7.6%	-4.8%	73.5	-21.6%	-9.4%
Latin America	-3.2%	1.0%	70.4	-19.6%	-8.6%
Middle East	7.1%	12.5%	71.1	-5.5%	11.5%
North America	-8.9%	-5.3%	76.6	-22.2%	-9.9%
Industry	-7.6%	-3.9%	72.6	-20.6%	-10.4%

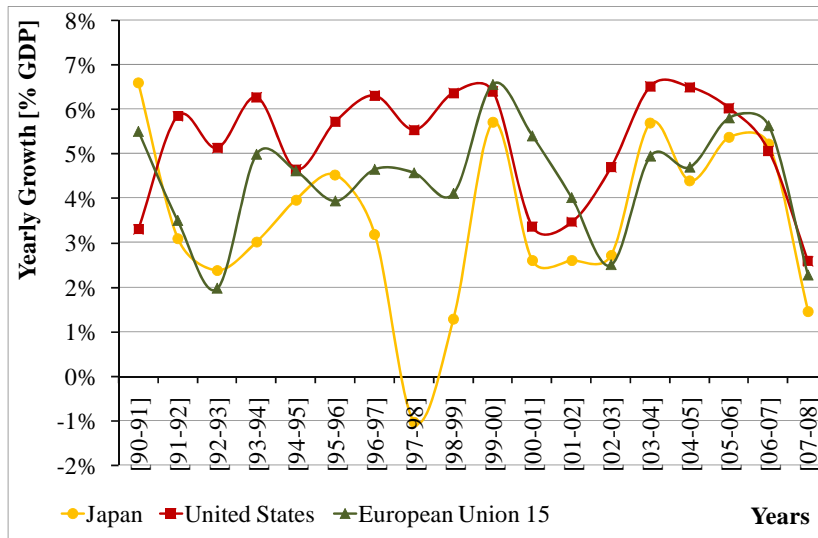
Source: IATA (August, 2009)

However, the past trends have been that the world’s economy has a cyclic nature and thus every crisis is followed by periods of relative growth, as illustrated in figure 4.

¹ Leading companies to adjust their offer and consequently decrease the available seat kilometres (ASK) and also available freight tonne kms (AFTK) so that passenger load factors (PFL) are maintained at an economically viable level. For the freight load factor (FLF), the situation has a more difficult interpretation since in combined airlines (that is the ones transporting passenger in the upper deck and freight in part of the lower deck) the payload left for cargo is a consequence of the space left by passenger, respective luggage and mail, which always has priority over freight. Due to this planning constraint, it is only relevant to talk about FLF when discussing full freight service offer.

² RPK: Revenue Passenger Kilometres measures actual passenger traffic
 ASK: Available Seat Kilometres measures available passenger capacity
 PLF: Passenger Load Factor is % of ASKs used. In comparison of 2009 to 2008, PLF indicates point differential between the periods compared
 FTK: Freight Tonne Kilometres measures actual freight traffic
 AFTK: Available Freight Tonne Kilometres measures available total freight capacity
 FLF: Freight Load Factor is % of AFTKs used

Figure 4: GDP yearly growth - 1990 - 2008



Source: OECD (Note: current prices, current PPPs, annual levels, seasonally adjusted)

The most influential issue to consider in the context of economic settings framing the future of air transport is perhaps the instability of oil prices. The recent evolution with unstable ups and downturns do provide symptoms that the issue of a structural oil price increase is not yet to be neglected when thinking of future scenarios for the industry. In whole, this sort of hectic behaviour pattern may lead to rethinking how far conventional economics can explain the economics of exhaustible resources as pointed out by some authors (Hotelling H., 1931, Marques C, 2005), in particular when it is already clear that the price of oil today has virtually no influence on the rate at which it is discovered. There are also profound changes in demand - passenger and freight - when compared with the last two decades. Regarding passenger traffic, there are new affordable tourist destinations (e.g. the Asian market, new emerging economies, etc) and price rather than other convenience features are dominating travel choice even for the business segment. Reinforcing this trend, the use of self-service facilities for travel booking allows the passenger to "cherry pick" the best offer in each leg of her trip. Regarding freight traffic, commoditisation produced several effects, i.e. an increase of tradable goods; progressive reduction of weight and size, an increase of the intrinsic value of commodities; an increase of transport distances between origin - transfer of production to the East - and destination - major consumption centres in West; and an increase of the quantity of goods to transport - growing demand for transport services.

As to the environment, in Europe, transport emissions were 20% of total CO₂ emissions in 2005 (EEA, 2007). Transport activity is growing rapidly, reinforced by the continuing processes of globalization. Between 1990 and 2005, greenhouse gas emissions from transport increased by 26% in the EU-15 (EEA, 2007). This brings conflicting policy challenges for the EU in particular. Besides, the implementation of European Emission Trading Scheme (ETS) is a milestone in this respect. Civil aviation has so far been exempted from the ETS. However, the European Commission has proposed a schedule to bring this sector within the ETS scheme: until 2011, all domestic and international flights within the European Union; and until 2012, all flights with origin or destination within the European Union - including non-European Union companies. Non-EU Member States'

airlines wishing to fly into EU will have to buy allowances to cover emissions for the entire route, both in EU and non-EU airspace. The schedule was already adopted by the Council and by the European Parliament,

From this analysis, ten major trends could be identified (Macário et al, 2009), three of which are transversal to all drivers, the remainder being driver specific. The next table summarises these trends.

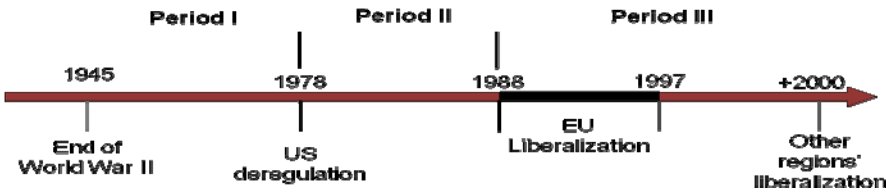
Table 3: Trends in air transport

CONTEXTUAL DRIVERS	INTERNAL	
	Trends & Drivers	Trends
Social	Networks and growing impacts of networking	Changes in air transportation market structure;
Technological	Technological evolution	
Economic	Evolution towards a mass-market sector; increasing safety concerns; Emerging new forms of modal competition; Irregular space and time distribution of the sector	Changes in airlines, airline-airport and airports relationships;
Political	Liberalization and deregulation of the market	Declining Yields;

Source: Macário et al (2009)

In fact, the political driver has very much marked the pace of what we call the competitive market waving in the air transport sector. The timeline presented below depicts the evolving deregulation process that the market has been going through since the end of World War II.

Figure 5: Market deregulation timeline



Source: Macário et al. (2009)

Table 4: Evolving Regulatory and Competitive Environment

REGULATION	DEREGULATION	RESHAPING	CONSOLIDATION	REGENERATION
Stabilized capacity	Increased capacity	Cost reduction, increased efficiency	Industry consolidation (alliances) Contestability reaches labour structures	Loss of stability, trend towards, increase capacity
Market captured	New entrants	Restructuring operations to improve performance, use of network effects	Market loses contestability and gains discipline	Unbundling services by market segment
Bundled services	Unbundling of services	New service growth	Networks extend to airports and airlines	Activity-based cost specialisation
Low diversity in offer	Reduction of prices	Weak players	Fortress hubs emerge as structurally secure positions	Network fragmentation
Slot distribution based on grandfather rights	Slot as a competitive instrument	Slots commercially driven, Network approach and partnership dependency	Slot trading emerges	Big airports move to slot auctions
Airports as a strategic infrastructure	Airport start tackling competition	Airport as intermodal nodes of a chain	Airport as multifunctional logistic platform	Airport moves towards business diversification, emergence of concepts like airport-city. Shareholder value concept becomes decisive.
Regulation focuses on enhancing competition	Regulation focused on safety/security	Regulation focused on quality of service and customer welfare	Regulation focused on enhancing competition	Regulation focused on safety/security, need for cross sector regulation emerges
CURRENT SITUATION		ASIA	EUROPE	USA

Source: Macário, R. (2008)

This process has not been simultaneous in the whole world; on the contrary: world regions have entered a learning process largely led by the USA deregulation act of 1978, followed by Europe one decade later and then Asia, in the next decade. This process is composed of several stages that the industry has adopted in a sequential way, intertwining with regulatory actions and market reaction. Looking back, we can depict a five-stage evolution largely dominated by the need to correct the effects of the previous stage (agents' behaviour) as presented in table 4. In fact, with the exception of the 1978 act in USA and 1988 initiation of the deregulation process in EU, we can observe that regulatory power overall has been more reactive (i.e. correcting market failures) than proactive (i.e. led by a long term political vision for the industry). It is worth noting that the main motivation for

the market to change from one stage to the next has been the agents' strategies aiming at market preservation.

In the background, the evolving regulatory framework has followed three periods, as shown in Table 5.

Table 5: Periods in regulatory evolution

Period I
<ul style="list-style-type: none"> • Heavy regulation - USA and Europe - of both national and international air transport service • Air transport in other regions was emerging mirroring the western regions • Common air transport network configuration: point to point • European air transport sector was essentially publicly owned - deep vertical integration
Period II
<ul style="list-style-type: none"> • Turmoil in the US air transport system in the aftermath of deregulation - shift towards profit driven • US international transport services remained regulated by bilateral agreements • Major transformation in the US national air transport system - implementation of hub and spoke system (indeed this system already existed, but legislation prevented further development) • Emergence of the low cost companies (Southwest) • A key factor for low cost companies' success is the airport conditions (both operational and financial) • Relationship airport – airlines is now more commercial, with the existence of more or less strong alliances (case of hub airports) • US initiatives to establish more open bilateral agreements • Europe remains unchanged but prepares the deregulation, learning from USA experience
Period III
<ul style="list-style-type: none"> • International and national traffic within EU is totally liberalized. • Other regions around the world follow the example (Australia and New Zealand). • Other liberal agreements for international air transport are established between the US, the EU and other regions • Within the EU, there was a shift towards a commercially driven environment, although slower than the US because the liberalization took 10 years (and many member States found ways to continue support and protect their national carriers) • Low cost companies enter a fast development process, in all deregulated or liberalized regions; air transport market became highly volatile with many entries and exits • Similarly to the US, alliances between airports and airlines seem to be of paramount importance • Regular airlines need a hub to operate; and the airport (in many situations publicly owned) needs the airline's income • In case of low cost, airports' fees and operational properties are the definitive decision factors; airports (most of them regional and publicly owned) need the airlines to survive and foster region's economy

Source: own composition

The trend's review presented above may be summarized as follows:

- Overall, the long-term growth points at 5 percent a year worldwide, driving demand for expansion and improvement.
- Reshaping: Development of multiple airport systems in metropolitan areas and of niche airports (for leisure traffic or cargo).
- Commercialization: business management in a market economy. Economic performance and efficiency become salient criteria for design.
- Globalization: transnational airlines' and airports' alliances, driving worldwide best practices.
- Technology change: propelling integrated carriers and rearranging handling through electronic commerce and ticketing.
- Airport Networking, airline networking, airport-airline joint-ventures/alliances.
- New modal competition: high speed train, improvement and investment in competitive infrastructure and modal business model sophistication (high-speed rail, etc).
- Others (airport cities, specialized airports suiting airlines and carrier-specific needs).

From the nature of the trends' evolution reviewed we can induce the need for a paradigm shift in projecting the future of air transport. Overall, it is necessary to adopt a globally integrated perspective of industry using a system approach. For instance, it is necessary to match airport and airline drivers, analyze cross effects through the overall air transportation industry, look at cross interferences through nations and continents worldwide (irregular time and spatial demand distribution) and to changing economic, social, technological, political and management variables. Last, but not least, it is necessary to consider that a likely future scenario is the reduction of mobility supported by the fast development of ICT technology as well as the integrated transport chains, using several modes, as a way of optimising sustainable transport solutions of. The main drivers causing this paradigm shift can be rooted from issues such as: sources of energy and environmental preservation; sustainability pressure driving reduction of mobility needs; technology and interoperability (e.g. aircraft size, ULD, AWO devices, ITS, challenging high traffic density and congestion issues, etc); diversification of business models to maintain air carrier yields)

The new challenges faced by the sector can be summarized as follows:

- To be able to provide at least the same service level with much fewer resources.
- Deal with new requirements, such as security.
- Deal with data sharing with third entities.
- Airports must compete between themselves for transfer passengers while developing attractive facilities for specific customer segments.
- Alliances moved one step further: first, airline – airline; then, airline – airport; now, airlines-airportsRailways (in passenger) or roadways (in freight). In the future, very likely other asset and/or financial partners will join - intermodality is the new product, for both passengers and freight, and brings new agents, new processes, and new technologies into the air transport system.
- Development of sustainable intermodal alliances that will inevitably bring new agents to the industry
- Deal with new ways of asset management aiming to reduce industry sunk costs.

3. Impact of the crisis

It's clear that the current economic crisis will change the structure of the European air transport sector. Therefore, one should try to get an outline of the future market while incorporating potential effects of the economic crisis. Uncertainty can never be eliminated entirely. At best, it can be channelled to some extent.

In what follows, we shall attempt to outline possible future developments. Our starting point is invariably a combination of the present situation, recent trends and a set of endogenous and exogenous variables. Among the exogenous variables under consideration are such factors as economic activity, fuel prices and the price of aircraft, either newly purchased, second-hand or leased. Endogenous variables are the yields, the cost structure (cf. hedging agreement or not), financial indicators, capacity utilisation, mergers and acquisitions.

The future developments we wish to put forward are the following.

- Alliances, consolidation and niche players
- Privatisation, or the end of flag carriers
- The influence of cross-border mergers and acquisitions
- Survival of the Southwest-model?
- More bankruptcies
- New market entries and increasing aggressiveness
- Changed influence of governments
- Extreme volatility of the airfreight market
- Increasing foreign capital
- Less employment

3.1. Alliances, consolidation and niche players

A clear distinction should be made between global network carriers on the one hand and niche players on the other (Meersman et.al., 2008, p. 78). The global network carriers have consolidated through so-called strategic alliances into a limited number of fiercely competing networks, both in passenger and in freight transport. Niche players have been able to exploit market opportunities that presented themselves because of geographic characteristics, for instance by operating strongly from small regional airports, or through specific services, such as low-cost activities and express freight transport.

Three important strategic alliances remain. Table 6 provides an overview of their present composition.³

³ There are, after all, still a number of European carriers, such as Olympic Airlines, that are not part of an alliance. However, incorporation into an alliance will only happen if there is no overlap with the existing network, i.e. with the present alliance members. Moreover, the positive effect on the profitability of the alliance must be clear to see. A far-reaching integration within an existing alliance, on the other hand, is likely to be complicated by intercontinental legal discrepancies.

Table 6: Composition of strategic alliances (September 2009)

Alliance	Air companies
Star Alliance	Air Canada, Air China, Air New Zealand, ANA, Asiana Airlines, Austrian, bmi, Egyptair, LOT Polish Airlines, Lufthansa, Scandinavian Airlines, Shangai Airlines, Singapore Airlines, South-African Airways, Spanair, Swiss, TAP Portugal, Thai Airways International, United, US Airways Regional members: Adria Airways, Blue1, Croatia Airlines
SkyTeam	Aeroflot, Aeromexico, Air France, KLM, Alitalia, China Southern, Continental Airlines, Czech Airlines, Delta Air Lines, Korean Air Associates: Air Europa, Copa Airlines, Kenya Airways
Oneworld	American Airlines, British Airways, Cathay Pacific, Finnair, Iberia, Japan Airlines, LAN, Malev, Qantas, Royal Jordanian

Source: Star Alliance (2009), SkyTeam (2009) and Oneworld (2009)

The purpose of alliances is clear: through technological cooperation and the tool-sharing that it implies (code sharing, interlining,...), potential customers are offered a network that covers the greatest possible number of major destinations, and at the same time profitability is assured and even enhanced. The pressure of profitability will continue to exist in the near future, so that one may assume that a further concentration movement will ensue. The current crisis will intensify this trend. However, the question does arise whether this concentration will be achieved through the inclusion of new partners, or through a more profound integration of existing partners, or perhaps through both. Another question arises, namely whether more concentration can result in market dominance by a limited number of carriers, with the risk of abuse of market power. Within the Star Alliance for instance, we see an increasing market power of Lufthansa, cf. the capital control of Austrian, bmi and even Brussels Airlines. The move towards market dominance has been accelerated by the crisis, cf. the lack of capital of smaller companies.

The niche market is in crisis. In 2005, a totally new product was launched that is known as 'business-only transatlantic travel'. Aircraft were converted into a configuration to suit the business traveler, with personal space and a check-in procedure that is more speedy and less stressful than in services offered by traditional carriers. Promoted as a low-fare, all-business-class service, the aim was to persuade economy-class customers to pay slightly more in return for a more personalised service. In the London-to-US market, three airlines were operating such a service in 2007: EOS Airlines, Maxjet Airways en Silverjet. All of them disappeared before June 2008⁴.

The original success of such services has inspired Lufthansa, KLM and Swiss International Airlines to launch their own all-business transatlantic flights from continental Europe. To this end, they cooperate with the Swiss operator PrivatAir.⁵

⁴ EOS launched its service between Stansted and New York JFK in October 2005, but ceased operations on 28 April 2008. Maxxjet ceased operations on 26 December 2007, while Silverjet ceased operations on 30 May 2008.

⁵ The system works as follows: PrivatAir leases the aircraft and draws up a wet-lease contract with the airline in question. PrivatAir provides the crew, catering and in-flight entertainment, it takes care of maintenance and bears all operational risks. The partner airline markets the service and sells the tickets.

3.2. Privatisation, or the end of flag carriers

The former market domination by flag carriers that were completely or largely controlled by national authorities, has disappeared. Former flag carriers have been or are in the process of being wholly or partially privatised. New entries are almost always financed with private capital. The cases of British Airways, Air France, Alitalia and others shows very clearly how public stakes in carriers are becoming smaller or, in some cases, have disappeared altogether. It's not clear yet whether the current economic crisis will influence privatisation plans of the few remaining companies with an important public partnership (e.g. TAP Air Portugal).

Equally interesting is the fact that some airlines are now participating in the capital of other carriers. This trend has been intensified by the economic crisis, cf. the need for re-capitalisation of some airlines.

Privatisation movements also generate competitive strategies. In 2006, Ryanair acquired a blocking minority in Aer Lingus, facilitating its own bid for the former flag carrier and enabling it to prevent others from bidding. The Irish state retained a 25.4% stake. This battle for control over Aer Lingus illustrates how the public authorities can become involved in a tug of war over a largely privatised carrier.

The privatisation wave is also noticeable in the airport sector. In the future, carriers will be increasingly confronted with privatised airports. The main goal is now profit maximisation. The result is bilateral negotiations between two profit maximisers that (must) take into account the portfolio of alternative solutions available to their adversary. The economic crisis will for sure influence the pricing and output levels of the process, not the negotiation framework.

3.3. The influence of cross-border mergers and acquisitions

The purpose of alliances, mergers and takeovers are similar: to enhance operational and marketing efficiency; to achieve better financial results; to create industrial-economic improvements through scale effects and by lowering barriers to entry (Meersman et.al., 2008, p. 81).

Mergers and takeovers also have a clear impact on the composition of alliances, and thus on their economic performances. Here, there is much to be learnt from past experiences in maritime transport. The reason is that alliances as such are not stable, but subject to continuous movements and the associated entry and exit of partners. The takeover of Alitalia, a.o. by Air France/KLM, did not result in a reshuffle of alliances, as both companies belonged to the SkyTeam group.

It has also become apparent that a consolidation wave is inevitable. In the United States, five of the six international carriers were involved in merger talks in 2007.⁶ Especially a merger/takeover involving both Continental and United Airlines would generate substantial benefits given the limited overlap between their respective networks. However, the two

⁶ Delta Air Lines is, for example, talking to Northwest Airlines, while United Airlines is engaged in separate negotiations with Continental and Northwest Airlines.

carriers belong to different alliances. Moreover, there are industrial-economic barriers to take into account in these kinds of mergers.⁷

In Europe, too, a consolidation movement is gaining momentum, with possible consequences for the existing alliances. Since 1999, the Spanish company Iberia has been operating under an alliance with British Airways, in which the latter carrier, for that matter, has a financial stake in the listed company Iberia. At the beginning of 2007, the Iberia management was not excluding the possibility of an alliance with Air France/KLM or Lufthansa. In September 2009, Iberia asked for an immediate merger with British Airways.⁸ This movement illustrates what typically lies in store: a consolidation movement towards three large European groups, gravitating around the three largest carriers, namely Lufthansa, British Airways and Air France/KLM. This evolution eventually can be accelerated by the current crisis.

3.4. Survival of the Southwest model

Low-cost airlines have always been inspired by the so-called Southwest model. The model indeed has proven to be successful, and hence has been copied in the rest of the world. The model was based on strict adherence to a number of principles: short-haul, point-to-point, dense routes only, maximisation of flying hours, use of secondary airports, high frequency of service, no delays. It strove to combine low costs, low fares and high demand and capacity utilisation (see Macário et.al., 2007).

The European LCA market is also heavily influenced by the economic recession. But at the same time Ryanair announced for the period 1 April – 30 June 2009 a profit increase of 21%, compared to the same period last year. Low-cost companies are increasing their market share vis-à-vis the traditional carriers and charter companies. The important question arises whether the growth rate of the past can be maintained in the future.

In an analysis by Deutsche Bank from May 2007, it was calculated that the LCA market will continue to experience a volume growth of roughly 15%, as a consequence of a combination of shifts from other air transport segments, GDP growth, and a very modestly rising propensity to travel. All major low-cost companies are expected to achieve annual growth rates of less than 15%, while Ryanair is expected to grow by 20% annually (Deutsche Bank, 2007, p. 5). This outlook is enhanced if one considers the investment strategy of carriers such as Air Berlin, Ryanair and easyJet. Table 7 provides an overview of aircraft orders and deliveries.

⁷ In 2001, Northwest Airlines and Continental struck a deal whereby they could sell tickets on each other's flights. Also, Northwest acquired the right, under certain conditions, to block any merger between Continental and another company.

⁸ The merger negotiations between British Airways and Iberia have been going on for a long period. This is the consequence of a dramatic decrease of the share price of British Airways. The latter heavily depends on trans-Atlantic flights and revenues, and as such the company is much more sensitive to the economic recession than Iberia. That weakened the negotiation power of British Airways and that is the reason why they try to slow down merger talks.

Table 7: Estimated number of aircraft and passengers carried by European LCAs until 2012

	2005	2006	2007 F	2008 E	2009 E	2010 E	2011 E	2012 E
Number of aircraft								
easyJet	108	120	143	160	177	194	211	228
Ryanair	87	113	132	152	172	192	212	225
others	152	181	221	260	302	347	395	458
Total	347	414	495	572	651	733	818	910
Passengers (millions)								
easyJet	28	34	38	42	46	51	55	60
Ryanair	31	41	48	55	62	69	76	81
others	45	56	67	79	92	106	122	141
Total	105	130	152	176	201	227	253	282
note: F - forecast; E - estimate								

Source: Lopes (2005), airlines websites, authors calculations

It is clear that the current economic crisis has a negative impact on LCAs. At the same time, it is becoming more likely that certain inputs will become more expensive, resulting in a slowdown in growth. There are signs that the market is reaching a degree of maturity (MINTeL, 2006). Moreover, by launching new links from airports like Brussels and London towards destinations like Gran Canaria and Tenerife, a company like Ryanair risks violating some of the basic characteristics of the former low-cost approach. The end of the Southwest model?

3.5. More bankruptcies

Bankruptcies and takeovers used to be rare in the air transport sector during the era of the so-called flag-carriers. More recently, however, such events have become more common and have had a significant impact on the market function and competition. By way of illustration, table 8 provides an overview of recent bankruptcies, mergers and takeovers in the European airlines sector (data of 2009, till 10 September).

What type of airlines go bankrupt? Strikingly, the companies in question are often medium-sized international airlines. Doganis (2001) asserts that these airlines are “too small to be global players, too big to be a niche player”. Their mission is unclear, they usually find it hard to take optimal strategic decisions and, in most cases, they are undercapitalised.⁹

In the United States, the situation is different. First and foremost, the recent past has seen many companies file for Chapter-11 protection against creditors. At the same time, reorganisation measures have been pushed through and new, cheaper deals have been negotiated with partners.¹⁰ The consequence is twofold: the majors generally get out of Chapter 11 with a lower cost structure (e.g. due to dramatic staff reductions) and hence greater competitive strength, but their regional partners come under greater pressure and

⁹ The air transport industry in its future configuration of interacting submarkets will remain a capital intensive industry.

¹⁰ In this context, David Field writes: “Wielding the power of bankruptcy, US majors have forced their regional partners to fly for less, but given them more leeway to fly for other airlines”. And he adds: “Through their powers in bankruptcy, both Delta and Northwest put almost all regional flying out for competitive re-bidding, and the downward pressure on margins spread through the industry.” (Flight International, 22-28 May 2007, p. 32).

must adapt their strategies. This can influence the competitive position of European carriers, not having a kind of chapter-11 protection scheme, e.g. to lower their costs.

Table 8: Bankruptcies, mergers and takeovers in the European airlines sector

Date	Airline	Country	Ops started	Event
17-Jan-09	FlyLAL	Lithuania	1938	Bankruptcy
19-Jan-09	Apatas Air	Lithuania	1994	Bankruptcy
24-Jan-09	Nordic Airways	Sweden	2006	Bankruptcy
16-Mar-09	EuroAir	Greece	1995	AOC withdrawn
31-Mar-09	Blue Wings	Germany	2003	
27-Apr-09	Air Sylhet	United Kingdom	2007	Bankruptcy
01-May-09	LTU International Airways	Germany	1955	Merged into Air Berlin
01-May-09	ThomsonFly	United Kingdom	2004	Became Thomson Airways
01-May-09	First Choice Airways	United Kingdom	1987	Became Thomson Airways
06-May-09	Open Skies	United Kingdom	2007	Transferred to Elysair
01-Jul-09	Cargo B	Belgium	2007	Bankruptcy
09-Jul-09	Clickair	Spain	2006	Merged into Vueling
24-Jul-09	MyAir	Italy	2004	Bankruptcy
01-Sep-09	SkyEurope	Slovakia	2002	Bankruptcy

Source: http://www.airlineupdate.com/airlines/airline_extra/defunctairlines/defunctairlines_index.htm

It would appear that the trend of recent years will persist in the future, resulting in consolidation into a limited number of large network carriers as well as a limited number of large low-cost carriers. This evolution will undoubtedly impact on the market structure and on market behaviour, and possibly holds the risk of abuse of market power. Carriers that do not belong to strategic alliances will then become likely victims of bankruptcy and prime targets for takeovers and mergers (Meersman et.al., 2008, p.83).

3.6. New market entries and increasing aggressiveness

The air transport sector provides a text book example of the potential response to new market entries in an industrial economy. A new entrant in the marketplace launching a service on a particular route risks that the carriers already operating on that route will respond with sharp price cuts, combined with increased capacity. As soon as the new carrier retreats, capacity is decreased again and prices are increased.

While initially the low-cost airlines tended to exhibit aggressive behaviour vis-à-vis the flag carriers, we now see the opposite happening. The large flag carriers are challenging the low-cost carriers on their short-haul destinations, and feeding these passengers to their more profitable full-service long-haul routes.¹¹ Flag carriers such as British Airlines, Lufthansa and Air France/KLM have all changed the product of 'short-distance flights' quite drastically: more straightforward economy classes, the introduction of on-line reservation, the elimination of travel agents' commissions, no or exclusively paid-for catering.

This increasingly aggressive behaviour will persist in the future. During the current economic crisis less new market initiatives could be observed. However, we expect new initiatives to be launched at the moment economic activity starts to grow again. It should be clearly observed that dominant positions on specific routes and airports should be avoided.¹²

3.7. Changed influence of government

For decades the air transport business was directed and controlled by the public authorities. This government influence is now far less apparent. The traditional flag carriers are disappearing, not in the least because the public authorities are partially or wholly selling their share in the capital of these companies. Deregulation is gaining momentum, and the influence of the national authorities is now restricted mainly to two areas.¹³ First and foremost, the public sector will most likely continue to provide the basic airport infrastructure. Second, they are still generally expected to act against any abuse of monopoly status in relation to pricing, landing slot allocation or access to terminals (Meersman et.al., 2008, p. 85). There will be no effect of the current economic crisis.

At the same time the (supra)national authorities for their part may be expected to assume a more prominent role in the environmental field. The European Commission, for example, is committed to a reduction in CO2 emissions. The airline industry will be included in an EU emissions trading scheme.

The airline industry is already responding to this trend. In 2007, easyJet introduced its own so-called 'eco-friendly aircraft design', which uses existing technologies that could halve carbon dioxide emissions and produce 75% less NOx by 2015.¹⁴ IATA, meanwhile, has launched a zero emission goal for the airline industry. The environmental issue, then, is likely to become one of the most significant points of debate within the airline sector.

¹¹ Flag carriers such as British Airways, Lufthansa and Air France/KLM generate around two-thirds of their revenues through long-distance flights, where they face no competition from low-cost/low-fare airlines. A carrier such as Alitalia achieves just a third of its revenues from long-distance flights, and is therefore much more sensitive to aggressive behaviour on the part of low-cost carriers.

¹² In 2007, there was the hostile bid from Ryanair, Europe's largest budget carrier, for that other Irish airline, Aer Lingus. It was a bid, for that matter, which had very little chance of succeeding, if only because of the fact that the European Commission would not accept the dominant position that Ryanair would thus acquire at Dublin airport.

¹³ In addition, the public authorities will continue to be involved in the funding of aircraft construction, especially in the fields of research, design and the launch of new aircraft types.

¹⁴ Flight International, 19-25 June 2007, p. 14.

3.8. Extreme volatility of the airfreight market

Till 2008, airfreight was a growth market. Traditionally regarded as a by-product of passenger transport, there are now a number of companies focusing exclusively on this segment (Herman and Van de Voorde, 2006).¹⁵ Airfreight indeed became a heterogeneous product, from belly space operations till express operations and integrators.

The relatively growing importance of full-freighter transport is occasioned by a combination of factors. For one thing, the available freight capacity in passenger aircraft is insufficient to satisfy growing demand. Second, on certain airfreight routes, there is a strong imbalance between incoming and outgoing freight, so that a different network structure imposes itself. In addition, there is an ongoing consolidation trend whereby freight is combined at hubs, and these larger volumes are resulting in more competitive full-freighter operations.

Airfreight was expected to continue to expand more rapidly than passenger transport. However, in 2009 some airports reported extreme decreases in throughput, some of them up till -50%. This is the result of a combination of several effects: carriers moving to another airports (e.g. Ethiopian from Brussels to Liège), lower frequency, merged routes, bankruptcies. However, as long as airfreight can contribute to profit maximisation and market share, carriers will want to operate in this market, be it as a by-product of air passenger flows or in a full-freighter configuration.

3.9. Increased foreign capital

Globalisation not only refers to international movement of passengers and goods. It also refers to the move of labour, information and capital flows. This is also the case in a globalised business such as air transport. The dilution of the flag carrier concept, which is characterised by a declining involvement of public funds and the entry of more private capital, has resulted in an important evolution in terms of industrial and capital structure. In the case of some airlines, and indeed airports, we have witnessed a three-step movement. First, there was the disintegration phase, with companies refocusing on the core business. In the second step, such non-core activities as catering, handling and maintenance were sold off. Finally, in the third phase, this evolution is commonly combined with the entry of external capital.

Increasingly, it appeared to be private equity that entered the sector. Table 9 provides an overview of a number of significant capital movements involving private equity in the Belgian airline market.

Table 9: Private equity in the Belgian airline industry

Date	Target	Purchaser	Million €
November 2004	BIAC (70%)	Macquarie Bank	735
July 2005	Aviapartner	3i	165

The question that arises is whether the entry of private equity capital in the airline industry is not at odds with companies' long term interests. Private equity groups tend to sell

¹⁵ The genuine full-freighter companies often operate in the 'ad hoc', irregular airfreight market. Moreover, it often concerns small, unquoted companies so that there are virtually no official data on their operational and financial performance (Herman and Van de Voorde, 2006)

relatively quickly, i.e. within a period of three to five years. It remains to be seen, though, to what extent the strong cyclical movements in the airline industry may pose a problem in this respect. And to what extent may possible 'exits' from the capital of airlines and airports by private equity groups result in new consolidation movements? In the airport sector, we are already seeing a strong concentration into a number of large groups: BAA (United Kingdom), Aena (Spain), Fraport (Germany), Aéroport de Paris (France), Macquarie Airports (Australia), Schiphol (Netherlands), Ferrovial (Spain). We have a similar trend in the third party handling sector, with companies just like Ferrovial, Aviapartner (or 3i as the holding company), Menzies and Globeground.

However, due to the current economic crisis the behavior of some venture capitalists seems to become quite nervous. They would like to sell (part of) their participation because of their need for cash. However, at this moment the number of potential buyers is limited and prices are low.

3.10. Less employment

The demand for air transport is a derived demand. The same reasoning applies to the demand for employment. Employment will be function of air transport economic activity, i.e. the supply of air transport. Since as a consequence of the current economic crisis both demand and supply for air transport decreased, so does employment. Table 10 gives an overview of recent job cut announcements in the European air transport sector.

Table 10: A selection of job cut announcements

Carrier	Date of announcement	Job cuts	Comments
SAS	4 February 2009	8,600 out of 23,000	
	12 August 2009	Additional 1000 to 1,500 job cuts	
Virgin Atlantic	12 February 2009	600 out of 9,000	
Ryanair	12 February 2009	200	At airport of Dublin
Air France/KLM	15 April 2009	3,000 out of 100,000	During next two years
Lufthansa	16 July 2009	400 administrative staff	30 June 2009: 2574 less employees than the year before
United Airlines	23 July 2009	9,000 job cuts	Before the end of 2009
Aeroflot	17 September 2009	2000 jobs	Next 6 months; possibility to increase to 6,000 job cuts
LOT	6 October 2009	400 out of 3,500	Till May 2010
British Airways	6 October 2009	1,700 out of 14,000 cabin crew UK	
Aer Lingus	7 October 2009	676 out of 3,900 (during next two years)	489 pilots, cabin crew and ground staff, and 187 of the back-office staff

Source: websites airlines and press announcements

4. Recommendations for EU policy makers

The purpose of this paper was to provide an understanding of likely developments in the sector after 2010. Being a capital-intensive business that is undergoing very rapid technological and organisational change, the air transport industry is in constant need of insight into future market evolutions.

There is no such thing as a single homogenous air transport market. It is rather a configuration of various submarkets that are interconnected and therefore interact. The general feeling is that the air transport market will recover after the economic crisis and that growth will persist beyond 2010. However, aggregated data often mask underlying, sometimes opposite evolutions. For this reason, we have chosen to base our approach on a number of specific issues.

In table 11 we summarize a number of these issues, and we link them to potential strategic and industrial-economic effects that can be important for the European Parliament.

Table 11. Important issues to be checked

Issue	Potential consequences	Effect of crisis
Alliances, consolidation and niche players	<ul style="list-style-type: none"> A further concentration movement, with a risk of resulting in market dominance and abuse of market power Difficult to start up niche markets and keep operations ongoing 	Accelerated (cf. need for re-capitalization) Intensified
Privatisation	<ul style="list-style-type: none"> A risk of dominant positions, also in the airport and third party handling market 	Intensified
The influence of cross-border mergers and acquisitions	<ul style="list-style-type: none"> Consolidation movement 	Accelerated
The low-cost market	<ul style="list-style-type: none"> Concentration towards a limited number of LCA's Borders with legacy and charter carriers disappear 	Trend continuous accelerated
Bankruptcies	<ul style="list-style-type: none"> Bankruptcy trend will persist Consolidation and risk of abuse of market power 	Continuing trend Intensified
New market entries and increasing aggressiveness	<ul style="list-style-type: none"> Risk of predatory pricing, i.e. entry-detering strategies that work by reducing the profitability of rivals 	Intensified
Changed influence of governments	<ul style="list-style-type: none"> Emission trading schemes 	No effect
Extreme volatility of the airfreight market	<ul style="list-style-type: none"> The risk of a complete restructuring of the airfreight market 	Intensified
Increasing foreign capital	<ul style="list-style-type: none"> The risk of a strong concentration in a number of large, powerful groups (e.g. in the third party handling market) 	Intensified

In table 10 the combination of a number of issues linked to the current economic crisis, and their potential consequences, leads us to one major consideration. We expect from this recession period a much more concentrated air transport sector. We not only expect more concentration in the passenger market, but in all market activities, from freight to handling and airport management. The consequences of more concentration are clear to everybody. There will be more risk, call it a higher probability, of abuse of market power.

Current legislation gives sufficient degrees of freedom for the economic actors to find creative solutions for their survival and to maintain their coalition strategies. However, the regulatory approach in most countries follows a too compelling style of approach, while hectic patterns of behaviour do require a more strategic (and thus prospective) approach to the regulatory function. It is precisely for this reason that monitoring is now so critical. In fact we are entering a period where regulatory function needs to be rethought in its role, processes and ambitions.

One indeed should avoid that the current economic crisis might be used or abused as an opportunity aiming at weakening existing legislation or standards, e.g. by weakening environmental standards for the airlines, or defending market positions and subsidies for incumbents, or accepting any abuse of market power.

The final recommendation to the European Parliament is clear and easy to formulate. One cannot avoid that the various air transport sub-markets consolidate themselves in a limited number of actors. However, one can avoid that those actors abuse their market power. Therefore we advise the European authorities to monitor and benchmark the air transport sub-markets, based on data and research on the industrial-economic behaviour of all actors.

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