

Airlines' Privatisation in Europe: Fully *versus* Partial Divestiture

Alfredo Macchiati - Giovanni Siciliano*

University of Rome "Tor Vergata"
and
Ferrovie dello Stato

CONSOB, Rome

We study the experience of the three fully privatised European airlines: British Airways, Lufthansa and Iberia. All airlines have undergone a deep restructuring much before (and in view of) the privatisation, with the state bearing most of the related financial cost (especially in the cases of Lufthansa and British Airways), and have taken over (before, after or in the same year of the privatisation) their main domestic competitors. Following full privatisation, labour productivity (particularly for Iberia and Lufthansa) and profitability increase compared to other major European state-controlled airlines; production capacity grows compared to the pre-privatisation period, as well as average salaries (though reflecting the increased labour productivity). Preliminary evidences from stock returns show that investors do not seem require a premium for political risk to invest in shares of fully privatised airlines. In general, these results imply that government ownership in the airline industry can be detrimental, at least to firms' efficiency, while full privatisation does not seem to expose private shareholders to significant political risk. [JEL Classification: L33, G38]

1. - Introduction

The *rationale* for airlines privatisation is the usual one: dissatisfaction with state owned enterprises' performance. This dissatisfaction has its theoretical roots in various important contributions (see, among many, Sappington and Stiglitz, 1987;

* <a.macchiati@ferroviedellostato.it>; <g.siciliano@consob.it>. The Authors thank Giuseppe D'Addio for generous research assistance.

Laffont and Tirole, 1991; Shleifer, 1998) and finds empirical support in a large body of research on how privatisation impacts the financial and operating performance of divested firms (recently surveyed in Meggison, 2005). Research on welfare effects (Florio, 2004; Hancock and Waddams Price, 1998; Eckel, Eckel and Singal, 1997) seem less supportive for privatisation, in particular for consumers: at least in the British experience, other drivers of prices (such as regulation, market structure, exogenous changes in cost) have largely overshadowed improved company performance due to ownership change.

According to Shleifer (1998), the only industrial setting which may be considered favourable for public ownership — innovation relatively unimportant, weak competition, consumer choice ineffective — is completely unrealistic in case of airlines. The pressure of entrants with new business model (“low cost” airlines) has been disruptive and volatility in demand and earnings has been remarkable. In this environment, incumbent airlines must define new strategies and reform themselves, tasks which are traditionally not the easiest ones for state-owned enterprises.

Privatisation in the airlines sector has been less intensive than in other industries; governments have historically claimed absolute sovereignty over their airspaces for military considerations. This attitude created strong links with airlines carriers, which in Europe (but not in US) took the form of public ownership. After the restructuring which followed the early years of the airlines industry, a single subsidised state-owned company emerged in virtually every European country (Millward, 2005). Although thereafter some companies were privatised, government ownership is widespread, mainly because national airlines retain a content of prestige (“to show the national flag in world airports”) and a regularly scheduled carrier is still considered, by many countries, a tool of commercial policy.

The aim of this paper is to provide new evidence of the impact of ownership on firm performance in the airlines sector, comparing the outcomes of the two main policy options followed by most of the European countries: partial versus full privatisation.

First, we show that fully privatised airlines (British Airways,

Lufthansa and Iberia) have undergone a deep restructuring much before (and in view of) the privatisation, with the state bearing most of the related financial cost, and have taken over (before, after or in the same year of the privatisation) their main domestic competitors. Then, we compare the performance of the fully privatised airlines against other partially privatised European carriers (mainly SAS and Air France-KLM), using accounting and stock market data. We show that following full privatisation labour productivity (particularly for Iberia and Lufthansa) and profitability increase compared to other major European state-controlled airlines; production capacity grows compared to the pre-privatisation period, as well as average salaries (though reflecting the increased labour productivity). Preliminary evidences from stock returns show that investors do not seem require a premium for political risk to invest in shares of fully privatised airlines. In general, these results imply that government ownership in the airline industry can be detrimental, at least to firms' efficiency, while full privatisation does not seem to expose private shareholders to significant political risk.

2. - State Ownership and Intervention in the Airline Industry: Stylised Facts and Previous Research

2.1 State ownership in the European airline industry has been quite resilient: with the exception of British Airways which was fully privatised in 1987, we have to wait until the late nineties and the beginning of the new century to see other European carriers being fully privatised (Lufthansa in 1997 and Iberia in 2001). Many airlines have been partially privatised, although the government has always remained the major shareholder (Table 1),¹ while others, such as Olympic, TAP and Air Lingus, are still 100% state owned. The case of the Irish carrier Air Lingus is interesting because it shows how restructuring is possible even

¹ We have included Alitalia among partially privatised companies although the Italian state is currently trying to sell its residual stake.

TABLE 1

PARTIAL PRIVATISATION IN EUROPEAN AIRLINES
Evolution of State Property Rights

	Year of Initial Divestiture*	Residual State ownership in 2006**
Air France	1999 (37.0)	18.6***
Alitalia	1985 (1.3)	49.9
Austrian Airlines	1988 (25.0)	39.7
Finnair	1946 (15.0)	60.7
KLM	1986 (16.7)	5.9****
LOT	1999 (10.0)	68.0
SAS	1973 (50.0)	50.0

* In parenthesis is reported the government stake initially sold (in percentage).

** Percentage of total voting rights.

*** The French state has a 18.6% stake in Air France - KLM which in turn controls 100% of Air France.

**** Direct stake of the Dutch state. The French state has also an indirect stake in KLM, having a 18.6% stake in Air France - KLM which in turn owns 49% of voting rights and 97.5% of cash flow rights of KLM. The Dutch state has an option to increase its direct stake in KLM to 50.1% under certain circumstances.

without privatisation. In fact, the management was able to transform Air Lingus into a true “low cost” and profitable airline without any interference by the government (Booz Allen Hamilton, 2007).

For five out the seven airlines reported in Table 1 the government stake is quite high (even disregarding indirect ownership rights) so that we can safely assume that the state has

not yet relinquished company control. For Air France and KLM, which merged in 2004, the situation is less clear.

Before the merge the French state had a 54% participation in Air France while the Dutch state controlled 14.7% of KLM voting rights through cumulative preference shares. The deal was structured to create an holding company (Air France - KLM) controlling 100% of Air France but only 49% of KLM and both companies continued to operate independently.² The stake of the French state in the holding company reduced to 44% after the deal and then further diluted to 25 and 18.6% (end of 2006), while employees currently control 13.8% of the voting rights; the Dutch state agreed to reduce its stake in the holding company over time in a similar proportion to the French state.³ The deal was based on a three year transitional period in which the remaining 51% of KLM voting rights would have been held by the Dutch state and two Dutch foundations⁴, in order to protect KLM traffic rights.⁵

2.2 Regulation has, to a great extent, shaped the structure of the industry, slowing mergers and cross-shareholdings (even between national carriers), even though until 1992 there was no

² Actually, Air France-KLM owns depository receipts representing KLM common shares tendered in the exchange offer in excess of 49% of the nominal share capital and voting rights of KLM. These depository receipts carry the economic rights, but not the voting rights, of the underlying KLM common shares. The underlying KLM common shares are held by Stichting Administratiekantoor KLM (SAK I), a foundation incorporated under Dutch law. Air France-KLM also owns depository receipts representing KLM's cumulative preference shares C. These depository receipts carry the economic rights, but not the voting rights, of the underlying cumulative preference shares C. The underlying cumulative preference shares C are held by Stichting Administratiekantoor Cumulatief Preferente Aandelen C KLM (SAK II), another foundation incorporated under Dutch law. Each of SAK I and SAK II are managed by a board of three independent persons: one appointed by Air France, one by KLM and a chairman appointed jointly by the appointees of Air France and KLM. The majority of the board members of each foundation, including the chairman, are Dutch nationals and residents. The decisions of each foundation's board must be by unanimous consent. Through these complex arrangements, Air France - KLM controls 49% of KLM voting rights but owns 97.5% of KLM cash flow rights.

³ We do not have precise data on the post-deal stake in Air France - KLM of the Dutch state; however, latest SEC filing by Air France - KLM do not indicate the Dutch state amongst shareholders having more than 5% of the voting rights.

⁴ See footnote 2.

⁵ The Dutch state has a direct stake of 5.9% in KLM and has an option to increase its share of voting rights up to 50.1% under certain circumstance.

European legislation allowing national states to forbid mergers between national airlines.

Both European regulation and commercial agreements between the US and each single European country include “nationality clauses” conditioning traffic rights to shareholders nationality. Such clauses, by linking commercial growth and ownership structure, hinder consolidation and privatisation. But even when for European member states it became impossible not to grant an operating licence to an airline on the basis that it was not controlled by local nationals,⁶ the nexus between ownership regulation and traffic rights on the transatlantic market (which covers issues such as the number of airlines allowed to fly, the points that can be served and the number of flights per week that may be operated) has helped politicians to keep states as important shareholders.

On the transatlantic market traffic rights are linked, through the so-called “open skies” agreements. “Open skies” are bilateral agreements between the US and EU states which condition traffic

TABLE 2

STATE OWNERSHIP BY INDUSTRY SECTORS
IN THE EU 25 COUNTRIES (2005)

Sector	%
Finance & Real Estate	16.5
Manufacturing	11.7
Petroleum	15.4
Services	8.7
Telecommunications	13.8
Trade	4.8
Airlines	25.6
Utilities	25.1

Source: Data kindly provided by Privatisation Barometer.

⁶ According to Council Regulation (EEC) 2407/92 an airline from an EC member state will not be entitled to be granted or continue to hold an operating licence unless it satisfies the requirement that it: «shall be owned and continue to be owned directly or through majority ownership by member states an/or nationals of member states. It shall at all times be effectively controlled by such states or such nationals».

rights to shareholders nationality. These agreements, which produced advantages in terms of market share for the US carriers, in spite of their name, have slowed market liberalisation and curtailed greater cross investments between airlines; they were considered an infringement of the Treaty by the Court of Justice (although only in 2002).

For all these reasons it is no surprise if airlines is the industry with the highest share of government ownership among EU25 countries (Table 2).

2.3 During the nineties most of the European state-owned airlines were in need of massive injections of new capital. State aids, approved by the European Commission, were generous (Table 3), testifying another important form of public intervention

TABLE 3

STATE AID TO THE MAJOR
EUROPEAN AIRLINES (1990-2006)

	\$ Mln (Year)	\$ Mln (Year)	\$ Mln (Year)	\$ Mln (Year)	\$ Mln (Year)
Air France	338* (1991)	650* (1992)	3.300 (1994)		
British Airways	690 (1993)				
Alitalia	1,708 (1997)		926* (2002)	544 (2004)	904* (2005)
Iberia	830 (1992)		593* (1995)		
Lufthansa	710 (1994)		1,000** (1995)		
KLM	620 (1994)				
Olympic	2,245 (1994)		637 (2005)		

* Not classified as state aid.

** Contribution of € 800 million by Germany to Lufthansa's pension fund in the context of its partial privatisation — Not classified as state aid.

Source: our calculation from DOGANIS R. (2005), ECDG Competition Website, BALFOUR J. (2003).

in the industry. Governments took the view that financial aids would have helped restructuring and recovery plans, paving the way for subsequent privatisation; but this was not always the case (as for Olympic in 1994 and Alitalia in 1997). The three fully privatised companies analysed in this paper benefited from large state aids as well (in the case of British Airways even after the privatisation).

The European Commission showed an indulgent approach toward such form of state intervention, allowing some €13 billion of public funding to the major European airlines, and argued that state aids were necessary to enable airlines to prepare themselves in view of the liberalisation of the sector. Since 1997, however, the Commission took a more severe approach and state aids fell substantially, even compared to other transportation sectors.

2.4 Amongst the huge empirical literature on the impact of privatisation on financial and operating performance, there are several studies that look specifically at the airline industry. Green and Vogelsang (1994) show how British Airways (BA) was restructured in order to set the way for successful privatisation, while Yarrow (1995) provides an overview of the impact of privatisation and deregulation on the UK airline industry. Eckel, Eckel and Singal (1997) study the impact of BA and Air Canada privatisations on prices, finding that airfares in the markets served by the two carriers fell significantly when they got fully privatised. Erlich *et al.* (1994) focus on the impact of ownership on the rates of firm-specific productivity growth and show that a full switch to private ownership may increase the rate of cost decline by as much as 1.7 per cent a year. In the same stream of research, Ng and Seabright (2001) look at the impact of ownership and market structure on rents to labour in the airlines sector: their results show that while the effect of competition is harder to disentangle, state ownership has a large upward impact on costs. Backx *et al.* (2004) provide evidence that, controlling for firm size, domestic competition, home region and home GNP levels, state controlled airlines have lower performance levels and are less efficiency oriented than private airlines.

Another stream of research concentrates on the impact of the

ownership structure on market risk assessment. De Bruijn *et al.* (2007) compare a portfolio of shares of (majority) state-owned airlines against a portfolio of shares of privately owned airlines around the 9/11 shock and find a lower *beta* for state owned portfolio. Such evidence can be rationalized assuming that residual state ownership in a partially privatized firm may serve as a commitment to mitigate political risk (*i.e.* backlash against previous policy choices generated by political shifts) (Perotti, 1995); in fact, the state, by sequential sales, can commit itself not to interfere in the business and not to redistribute its value through more credible regulation (Lo Passo and Macchiati, 1997). The results by De Bruijn *et al.* (2007) can also be interpreted assuming that governments have a different pay-off function than private investors and opt for lower risk project.

Bortolotti and Faccio (2004) show that, irrespective of the industry sector, partly privatised companies are more valuable than fully privatised ones; an interpretation of this evidence consistent with Perotti's model is that partial privatisation allows governments to bear the residual risk of political interference, while such risk is more heavily discounted in the market value of fully privatised firms. Beltratti *et al.* (2007) focus on a financial measure of political risk in mature financial markets and find that a portfolio of companies in the bottom quartile in terms of government control rights (thus including fully privatised companies) significantly outperform a portfolios formed by stocks with higher government residual stake.

According to a different and more traditional perspective, when partial privatisation does not represent an intermediate step and it does not prelude to a complete exit (so that the state is not willing to give up redistributive goals), a very inefficient incentive structure can prevail. With a hybrid ownership arrangement, the company will pursue profit maximisation or redistribution depending on a series of variables (relative weight and concentration of private ownership, political cycle); in the meantime the management can behave very opportunistically as the firm is isolated from the market of corporate control. Hence, partially privatised firms can be less efficient than fully state owned firms. In fact, Erlich *et al.* (1994)

find that the adverse effect of state ownership on growth peaks around the 60% stake, suggesting that a specific level of mixed ownership can be less efficient than full state ownership.

3. - Restructuring in Fully Privatised Airlines

We start our analysis providing some clinical evidences on the restructuring of fully privatised European airlines (British Airlines, Lufthansa and Iberia), showing how releasing firm from government control creates more entrepreneurial opportunities. We also provide some information on the method and the timing of the exit by the State (Table 4 reports some summary information on the timing of the privatisation for the three airlines considered). In the next section we will provide instead some quantitative evidence on the changes in financial and operating performance after privatisation, taking partially privatised airlines as benchmarks.

TABLE 4

EUROPEAN CARRIERS FULLY PRIVATISED

	Year	% for Sale (or % dilution in State voting rights)	% Residual State Stake
British Airways	1987	100 (IPO)	0
Iberia Lineas Areas de Espana	2000	41.2 (private sale to BA, AA and 5 Spanish institutional investors)	53.5
	2001	53.5 (IPO)	0
Deutsche Lufthansa	1989	28.5 (dilution due to new equity issues not subscribed by the State)	51.4
	1994	15.7 (dilution due to new equity issues not subscribed by the State)	35.7
	1997	37.5 (Public Offering)	0

Source: Goldman Sachs.

In organising the qualitative evidence on restructuring we adopt the taxonomy proposed by D'Souza *et al.* (2006), who classify restructuring events in three broad families: 1) organisational/operational (reorganisation of firm's production methods, *i.e.* closing, consolidating, or overall reorganising of production facilities); 2) financial (reduction in the leverage, restructuring of loans, etc.); 3) acquisition and divestment. Data are collected from annual reports, firms' websites and press news for the years around the privatisation; in the case of Iberia and Lufthansa, privatised through sequential offerings, we consider the year of full privatisation as the reference one.⁷

British Airways

British Airways (BA) was a fully state-owned company until 1986. In 1987 the state sold its entire stake through an IPO and the company was listed on the stock exchange. Around 1980, just after the privatisation announcement, BA was viewed as a largely overstaffed and inefficient airline, which occasionally generated substantial losses.⁸ In 1981 a new chairman was appointed and he embarked in an ambitious employment reduction plan based on generous severance pay incentives (employees fell in fact from 52,310 in March 1981 to 36,794 in March 1984; - 42.2%). The staff reduction plan forced BA to post large extraordinary provision for redundancy. BA decided however to concentrate most of these provisions (plus supplementary aircraft depreciation) on the 1981/82 balance sheet, so that the accounts for the following years would have been unaffected by impact of the restructuring costs. Other restructuring initiatives involved the cut of some unprofitable routes, the closing of the cargo-only services and the sell off of some minor subsidiaries.

⁷ We get a restructuring activity (measured by the number of restructurings) per firm higher than in D'SOUZA J. *et AL.* (2006); the difference can be due to a different discretionary appreciation of what a restructuring is or to the more turbulent environment of the airline sector.

⁸ Most of the information and data quoted in text come from GREEN R. - VOGELSANG I. (1994) and GALAL A. - JONES L. - TANDON P. - VOGELSANG I. (1994).

Although by early 1980s BA was technically bankrupt (liabilities exceeded assets by roughly 250 million pounds), it was able to survive and to borrow abroad thanks to the implicit guarantee by the UK State. Anyway, BA turnaround proved effective and the 1982/83 and 1983/84 financial accounts showed large positive operating results; by 1985, BA net equity returned positive.

In 1985 BA had to give up to its main domestic competitor, British Caledonian (BC), some of its routes (basically those to Saudi Arabia), as BC was arguing that the privatisation would have created a dominant position. BA, however, received from BC its South America business and eventually retained its dominant role in the UK market.

By 1985, BA had turned into a relatively efficient and profitable company and the government accelerated the procedure to sell its stake. However, it was only in January 1987 that the government sold its entire 100% stake in BA, valued 900 million pounds, through an IPO.

In 1987, just after the privatisation, BA acquired BC for roughly 250 million pound, but the Monopolies and Merger Commission, which approved the transaction in November 1987, forced BA to surrender some European routes of BC previously served by both airlines (plus 5,000 landing slots at Gatwick Airport, where most of BC operation were based).

Thanks to BC acquisition, BA expanded significantly its production capacity: RPK⁹ grew by roughly 20% between 1986 and 1988 and the number of employee came back to the levels prevailing at the beginning of the 1980s. Restructuring operations in the three years following privatisation involved essentially services enhancement; in 1990 BA opened new brands (World Traveller in international routes and Euro Traveller in internal ones) and services (self ticketing and new routes to Japan). In 1989 BA tried to acquire a stake in Sabena World Airlines, but it was only in 1992-1993 that BA carried out important acquisitions (49.9% of TAT European Airlines, 49% of Deutsche BA and 25% of Quantas).

⁹ RPK stands for Revenue Paying Passengers per Kilometre Flown.

Iberia

Iberia was a state-owned airline until 1999 (although employees had a 5% stake); in 2000 the state sold a 41% stake to private investors (5 Spanish institutional investors, British Airways and American Airlines) through a private deal. Subsequently, in 2001 Iberia was listed through an IPO in which the state sold its residual stake of roughly 54%.

Iberia restructuring started around 1997 and then consolidated in the following years. The main initiative was the so called "Employment Conditions Unifying Pact", which unified contract terms for pilots, cabin crew and ground personnel of Iberia and the newly acquired company Aviaco. In 2000 a 4 years-lasting labour agreement was signed, linking salary growth to the actual Consumer Price Index dynamics. After September 11, (following an agreement with the government) a "Redundancy Procedure" was signed, allowing a dismissal of 2,500 employee. In 2000 Iberia sold its stake in Areolinas Argentinas and a 6.7% stake in the software company Amadeus (posting a gross capital gain of 390 million euro).

Cost optimisation was the other pillar of the restructuring initiatives: in 2000 Iberia's unit cost were below the industry average (notwithstanding average stage length lower than Air France and British Airways). On the commercial side, Iberia reinforced its leadership on the routes between Spain and Latin America and the market share differential against other competitors (mainly Air France) increased substantially (from roughly 1% in 1997 to 4.7% in 2000). In the next years Iberia started a plan to cut costs and boost productivity ("Master Plan 2002-2005"), reducing by 4% commissions to tour operators, and to reduce employment ("Labour Force Reduction Plan"); in the meantime, Iberia divested from many non core sectors and opened new long haul connections. Cost cut were realised also through fleet renewal and partial reduction in aircraft models (in 2000 Iberia had 5 different Airbus models and 5 different Boeing models, while in 2005 had 6 Airbus models but only 2 Boeing models; Table 5).

TABLE 5

NETWORKS AND FLEET OF IBERIA AND LUFTHANSA

Iberia privatised in 2001	year of priv.	year of priv. + 3
	Scheduled destinations	
domestic	35	35
European	32	32
extra-European	30	29
	143	159
	fleet	
— <i>Airbus</i>	80 (of which 52 A320)	101 (of which 58 A320)
— <i>Boeing</i>	26	18
— <i>Other</i>	37	40
ordered	2	5
Lufthansa privatised in 1997	year of priv.	year of priv. + 3
	Scheduled destinations	
domestic	22	23
European	119	125
extra-European	160	199
	280	327
	fleet	
— <i>Airbus</i>	105	127
— <i>Boeing</i>	116	118
— <i>Other</i>	59	82
ordered	31	48

Source: AEA Yearbooks.

Lufthansa

Until 1993 the German state controlled roughly 51% of the voting rights of Lufthansa. In 1994 Lufthansa raised new equity capital through a rights issue and the state sold its stock rights through a public offering so that its stake reduced to roughly 35%. By 1996 the Federal Republic had only indirect stakes in Lufthansa through other state-controlled entities (KfW, Deutsche Bahn and Deutsche Postbank) and controlled roughly 39% of the voting rights (Bortolotti and Faccio, 2006). In 1997 the state sold

a 37.5% stake in Lufthansa (raising an 2.7 billion US dollar) and the company was virtually fully privatised.

Lufthansa, which was almost bankrupt in 1991, carried out most of the restructuring initiatives between the first stock rights offering of 1994 and the final share offering of 1997. In the period 1993-1994 the government started the negotiations to privatise Lufthansa, but one of the key issue was how to deal with the large pension deficit accumulated by the company. Eventually, the government agreed to inject 1 billion DM to cover current pension deficit and to offer an allowance for constituting a separate Lufthansa pension fund. In 1994 the company was reorganised according to a divisional model and then some divisions were transformed into separate subsidiaries. In the same year the company repositioned itself in international markets and Lufthansa Cargo set up a subsidiary in India; the company acquired stakes in US and Asian catering services companies, becoming the biggest airline caterer in the world.

In 1996 Lufthansa launched a cost reduction plan called "Programme 15" (where 15 stands for the objective of reducing costs to 15 pfennig per seat-kilometres by 2001, compared to 17.7 pfennig in 1996). In 1997 it launched the Star Alliance network with other important carriers (such as Air Canada, SAS, Thai Airways), now considered the "frontrunner" in the airline industry's effort to build a comprehensive global network. As far as the fleet is concerned, Lufthansa increased by approximately 25% the number of aircrafts between 1996 and 2000, but it made no rationalisation in the models and, differently from Iberia, expanded mainly on the routes outside Europe.

In the years following privatisation Lufthansa made some important acquisitions. In 2000 it acquired a 20% stake in British Midland, primarily to secure valuable slots at Heathrow airport, and in 2001 it acquired a 24.9% stake in the German airline Eurowings (a national carrier with approximately 4% of market share); in the following years Lufthansa exercised a call option to acquire a further 24.1% of Eurowings and then, in the 2005, the remaining 51%. Both acquisitions were cleared by the German Competition Authorities (the Bundeskartellamt) in 2001 and by

the European Commission in 2005, subject to certain conditions which hinged in particular on the number of slots.

4. - The Financial and Operating Performance of Fully Privatised Airlines

4.1 In order to assess the impact of privatisation on the three fully privatised airlines considered in this study we compare their performance against a sample of state controlled airlines in the 3 years before and after the privatisation. Data are obtained from balance sheets (Worldscope data base) and from the Association of European Airlines (AEA), while stock market data are from Thomson Financial Datastream.

We match each fully privatised airline against comparable partially privatised carrier(s) looking at how the extra-performance against such benchmark changes after full privatisation.¹⁰ In order to better isolate the impact of full privatisation, we choose control firms that are in a similar situation during the pre-event window. In particular, we take state-controlled European airlines of similar size to those under study.

In the case of British Airways, fully privatised in 1987, we take as control firm Lufthansa, mainly because we do not have data for other state controlled airlines of similar size at that time.¹¹ For Iberia (fully privatised in 2001) and Lufthansa (fully privatised in 1997) comparable state-controlled (partially privatised) airlines are SAS, Air France (AF), KLM and Alitalia.

We decide however to drop from our control sample KLM because, starting from 1998, it was in a border line situation: it can not be considered a fully privatised company, but neither a fully fledged state controlled company. In fact, since 1998 (and

¹⁰ Since we have very few observations concentrated in one industry sector we do not use the standard methodologies of analysing median changes before and after privatisation proposed by MEGGINSON W.L. - NASH R. - RANDENBORGH M. (1994), which is suited for large database.

¹¹ We have data for Air France, but at the time of British Airway privatisation Air France was much smaller. In fact, in 1987 Air France was just one of the four French State controlled airlines, which then merged in 1992.

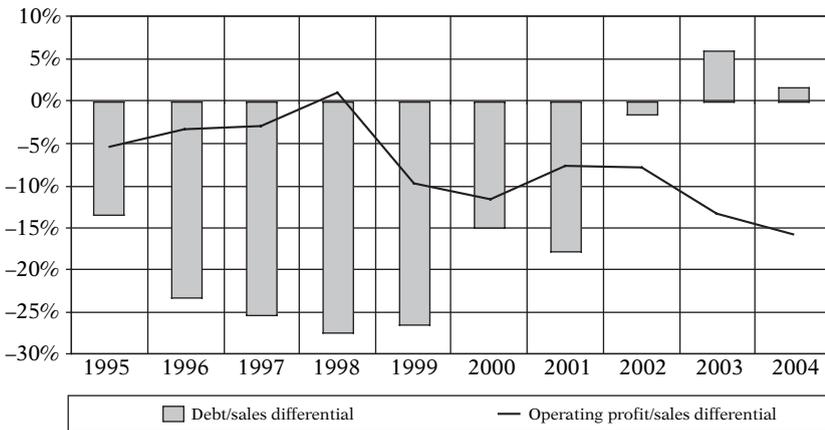
until the merger with AF in 2004) the Dutch state, after selling all its common shares, retained a relatively small fraction of voting rights (14%) through cumulative preference shares.

We also dropped Alitalia from the control sample because it tends to behave much differently from SAS and AF over the time period considered. First, although Alitalia was less indebted than the SAS and Air France until 2001, it was much less profitable (Graph 1).

Second, Alitalia expanded its production capacity at a much slower rate than SAS and Air France (Graph 2). Although until 1997-1998 Alitalia grew approximately at the same rate of SAS and AF, over the entire 10 year period 1995-2004, SAS and AF expanded their combined revenues and employment by 80% more than Alitalia, while their combined ASK¹² grew by 50% more than

GRAPH 1

ALITALIA VS SAS AND AIR FRANCE:
INDEBTEDNESS AND PROFITABILITY DIFFERENTIALS



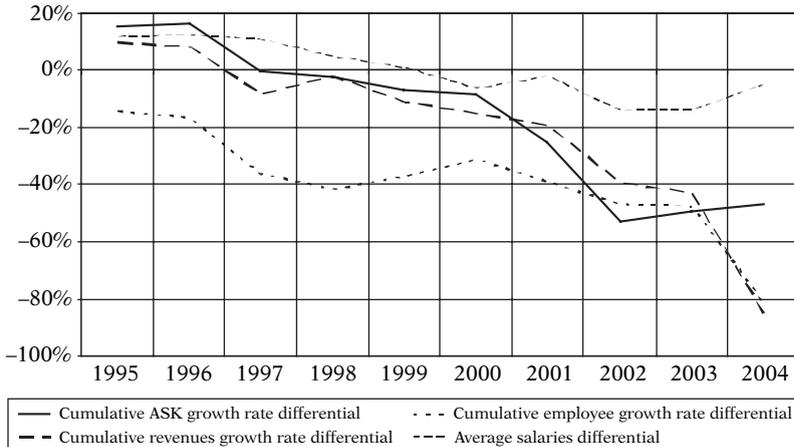
Note: data show the difference between the ratios for Alitalia and the weighted average of the ratios for Air France and SAS.

Source: calculation on Worldscope and company accounts data.

¹² ASK stands for Available Seats per Kilometre Flown and it is a standard indicator of production capacity in the airlines sector.

GRAPH 2

ALITALIA VS SAS AND AIR FRANCE:
CUMULATIVE GROWTH RATE DIFFERENTIALS



Note: data show the cumulative difference between the yearly growth rate of ASK, employee and revenues of Alitalia and the (weighted) average growth rate of the same indicators for Air France and SAS.

Source: calculation on Worldscope, company accounts and AEA data.

the Alitalia ASK. Moreover, in the second part of the period considered, SAS and AF expanded abroad through significant acquisitions (SAS acquired Spanair and Braathens, while AF merged with KLM in 2004; SAS also has a significant investment in the hotel business through the Raddison SAS hotel chain), while Alitalia never embarked in any significant foreign acquisition.

Hence, even though all the three companies were controlled by the state, Alitalia can be considered an outlier compared to SAS and AF in terms of growth and profitability.

Thus, we evaluate the impact of the full privatisation on Iberia (IB) and Lufthansa (LU) against a control sample of two State controlled airlines (SAS and AF), while we benchmark British Airways (BA) against the same LU (which at time of BA privatisation was a fully state-owned company of similar size). We track the difference in some basic indicators of financial and operating performance between the fully privatised airlines and

the control sample (or company) in the three years before the year of the full privatisation and in the following three years (so we span a seven year period for each airline).

We start with some basic financial performance indicators such as profitability and indebtedness. For profitability we use the «operating income/sales» *ratio* and for indebtedness we use the «financial debt/sales» *ratio*, since both *ratios* are less sensitive to accounting manipulation and to difference in accounting standards across countries compared to other similar ratios (such as “net income/sales”, “debt/equity” or “debt/total assets”; in general, these last two indicators are more sensitive to new equity capital issue, that is sometimes linked to the privatisation process, compared to the «debt/sales» *ratio*).

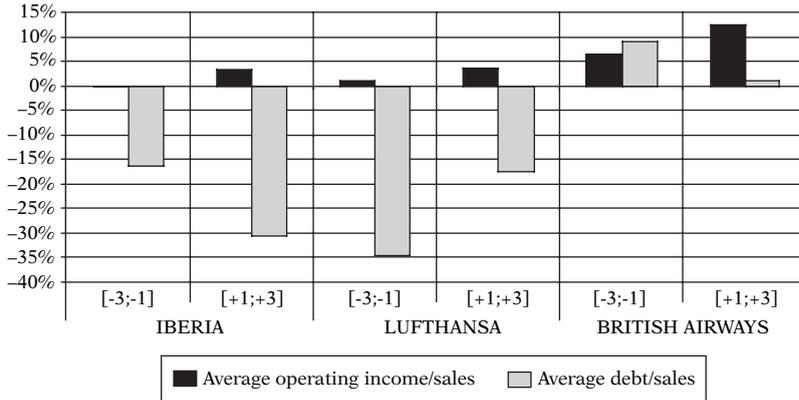
Graph 3 shows that all the three fully privatised airlines improve their profitability compared to state-controlled airlines after the privatisation. The differential in the average «operating income/sales» *ratio* between IB and the control sample in the 3 year before the privatisation was close to zero, but in the 3 years following privatisation IB «operating income/sales» *ratio* exceeded the control sample by roughly 3%. The dynamic for LU is similar to that of IB, while BA profitability differential against its benchmark increased dramatically after full privatisation. As far as leverage is concerned, Graph 3 shows that IB and LU were considerably less indebted than the benchmark sample before the privatisation and they remained so thereafter (IB became even less indebted compared to the control sample, while the “debt/sales” differential between LU and the control sample reduced); BA was more indebted than LU before the privatisation but thereafter their “debt/sales” *ratios* became similar.

These evidences are pretty much in line with those on comprehensive multi-country and multi-industry studies on privatisations, such as Megginson, Nash and Randenborgh (1994), Boubakri and Cosset (1998) and D'Souza and Megginson (1999), which show that after privatisation profitability increases and leverage reduces significantly.

We now look at the growth rate of investments and output. Depending on the output or production capacity parameter used

GRAPH 3

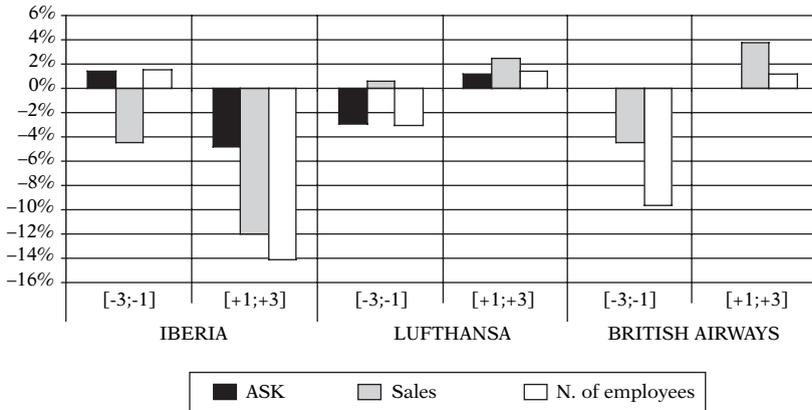
PERFORMANCE INDICATORS OF PRIVATISED AIRLINES
(percentage difference in averages between privatised airlines and State controlled airlines in the 3 years before and after privatisation)



Note: Data for State controlled airlines are a weighted average of average of SAS and Air France.
 Source: calculation on Worldscope and balance sheet data.

GRAPH 4

GROWTH OF PRODUCTION CAPACITY IN PRIVATISED AIRLINES
(percentage difference in average growth rate between privatised airlines and State controlled airlines in the 3 years before and after privatisation)



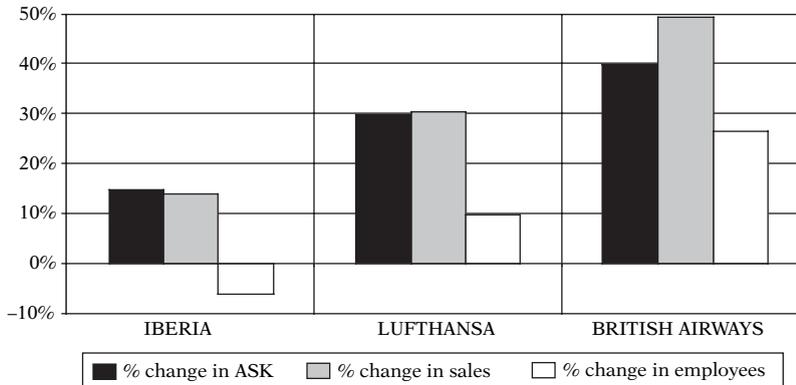
Note: Data for State controlled airline are a weighted average of growth rate of SAS and Air France.
 Source: calculation on Worldscope, balance sheet and AEA data.

(ASK, sales, number of employee), we get partly different results. However, Graph 4 shows clearly that IB grew at a much slower rate than the benchmark sample after the full privatisation (and also reduced considerably its indebtedness compared to the benchmark sample, as shown in the previous graph): ASK grew at a rate 4% lower than the benchmark sample, while sales and employees at rate, respectively, 12% and 14% lower. The evidences for BA and LU tend to be different: LU expanded its production capacity basically at the same rate of the benchmark sample after the privatisation (and used more debt compared to the benchmark sample), while BA sales and employees grew faster than its benchmark after the privatisation by, respectively, 4 and 1% roughly.

These evidences contrast somewhat with the quoted multi-country and multi-industry research on privatisations, which show that on average firms tend to invest more and to expand significantly their sales after privatisation, while the evidence on employment is less strong. This is partly due to the difference in methodology, since we compare difference against a control

GRAPH 5

CHANGE IN CAPACITY PRODUCTION FOLLOWING PRIVATISATION
(percentage change in absolute average levels in the 3 years before and after privatisation)



Source: calculation on Worldscope, balance sheet and AEA data.

sample while the mentioned studies report absolute levels of median or mean changes.

However, if we take absolute changes in the production capacity indicators, the results are very much in line with the quoted research: sales and investments (proxied by ASK) grow significantly after the privatisation, while employment levels grow less (or reduce as for the IB case; Graph 5).

4.2 Labour relations in the airline industry are somewhat more complex than in other sectors, both because of the specialised skills required for some workers — so that substitutes for such highly skilled employees may not be available on short notice — and because of the non storability of the good - meaning that workers can severely damage airlines in terms of lost business and reputation (Borenstein and Rose, 2006). Moreover, unions' negotiating power is reinforced when they are linked to the party in government or when the government itself takes a active role in negotiations.

Understanding the influence of ownership on labour costs has been for a long time one of the main issue in privatisation research. For example, Ng and Seabright (2001), by estimating a cost function for European airlines, find that a reduction of 10 percentage points in the share of state ownership implies (other things equal) a 10% reduction in labour rents.

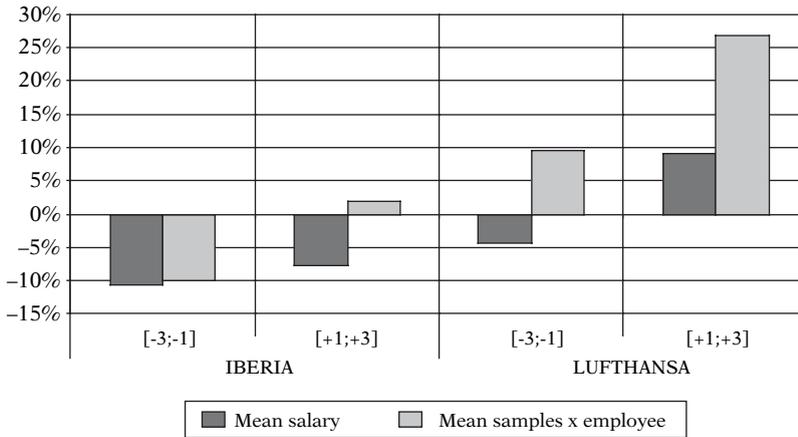
We try to give some evidence on the issue of the effect of privatisation on salaries and labour productivity. We measure average salaries in each year taking total labour costs and benefits divided by the average number of employees during the same year, while labour productivity is computed as net revenues divided by average number of employees.

Graph 6 shows that in the case of IB and LU salaries differentials against the control sample tend to close up after full privatisation:¹³ both LU and IB had lower average salaries compared to state controlled airlines before the privatisation, but

¹³ We do not report BA because we do not have data for labour cost for LU around 1987; we do have data for sales per employee but the differential between BA and LU tend to be highly affected by the exchange rate volatility in the 7 years around 1987.

GRAPH 6

**LABOUR COST AND LABOUR PRODUCTIVITY
OF PRIVATISED AIRLINES**
*(percentage difference in averages levels between privatised airlines
and State controlled airlines in the 3 years before and after privatisation)*



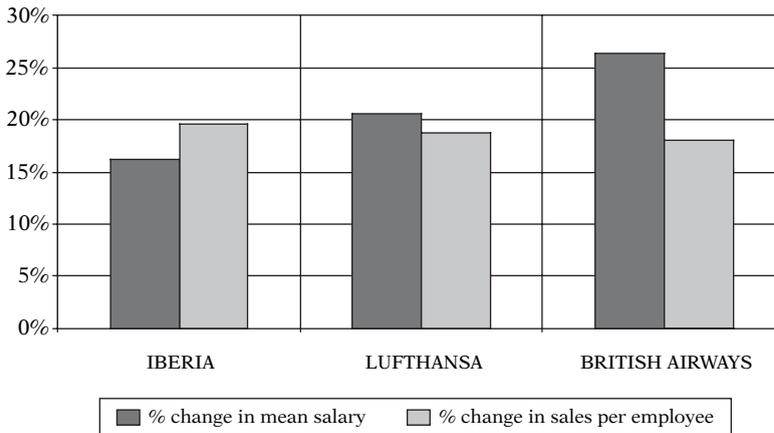
Note: Data for State controlled airline are a weighted average of SAS and Air France data. Salaries are measured as labour cost divided by average number of employee during the year; labour productivity is measured as net sales divided by average number of employees; tariffs are measured as net sales divided by RPK.
Source: calculation on Worldscope and balance sheet data.

while LU average salaries exceeded those of the control sample following the privatisation, average salaries at IB remained lower (although the difference against the control sample reduced). This effect is confirmed looking at absolute changes: all the 3 privatised airlines experienced an increase in average salaries ranging from 15 to 25% (Graph 7).

As far as labour productivity is concerned, both IB and LU show higher revenues per employee than the control sample after the privatisation (LU had a higher productivity even before the privatisation but the gap with the control sample widened further after the privatisation; IB had a lower productivity before the privatisation while thereafter it did slightly better than the control sample); taking absolute changes, all the 3 airlines exhibit an increase in average revenues per employee by 17-18% after the

GRAPH 7

CHANGE IN LABOUR COST AND LABOUR PRODUCTIVITY
FOLLOWING PRIVATISATION
(percentage change in the absolute average level
in the 3 years before and after privatisation)



Source: calculation on Worldscope and balance sheet data.

privatisation. This last result is perfectly in line with the previous mentioned research, which documents an average increase in sales per employee of roughly 19% after the privatisation (Megginson, 2005).

Turning back to the issue of labour remuneration, it has to be emphasised that our indicator based on the simple *ratio* of total labour cost to the number of employees could be influenced by the different personnel mix (pilots/co-pilots, cabin crew, maintenance and ticketing personnel) employed by each airline. For example, pilots and co-pilots represent only a small portion of the total work force (ranging on average from 5 to 10%), but their remuneration account for a disproportionate share of total labour cost (from 20 to 25%).¹⁴

¹⁴ See DOGANIS R. (2005). Doganis documents that the variance in personnel mix across major European airlines is quite small, so that our indicator of average labour cost can be taken as a good proxy to make comparison across companies.

A more accurate picture of labour remuneration in the airline industry can be taken using ICAO statistics on average salaries by personnel qualification; however, being expressed in US dollar, ICAO data are not suitable for US-Europe comparisons on long time horizons, since they are influenced by the strong USD/€ exchange rate volatility. We will use them only for cross-sectional comparisons confined to the European airlines considered in this study.

Table 6 shows that by 1995, when all European airlines were state controlled (except for BA), AF, SAS and IB paid on average higher salaries than KLM and LU, while BA (fully privatised by 7 years) paid much lower salaries than all the other state controlled airlines. By 2002, when LU, IB and BA were all fully privatised (and KLM, as mentioned, had only a relatively modest state voting influence), salaries paid by privatised companies had grown significantly (compared to AF salaries) but on average remained much lower than salaries at SAS and AF.

TABLE 6

ANNUAL REMUNERATION OF PILOTS AND CABIN CREW
IN SELECTED EUROPEAN AIRLINES
(Air France = 100; mean State controlled airlines =100)

	1992-95		2002	
	Pilots	Cabin crew	Pilots	Cabin crew
Air France	100	100	100	100
SAS	74.1	93.7	108	153.6
KLM	82.9	58.7	96.9	91.7
Iberia	91.2	101.6	90.3	111.3
Lufthansa	80.8	84.1	83.3	95.2
British Airways	51.8	46	62.3	75.2
mean State controlled airlines	100	100	100	100
mean privatized airlines*	60.4	52.5	77.4	81.6

* Includes British Airways for the 1992-95 period and Iberia, Lufthansa and British Airways for 2002.

Source: calculations on NG C.K. and SEABRIGHT P. (2001) and DOGANIS R. (2005), both based on ICAO data.

The evidence that on average salaries paid by fully privatised airlines are much lower than salaries in state-controlled airlines confirms the finding of Ng and Seabright (2001) that State ownership substantially increase the share of the rents, due to regulatory barriers or market power, that accrue to employee (in the form of both higher salaries and «quiet life»).

5. - The Stock Market Reaction to Full Privatisation

The final issue that we explore is the stock market valuation of fully privatised airlines. We start with a standard CAPM approach to test whether there is any difference in stock market returns between private and state controlled airlines controlling for their risk (*beta*); such difference should show up in the intercept (*alpha*) of the regression.

We use a standard CAPM model with one risk factor, given by the return of the market portfolio, instead of the more sophisticated multi-factor version of the CAPM proposed by Fama and French (1993) for the US equity market (which includes additional risk factors, such as “size” and “book-to-market”).¹⁵ Our dependent variable is the difference between the returns of a portfolio made of British Airways, Lufthansa and Iberia stocks and the returns of a portfolio made of SAS and Air France stocks; such extra-return on fully privatised airlines is then regressed on the return of MSCI world index. Hence, our specification in the following:

$$(1) \quad R_{\text{fully privatised airlines}}^t - R_{\text{state controlled airlines}}^t = \alpha + \beta R_{\text{MSCI}}^t + \varepsilon$$

where α captures the extra-return to fully privatised airlines.

We estimate equation (1) taking monthly returns (in order to avoid the noise in higher frequency data) stating from January

¹⁵ However, BELTRATTI A. *et AL.* (2007) have questioned the validity of both the classical CAPM and of the Fama-French multifactor version for the European equity market. Although we are aware of this, CAPM still remains the only benchmark theoretical model to analyse stock returns.

2002 (so that we can include Iberia in the fully privatised portfolio) until December 2006 (60 observations). We also try a specification which includes Alitalia and Finnair among state controlled portfolio.

A similar approach has been recently pursued by de Bruijin *et al.* (2007) who take as dependent variable of a standard CAPM the difference between the returns of a portfolio of 19 private airlines and the returns of a portfolio 8 state-controlled airlines, spanning basically all major world airlines. They find that state-controlled airlines tend to have a lower *beta* than private airlines. However, the interpretation of their results tend to be different forms ours, since they consider all major private airlines, while we take only airlines in which the state has sold entirely its stake. Hence, the *alpha* of our regression can be viewed as a proxy of political risk, as in the recent line of research proposed by Beltratti *et al.* (2007) and discussed in Section 2.

The results of our estimates, reported in Table 7, show that the *alpha* (or the extra-return of the fully privatised airlines) is always close to zero and not statistically significant (we tried both with value weighted and equally weighted portfolios); the same result is found by de Bruijin *et al.* (2007) for the "private minus state controlled" portfolio. Only if we include Alitalia and Finnair in the state controlled portfolio we get a monthly extra-return for fully privatised airlines close to 1%, but yet not statistically significant. In general, our *t*-statistics are low because we have a limited number of observations and because portfolios are made of very few stocks (hence there remains a high variance in returns due to idiosyncratic noise).

Our results contrast partly with the evidences provided by Beltratti *et al.* (2007), based on a large sample of European privatised firms spanning different industrial sectors. The authors, using a Fama-French factor model estimated on European stock prices, find a positive *alpha* for the portfolio of the bottom quartile of privatised firms with respect to the share of the state (*i.e.* a portfolio that includes all fully privatised companies plus other partially privatised companies in which the state residual stake, depending on the reference year, can be as high as 6.4%). As

TABLE 7

CAPM ESTIMATES ON THE DIFFERENCE OF RETURNS
BETWEEN PRIVATE AND STATE CONTROLLED AIRLINES

	<i>alpha</i>	<i>beta</i>	N. obs.
Private airlines minus state controlled airlines (SAS and AF only) equally weighted portfolios	0.00 (0.59)	-0.20 (-0.99)	60
value weighted portfolios	0.00 (0.38)	-0.44 (-2.53)	60
Private airlines minus state controlled airlines (SAS, AF, AL, FA) equally weighted portfolios	0.01 (0.94)	0.32 (1.44)	60
value weighted portfolios	0.01 (0.90)	-0.17 (-0.97)	60

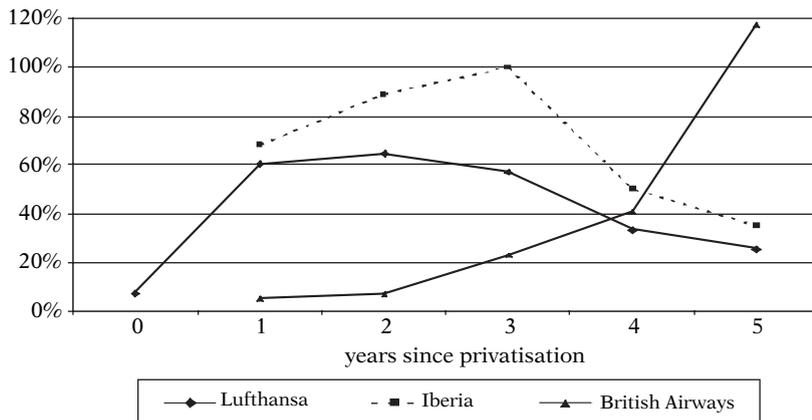
Note: The dependent variable is the difference between the monthly return of a equally (value) weighted portfolio of British Airways, Lufthansa and Iberia and the monthly return of a equally (value) weighted portfolio of SAS and Air France (plus Alitalia and Finnair in the 3rd and 4th specifications). The independent variable is the monthly returns of MSCI world index. Returns are computed from January 2002 to December 2006 and include dividends. Values in parenthesis are *t*-statistics robust to heteroscedasticity and autocorrelation.

mentioned before, Beltratti *et al.* (2007) tend to interpret such positive *alpha* as a premium for political risk, *i.e.* the risk that the state will change the rule of the game after the full privatisation.

Even though standard CAPM tests tend to show that over the 5-years period 2002-2006 fully privatised airlines have not earned any extra-return against state-controlled airlines, it is useful to document the stock market reaction for each private airlines in the years immediately following the privatisation. We take again the same benchmarks employed in section 4 and compute the yearly extra returns (taking into account dividend payments) of the three fully privatised airlines against the returns of such benchmarks (for SAS and AF we take the simple average of their yearly returns adjusted for dividends). Graph 8 shows that fully privatised airlines substantially outperformed their state-controlled benchmarks in the 5 years following privatisation. IB and LU

GRAPH 8

CUMULATIVE EXTRA-RETURNS OF FULLY PRIVATISED AIRLINES
AGAINST STATE CONTROLLED AIRLINES



Source: calculation on Thomson Financial data. For Iberia and Lufthansa data show the cumulative yearly extra-returns (taking into account dividends) against the (simple) average of the returns of SAS and Air France, while for British Airways data show the extra-return against Lufthansa.

strongly outperformed SAS and AF in the three years after the privatisation and then tend to do worse, but the cumulative extra-performance over 5 years ranges from 25 to 35%; instead, much of the BA extra-performance against LU is concentrated the 4th and 5th year after full privatisation.

One possible interpretation of these evidences is that although in the long run there is no extra-return, or “positive *alpha*”, to private airlines, the initial stock market reaction to full privatisation is positive, mirroring the improved financial and operating performance against state controlled airlines documented in the previous section.

6. - Conclusions

In the airlines sector both commercial agreements between the US and each single European country and the European

regulation include “nationality clauses” (even if in the wider meaning of “European nationality”). These clauses, conditioning traffic rights to shareholders nationality, have linked commercial growth and ownership structure; this link, in turn, has hindered consolidation and privatisation. Due to troubles which full privatisation can cause to traffic rights and to a persistent politicians’ propensity to keep a national flag carrier for prestige reasons, a mixed ownership regime (combining, for long periods of time, state with private ownership) has become widespread. For these reasons the share of state ownership in the airline sector is one of the highest compared to other industries.

This state of the industry has suggested to focus our research on the differences between fully and partially privatised carriers. The three cases of fully privatised European airlines — British Airways, Lufthansa and Iberia — have many common features, but some specificity as well. These airlines have undergone deep restructuring — especially in terms of personnel reduction — much before (and in view of) the privatisation; all the three privatised airlines have acquired their main domestic competitors (before, after or in the same year of the privatisation) and so the privatisation was always associated with a significant consolidation in the national market. The state bore most of the financial costs related to the restructuring (especially in the cases of Lufthansa and British Airways), while new private shareholders embarked mostly into commercial and organisational restructuring.

Following full privatisation, airlines show an increase in profitability and labour productivity (particularly Iberia and Lufthansa) compared to other major state-controlled airlines, and expand considerably their production capacity compared to the pre-privatisation period; average salaries increase considerably after the privatisation, although in line with the increased labour productivity. More general evidences on salaries differential between fully privatised and state controlled airlines tend to confirm evidences from previous research that state ownership increase the share of rents that accrue to employees.

In analysing the effects of state ownership on stock market returns (though our conclusions are based on a simple CAPM

whose performance on European equities has not been tested thoroughly) we find that, controlling for different *betas* to the market portfolio, investors do not require an extra-return against state controlled airlines to invest in fully privatised airlines. One possible interpretation of this preliminary evidence is that investors do not seem to require a premium for political risk. However, the stock market reaction in the years immediately following privatisation is quite positive, and fully privatised airlines tend to outperform state controlled airlines.

Summing up, although we do not perform any welfare analysis, our evidences show that the presence of the state as shareholder in the European airline industry is detrimental, at least to firms' profitability and growth. On the other hand, the exit of the state does not seem to expose private shareholders to any significant political risk.

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