

**PATTERNS OF AIRPORT POLICY REFORM IN EASTERN EUROPE:
LESSONS FROM OECD EXPERIENCE**

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Abstract: Airport policies have been substantially transformed in Western countries in the last two decades. The extent of the reform may be particularly significant in Eastern European countries in the next years, since the main driving factors for the change apply intensively there. From the review of relevant experiences of policy reform in OECD countries, we argue that corporatization and de-centralization of airport management have been aimed to efficiency improvements, while privatization has been mostly financially driven. In this scenario, we claim that a successful outcome of airport policy reform in terms of social welfare requires to maximize the opportunities for airport competition, and to promote a shift towards a regulatory framework that sets the correct incentives for pricing and investment.

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1. Introduction

Airports are considered essential facilities for the economic development of the territories where they are located. Notwithstanding commercialization is becoming a general trend in the airport industry in the sense that airports run several activities on a more market-oriented basis, and not exclusively as public service organizations. Indeed, corporations commonly manage airports on an individualized basis in Western countries so that competition among nearby airports is possible. Furthermore, several airport operators have been privatized in the last two decades. Most of Eastern European countries have also started reforms of airport policies towards those directions.

Two causes explain the pressures for a more cost-minimizing behavior of airport operators, regardless owners belong to the public or private sector. First, air traffic growth requires high capital expenditures for airport expansions. Second, airline liberalization has brought competitive forces to the whole chain of the aviation industry, especially with the success of low cost carriers.¹

In a general context of air traffic growth, airline competition seems to favor concentration of such traffic in a very few airports (Boston Consulting Group, 2004): the large hubs of network carriers and the operating basis of low cost carriers. This tendency in the airline sector has three major implications for the airport industry. First, large hubs suffer typically from congestion since network carriers demand high levels of capacity for attending its waves of connecting flights. In this way, the operating profits of these large airports tend to be substantial, but new investments are periodically needed. Second, low cost carriers may prefer to use smaller regional airports that allow for a more simple and cheap product. Third, airports that are not able to attract either network carriers or low cost carriers will keep facing financial difficulties so that they will need public subsidies to survive. Hence, governments must afford the financing of investments in airports where airlines concentrate their traffic and the financial survival of the smaller regional airports. Moreover, such government duties take place in a context of constrained public budgets.

This new scenario has imposed stronger demands by airlines and governments to the airport industry. Indeed, airlines require improving the efficiency in airport operations, and governments ask additionally for funds addressed to investments and subsidies. Hence, privatization and decentralization of airport management can arise as two policy responses to such efficiency and financing requirements. Indeed, privatization can imply a better access to financial resources and a more powerful structure of incentives, while decentralization can provide opportunities for airport competition, and so for efficiency improvements, to attract airlines at their sites.

Additionally, the setting of aeronautical charges has been traditionally subject to some form of economic regulation to prevent the abuse of market power by airport operators. To this regard, a new framework for price regulation has usually accompanied privatization, going from a cost relatedness principle to schemes that are more flexible. Hence, privatization can have an indirect effect on efficiency through the associated changes in price regulation.

We argue that the extent of airport policy reforms may be now particularly intensive in Eastern European countries. Here, air traffic has increased at much higher rates than those achieved by Western countries in the last years, and a similar path is expected for the following years since the levels of air traffic in Eastern European countries are still relatively low. Low cost carriers have played a major role in this air traffic growth since their market share is increasing extraordinarily in all Eastern European countries. Finally, the increase of the air traffic channeled by low cost carriers has not prevented a substantial concentration of traffic in the capital-city airport. All these trends impose new challenges for policy-makers in Eastern European countries in a context of substantial financial deficits.

The aim of this paper is to examine the most welfare enhancing options for airport policy reforms in Eastern European countries that are -or will be- members of the European Union in 2007. In this way, we first review the main characteristics of the air markets in Eastern European countries and the current airport policies in terms of management, ownership and price regulation. Then, we analyze relevant experiences of airport policy reform in OECD countries that can provide useful insights for the Eastern European countries as the main driving forces for the shift also apply to these countries. Finally, we discuss the outcomes that can be expected from such reforms with the help of the previous literature about the relationship between airport performance, privatization and price regulation.

2. Airport policy in Eastern European countries

Air traffic markets in Eastern European countries are the most dynamic in Europe and are among the most dynamic in the world. The opportunities created by the involvement in the European Union and the expansion of the low cost carriers explain such positive evolution.

Table 1 shows some key characteristics of the air traffic markets in Eastern European countries. Overall, total air traffic has increased by about 16 per cent in EU-15 countries for the period 2003-2005, while it has increased by almost 60 per cent in the Eastern European countries that are currently members of the European Union or will be in 2007.

In spite of those recent high traffic growth rates, air traffic in Eastern European countries will likely maintain a similar growth path in the coming years. Indeed, the amount of air passengers per inhabitant is still very low in all these countries in comparison with the levels obtained by EU-15 countries, when it is expected some economic convergence across both geographical areas. To this regard, it is worth noting that the IATA International Cargo and Passenger Forecasts indicate that traffic growth in Poland, Czech Republic, Hungary and Romania will be among the highest ones in the world for the next five years.

Insert Table 1 about here

Low cost carriers have played a major role in these high rates of air traffic growth. Along with the increase of operations of the two largest European low cost carriers in this geographical area, Ryanair and Easyjet, several domestic airlines are performing quite well such as Sky Europe, Wizzair, Centralwings or Air Baltic. In fact, as table 2 shows, the market share achieved by low cost carriers has extraordinarily increased in the last three years in most of the considered Eastern European countries. The four countries with major presence of low cost carriers - Poland, Hungary, Slovakia and Latvia- are among the five countries that have achieved the most significant increase in air traffic in the period 2003-2005.

Insert Table 2 about here

Nevertheless, the growth of the passenger number moved by low cost carriers has not mitigated the particularly high concentration of traffic in the capital-city airport in most Eastern European countries. With the exception of Poland, low cost carriers from Eastern European countries have established their operating basis in the capital-city airport. This strategy is reversed to that followed by other low cost carriers, most notably Ryanair, of focusing their

origin airports in small secondary airports. Ryanair, which is currently one of the European leading airlines, may well set an operating basis in some secondary airports of the considered countries in the following years. In such a case, a real revolution would take place in the activity generated by those airports.

Table 3 shows some key aspects of the airport policies currently implemented in Eastern European countries. Here, airports are usually run by a public corporation that is subject to the laws of private entities. Airports in the smaller countries –where only one airport has large traffic- are usually managed on integrated basis. Management of airports in some of the largest markets is made on individualized basis, but de-centralization in Poland, Romania and Bulgaria is still in very initial steps.

Insert Table 3 about here

Airport privatization is an ongoing process in Eastern European countries but it is still in an early stage. There are currently prospects for privatizing some of the largest airports in this geographical area, such as Prague, Sofia and Bucharest airports, but privatization has only been widely implemented in Hungary and Slovenia. During 2006, privatization in Hungary has taken the form of a sale to a strategic partner (i.e; BAA in Budapest, Aer Rianta in FlyBalaton). Otherwise, a majority stake in Ljubliana airport was sold off through a public offering in the stock market in 1997.

Importantly, the Slovakian government started the privatization of Bratislava airport at the end of 2005 through the sale of two-thirds of the airport operator equity to a private consortium leaded by Vienna airport operator. Such sale raised strong criticism and competition concerns in Slovakia since both airports are located less than 50 kilometers to each other. In October 2006, the newly appointed government has definitely cancelled the sale to the private consortium with the claim that it did not fulfill some formal conditions that it was obliged to.

Concerning the financing of its operations, the main sources of revenues for airports in Eastern European countries are aeronautical charges and commercial incomes from concessions. Regulation of aeronautical charges does not tend to follow a formal procedure and it is set on a cost relatedness principle by a non-independent regulator. To this regard, it is worth noting that the scope of economic regulation depends on the use of a single-till or dual-till approach. Under the single-till approach, aeronautical charges are set taking into account the non-aeronautical revenues of the airport, while under the dual-till approach it focuses exclusively on aeronautical

charges. In Eastern European countries, aeronautical charges are usually based on the overall financial situation of the airport so that a single-till approach is used.

3. Relevant experiences of airport policy reform in OCDE countries

In this section, we put the attention in some experiences of airport policy reform in OECD countries that can provide useful insights for Eastern European countries. We distinguish between two subsets of case studies. A first subset is composed of three policy experiences from Anglo-Saxon countries that have involved a shift from an airport management framework based on public centralized networks to a new one characterized by an individualized management, regardless of being public or private. These are the experiences of Australia, Canada and Ireland. The second subset is composed of three European policy experiences where a traditional individualized public management has been progressively transformed, with different degrees of intensity, towards a much more relevant involvement of the private sector. These are the cases of the United Kingdom, Germany and Italy.²

We first describe the airport policy reform in each country, stressing the motivations that have driven the process. Then, we analyze the possible outcomes that can be expected from such reforms. Since the de-centralization and/or privatization process have been frequently accompanied by changes in the regulation structure of airport charges, we also refer to these changes as they can give some light on the motivations and results of the policy reforms. Table A1 in the appendix shows who currently owns the major airports in those countries where the implemented reform has involved the privatization of several airport operators.

3.1. From public networks to individual management

- Australia

Australia has 90 commercial airports and 12 of them handle over 1 million passengers per year. Total traffic is about 100 million annual passengers. Five large airports – Sydney, Melbourne, Brisbane, Perth and Adelaide – concentrate 75 per cent of the traffic to/from Australian airports. Taking into account that one of the traditional domestic carriers, Ansett, has recently collapsed, low cost carriers as Virgin Blue show strong traffic records in this country.

Traditionally, major airports were owned and operated by a government department as an integrated network. In 1988, the Federal Airports Corporation Act introduced the corporatization of the airport management in Australia. Indeed, a newly created publicly owned

company, the Federal Airports Corporation (FAC), was established to own and operate 22 major Australian airports. Additionally, the federal government transferred ownership and management of smaller airports to local governments.

In 1996, the Australian government breaks up the FAC system and sold individually 17 of the 22 major airports to private operators through long-term leases. The remaining five airports were set up as airport companies wholly owned by the Government in preparation for the sale, which was made effective in the following years. The largest Australian airport – Sydney - was privatized too in 2002.³

Currently, most of the medium to large airports are privately owned, while local governments own most of the smaller airports. Financial institutions, real state companies and foreign airport authorities are the most typical shareholders of Australian large airports. Cross ownership restrictions were set on the largest airports, but several owners of major airports have been able to be shareholders of medium or smaller airports.

According to Hoover et al. (2000), the main policy objective of the Federal government in the eighties was to increase the cost recovery from airport activities. The transference of smaller airports to local governments and the corporatization of large airports were implemented to meet such objective. Indeed, corporatization was aimed to give a more market orientation to airport management. However, the good performance of Australian airports under the corporatization model did not avoid the shift to privatization policies in the middle of nineties. One of the main motivations for privatization was to use the proceeds of the airport sales to reduce the government debt. In fact, the revenues per sale have been much higher for Australian airport operators (particularly for Sydney) than for most of the privatized European airport operators. However, the move towards a de-regulated pricing system may suggest some concerns of the government concerning efficiency.

Indeed, price-cap regulation on a dual-till basis was in place at privatized airports until 2001. In the following year, regulation was substituted by a monitoring system. This means that there is no explicit regulation of prices, but regulation could be imposed if performance is considered not good enough. This monitoring system was established for seven major airports, while the rest of airports are not regulated or monitored at all. The Productivity Commission, the government's main microeconomic advisor, recommended the change with the claim that the system of price cap regulation did not provide enough incentives for cost reduction.

Forsyth (2006) argues that since the end of the price cap regulation, airport charges have increased but they seem to be below monopoly levels. The moderation in the use of market power may be explained by the threat of re-regulation and community pressures as most airports have strong local representation on their boards.

- Canada

Total air traffic in Canada is about 90 millions of passengers per year. In 2005, there were 10 airports handling over 1 million of passengers. The four largest airports – Toronto Pearson, Vancouver, Montreal, Calgary– concentrate approximately 60 per cent of all air traffic in Canada. Additionally, it is worth mentioning that the former flag carrier, Air Canada, has had serious financial difficulties in the last years due, in part, to the success of new low cost carriers as for example Westjet.

By 1970 Transport Canada, an entity belonging to the Federal government, owned and managed as a group 149 Canadian airports, including commercial airports and local airports for private aviation. In 1985, the government began a re-examination of its policy regarding airports because the system was sustained only through the substantial amount of subsidies provided every year by the federal government. In this way, the continuous complaints of many communities dispersed around the whole country about the insufficient capacity at airports were a major motivation for the Federal Government to change airport policies. An extensive review of policy options by Transport Canada resulted in a 1987 recommendation to transfer operation of airports from the Federal government to not-for-profit authorities to stimulate a major efficiency in airport operations. Privatization was not considered as a real option by Transport Canada in a period where privatization experiences in other countries had still a limited scope.⁴

The Transport Canada's policy recommendations were made effective through the National Airports Act in 1994, which created a new framework for the airport management in Canada. The National Airports Act established that the federal government would retain ownership of the 26 commercial airports although their management was transferred on an individualized basis to not-for-profit local airport authorities through long-term leases.⁵

In addition, it was created a national fund to finance investment and operating losses of the smaller regional and local airports. To this regard, the 26 major airports are required to make annual lease payments to the federal government for sustaining this national fund. The national

fund system has been strongly criticized as the basis for calculating the magnitude of the rents to be paid by major airports was not made clear until recently.

As suggested by Tretheway (2006), the main objective of Canadian airport policy since the middle eighties has been to facilitate increased investment in Canadian airports without using the public budget. The policy instrument chosen was to transfer operation of individual airports to not-for-profit private corporations. Given this character of not-for-profit corporations, it was decided there was no need to impose a price regulation on airport charges, which are currently not subject to external review, approval or appeal processes. However, these not-for-profit corporations are able to use retained surpluses to finance new investments.

- Ireland

Ireland is served by nine airports that account for a traffic of 25 million passengers per year. The three largest airports, Dublin, Shannon and Cork, handle 97 per cent of all air traffic; Dublin Airport alone handles about 80 per cent of total traffic. Importantly, the Irish airline Ryanair, which is the largest low cost carrier in Europe, has a large market share in all these three airports.

Aer Rianta was set as the management company for Dublin Airport in 1941 and for Cork and Shannon airports in 1969. The 1988 Air Navigation and Transport (Amendment) Act gave also the ownership of these three airports to Aer Rianta, and thus their management and ownership was unified. Six other very small airports are owned and operated by private firms.

The 2004 State Airports Act has implied an important reform of the airport policy in Ireland as it has established the decentralization of the system by creating three authorities that will operate individually each three airports. By now, all three airport authorities are state-owned, but there are strong expectations for a privatization movement very soon.

Aer Rianta had been traditionally subject to price regulation in basis of the overall financial position of the company. Within this scheme, since 1995 Aer Rianta increased gradually the charges paid for airlines. This provoked a strong activism against such increases by these airlines, particularly by Ryanair. The policy respond to this activism was to create an independent regulator for the Irish airports, the Commission for Aviation Regulation (CAR). The price cap on a single-till basis that CAR then imposed upon Aer Rianta charges was designed to reflect the company's capital expenditure requirements.⁶ However, the CAR determination was disputed by most of the affected airlines. To this regard, it was put into judicial review who was entitled to determine Aer Rianta's capital expenditure requirements.

According to Reynolds-Feighan (2006), the decentralization movement can be explained by the dissatisfaction with the workings of the previous integrated system, particularly regarding the regulation of prices. The Irish government had experimented with the independent regulation to constrain the behavior of Aer Rianta as a monopolist. However, the subsequent conflicts created by a very competitive aviation industry have stimulated the shift to a more politically neutral solution. In this way, the reform was aimed to introduce competition between the three airports and even was postulated the convenience of introducing competition between terminals at Dublin airport, although the latter policy was not finally implemented. Furthermore, Dublin airport is currently the unique Irish airport subject to price regulation.

3.2. Privatization in a context of individual management

- United Kingdom

United Kingdom has the largest air transport market in Europe since British airports handle about 200 millions of passengers every year. In 2005, 20 out of the 50 commercial airports generated traffic of over one million passengers. Airports located in the London urban area concentrate 59 per cent of total air traffic to/from this country. Furthermore, it must be said that almost one third of air traffic in United Kingdom is channeled through low cost carriers, such as Easyjet, bmi baby, Flybe or the Irish Ryanair.

According to Graham (2006), airport policies in the United Kingdom can be analyzed through the proposals contained in a series of White Paper policy documents. Airports had been traditionally owned by central, regional or local governments through individual authorities. In 1945, the white paper on 'British Air Services' was aimed to develop an integrated airport network but the continuous losses of smaller airports promoted the local government ownership given the financial burden that these losses imposed on the central government. However, the 1961 White Paper on 'Civil Aerodromes and Air Navigational Services' proposed that the central government would maintain some control over the main international airports. Hence, the Airports Authority Act of 1965 established the British Airports Authority (BAA), who was in charge of three London airports, three Scottish airports and Southampton.

Airports owned by local governments were still incurring huge losses and the 1985 White Paper on 'Airports Policy' established as a prior objective to extend commercialization and privatization. The rationality behind this was to reduce the public burden by promoting

efficiency in the airport operations. It must be taken into account that general policies in United Kingdom during the eighties had a strong ideological bias in favor of the private sector.

The 1986 Airports Act made provision for the BAA to become a private company through a 100 per cent share flotation.⁷ In addition to this, the 1986 Airports Act required the corporatization of all other airports with a minimum turnover. Although owners of the new corporations were initially local governments, private investors had the option to become shareholders of such corporations. In fact, since 1990 many of these corporations have been privatized usually through sales to strategic investors. Looking at the current owners of major British airports, private firms are generally the main shareholders, with three dominant groups – ADI (lead by Ferrovial), TBI (lead by Abertis) and Macquarie -. The majority involvement of the private sector is also the trend for smaller airports. The main exceptions to this rule are the airports of Manchester and Leeds.

Economic regulation is under the responsibility of Civil Aviation Authority (CAA), who took on the role of independent regulator as the result of the 1986 Airports Act. However, the Secretary of State for Transport designates airports for price cap regulation, and since 1986 four airports (Heathrow, Gatwick, Stansted and Manchester) have been designated. The rest of airports are not subject to an explicit price regulation, but are always threatened to become designated airports. A single till approach for regulating aeronautical charges is used although it has been long disputed due to the serious congestion at BAA's London airports.⁸

- Germany

Germany is the second largest air market in Europe with a total annual traffic of 145 millions passengers. Almost all the air traffic in Germany travels through 19 commercial airports, and most of them handle over one millions passengers per year. The two main hubs of the major carrier, Frankfurt and Munich, concentrate almost half of the total traffic. However, several low cost carriers as Air Berlin or Germanwings have developed a significant amount of operations in smaller airports.

Airports in Germany have been traditionally owned and operated by limited liability companies.⁹ These limited liability companies are subject to the same legal environment of private firms but usually the main shareholders were the federal government, regional and local authorities.

Since the early nineties, the main driving force for a shift in the ownership patterns of German airports are the divestitures of the public airport companies by the Federal Government

and, to a much lesser extent, by the regional and local governments. Such divestitures have taken place, in a gradual way, due to the increasing constrained public budgets. Because of this process, the Federal government only retains currently a partial involvement in the companies that are in charge of Berlin, Köln/Bonn and Munich airports. Additionally, a private consortium formed by a private constructor and the Irish airport operator (Hochtief and Aer Rianta) have become a relevant shareholder in the airports of Düsseldorf, Hamburg and Monchengladback, while the partial privately owned Frankfurt airport company, FRAPORT, have shares (aside from Frankfurt airport) in the airports of Hann, Hanover and Saarbrücken.¹⁰ Furthermore, the second terminal at Munich airport has been built (and it is operated) through a joint venture formed by Lufthansa and Munich airport.

To sum up, private investors have been able to access to operators of the three largest German airports, Frankfurt, Düsseldorf, and to lesser extent Munich. These airport operators have taken some position in other nearby smaller airports. However, the corresponding regional and local authorities are still the major –when not the sole- shareholders of the 19 commercial German airports (and usually of the smaller regional airports).

Aside from holding a minority share in the ownership of some airports, the Federal government has a general influence regarding airports policy but the technical control and regulation is responsibility of the regional governments, the Länders. Thus, there is usually an interest conflict as the Länders may have both the role of regulators and owners. According to Wolf (2002), this could explain to some extent that none of the privatized airports in Germany have been fully sold to private investors.

Regulation of airport charges have been usually based on cost relatedness principle. In this way, the regulator approves charges of privatized airports only if they are cost related.¹¹ As an exception, a price cap regulation on a dual till basis was established for the Hamburg Airport in 2000. To this regard, Niemeier (2002) argues that, contrary to other German airport cases, the partial privatization of the Hamburg airport was pursuing welfare enhancing aims as the price regulation mechanism chosen set the most adequate incentives for pricing and investments.

- Italy

Forty airports offer commercial traffic in Italy. Total air traffic moved by Italian airports is about 90 millions of passengers. In 2005, 20 airports have handled over one million of passengers. The airport system of Rome (Fiumicino, Ciampino) and Milan (Malpensa, Linate, Orio al Serio) concentrate, in similar proportions, about 70 per cent of air traffic in Italy.

Additionally, it is worth noting that several low cost carriers such as Meridiana or MyAir are threatening the dominant position of Alitalia in the Italian market.

The central government owns airports in Italy, but the management is in charge of limited liability companies. Such companies operate the Italian airports through long-term concessions. Traditionally, the unique shareholders of the airport management companies have been the regional and local governments. However, since the middle nineties there has been a move to private ownership, due to the increasing financial difficulties that limit the activity of the regional and local governments.

Private investors are the major shareholders of the Rome system and Naples, while they are partial shareholders of Turin, Venice and Florence airports. As in other countries, financial institutions, real state companies and foreign airport authorities have been active investors in the privatization process. However, several airport companies are quoted in the stock market, which has allowed creating a diverse array of airport owners.

Local and regional governments, frequently with some participation of private operators, own other airport companies in Italy (Elisabetta et al., 2006). Most notably, the SEA group is the unique shareholder of Milan airports (Malpensa and Linate) and the major shareholder of Bergamo Orio al Serio. In turn, the SEA's shareholders are the regional and local governments. Since 2001, it has been debated the privatization of SEA but this has not been made effective as of now.¹²

Since 1997, the Civil Aviation Authority (ENAC – Ente Nazionale Aviazione Civile) is the responsible of the technical and economic control of Italian airports and it is the regulator of airport charges. In 2001, ENAC was transformed into a joint stock company totally controlled by the Ministry of Economics and Finance and under the vigilance of the Ministry of Transports. Airport charges were established by Decree until 2002. Since then, airport charges are determined as a function of airport costs. Such airport charges are subject to a review procedure that establishes that airports can only increase them every five years.

4. Discussion

The motivations for implementing an airport policy reform in the case studies analyzed have generally to do with the financial restrictions of the central government and the pressures coming from the airline industry. In this way, policymakers must face two major issues: 1) To

fund the needed investments in the airports where airlines concentrate their activities 2) To sustain airports that are not able to generate enough level of air traffic.

Indeed, most network providers obtain revenues in excess of costs but, given their structure, cross-subsidization between individual airports within a group can be substantial.¹³ In a individualized management framework major airports are self-financed although new investment is periodically needed for increasing capacity, while smaller regional airports require operating subsidies from governments.

The move to an individualized management in Australia and Canada was a result of the increasing financial burden that the centralized system imposed on the Federal government. The de-centralization was expected to promote a more efficient performance and, hence to reduce the losses of the smaller airports. In United Kingdom, the idea of centralizing the airport system was also abandoned for the same reason. In Ireland, pressures for establishing a fully de-regulated airport system have come from the strong competitive environment in which the domestic airlines operate. In Germany and Italy, management has been traditionally implemented on individualized basis albeit the central government may have a partial involvement in the ownership of some airports.

The more ambitious (and likely successful) experiences of airport policy reform all over the world are always associated to an individual airport management. To this regard, the influential work of Vickers and Yarrow (1991) suggest that the crucial institutional aspect for maximizing efficiency is competition rather than ownership per se.

The management of airports as a group national network seems to impose an important cost in terms of efficiency (and accountability) as it prevents the development of airport rivalry to attract airlines to their sites.¹⁴ This efficiency cost must be understood in a broad sense: not only technical efficiency but also other aspects such as financial performance, consumer perception and the airport activities impact on the economic development of the community. Competition provides a powerful structure of incentives for improving airport performance and several studies show that scale economies in airport operations are rapidly exhausted with traffic levels (Gillen and Lall, 1997; European Commission, 2002; Pels et al., 2003).

Privatization has also been considered a significant policy instrument to increase the efficiency of airport operations. However, the link between privatization and more efficiency

seems to be less clear than that related to airport competition. In this way, airport privatization seems to be mostly aimed to financial purposes. In Germany, Italy and most notably in Australia most of the largest airports have been privatized to obtain revenues from the sales. In Italy, several smaller regional airports have also been privatized, as regional and local governments undertook the privatization process.¹⁵ Privatization has been delayed or postponed in Sydney, Berlin, Milan (and even Dublin) airports because their future development has been subject to some debate or has been associated with particularly high amounts of investments that have damaged the attractiveness of the purchase for private investors. Only in the United Kingdom increasing efficiency was an important rationale for privatization.

To this point, it is worth noting that very few published studies analyze the impact of ownership on the performance of airports. The most comprehensive work has been done by Oum et al. (2006). This empirical study uses a rich sample of large airports of all over the world for the period 2001-2003. Controlling for several factors related to the airport business, they do not find significant differences in the productive efficiency levels obtained by fully privatized airport operators with respect to airport corporations totally owned by the public sector. However, airport authorities with a private majority tend to be more profitable through a more intense use of commercial activities. In a more specific study, Parker (1999) does not find substantial changes in the technical efficiency of the BAA airports after privatization. Finally, the non published results of the empirical analysis by Vogel (2006) –which uses a sample of 31 commercial European airports for the period 1990-1999- do not allow inferring a systematic superiority of public or private operators in terms of operational and financial performance.

To sum up, privatization does not seem to lead necessarily to an improvement in the efficiency of airport operations. To this regard, corporatization may be enough to allow airport operators to use the governance, management and incentive systems of the private sector. However, it must be taken into account that other aspects of airport performance, such as service quality has not received enough attention. Private operators have an easier access to financial resources for expanding or improving airport capacity. Additionally, they may be innovative in developing retailing activities at the airport sites and, more importantly, they may be flexible in the commercial policies used to attract the airlines with the more convenient route supply for the corresponding territory. Certainly, it is needed further research in these issues to obtain more clear predictions about the relationship between privatization and performance.

In any case, it is sensible to argue that privatization will have a greater impact on efficiency when the strategic investors involved in the sales are not controlled by nearby airport operators as it has happened, for example, in the privatization of regional German airports. The recent story of the Bratislava airport privatization, which has been cancelled due to the concerns of the consequent merger between Vienna and Bratislava airports, clearly illustrate this point

Privatization and, more in general, the institutional restructuring of the airport policy can stimulate efficiency in an indirect way since it is often accompanied by a shift from some sort of rate-of return to a price-cap regulation (or even to a fully de-regulated context). It is well known that the rate-of return regulation promotes overinvestment and does not imply any incentive for a cost reduction behavior. On the contrary, the price-cap regulation provides incentives for the efficiency in airport operations although it may involve some distortion in terms of underinvestment (Oum et al., 2004). Additionally, several studies show the superior performance of the price-cap regulation in a context of a dual-till basis with respect to a single-till approach, as the former involves better signals for investments and more powerful incentives regarding efficiency (Starkie, 2002; Oum et al., 2004).¹⁶

In Australia, the de-regulated pricing system has not implied a high increase of airport charges by privatized airports due to the threat of re-regulation and pressures from territories. Such increase is not expected either in Ireland, given the countervailing power of Irish airlines. The price cap regulation through a single-till approach has been fiercely criticized in the United Kingdom. Where privatization was effectively aimed to a welfare enhancing aim, the case of the Hamburg airport, price cap regulation was implemented on a dual-till basis. Otherwise, the very much financially driven privatization experiences of the largest German airports and Italian airports have been associated to a price regulation scheme more concerned with cost recovery than to promote efficiency. Hence, the indirect effect of privatization on performance through changes in the economic regulation may depend on the particular institutional framework adopted. To this regard, the experience of Germany and Italy shows that it is critical to set an independent regulator to avoid, as much as possible, political interferences.

The main driving forces for a change in the airport policies of the considered case studies apply even in a more intense way in the Eastern European countries. Overall, the evolution of the air traffic levels is exceptionally good so that more investments will be needed to meet the increasing demand. Within this context, governments are particularly affected by financial constraints. Furthermore, low cost carriers are increasing their operations at these countries at a

very high rate, so that they will likely try to influence actively on government airport policies. Finally, the largest airports still concentrate a substantial proportion of the total traffic in the respective national networks and they likely show high profitability levels and will require new investments. Thus, it is sensible to expect that airport privatization and, likely, changes in the regulatory framework of prices will follow a strong path in the coming years in the Eastern European countries.

In this scenario for Eastern European countries, we claim that two conditions are required for a successful outcome of airport policy reforms in terms of social welfare: 1) To maximize the opportunities for airport competition as far as competition fosters efficiency in airport operations 2) To promote a shift towards a more flexible regulatory framework that set the correct incentives for pricing and investment.

5. Concluding remarks

Airport policies in Western countries have experimented substantial changes in the last two decades. Pressures from the airline industry and the financial constraints of governments have been two major driving factors for the reform. Indeed, most of these countries have opted for an individualized management in charge of a corporation subject to the laws of private entities. In addition to this, several large and medium airport operators have been total or partially sold off to private investors. Such changes have also been usually accompanied by a more flexible price regulation scheme.

Corporatization of airport management has also been followed in Eastern European countries. However, privatization and de-centralization is here still in an early stage and price regulation tends to follow a traditional cost-relatedness principle.

From the analysis of relevant experiences of airport policy reform in OCDE countries, it can be inferred that de-centralization of airport management has been driven by efficiency concerns of policy-makers. Indeed, it has been commonly thought that the individualized management may imply a more cost-minimizing behavior and thus, the suitable framework for reducing the financial deficits of smaller regional airports. Furthermore, de-centralization has allowed for airport rivalry to attract airlines at their sites in a context in which the infrastructure becomes a key factor for the competitive strategy of air service providers.

On the contrary, privatization has been generally driven for more financial reasons related to obtaining resources for financing investments and reducing the government debt. Within this context, different approaches can be observed concerning regulation of airport charges ranging from rate of return or price cap regulation to a fully de-regulated pricing system. To this regard, the motivations of policy-makers for the reform may influence on the regulatory framework chosen.

We argue that the main driving forces for a change in the airport policies of the considered case studies have arisen in a very intense way in the Eastern European countries; 1) Air traffic growth heavily concentrated in a few number of airports 2) The limitations to increase the use of public budgets for capital expenditures, 3) Airline competition stimulated by the success of low cost carriers. Hence, there are strong expectations for further privatization and institutional and regulatory changes in these countries.

In this scenario for Eastern European countries, we conclude from our analysis that two conditions are required for a successful outcome of airport policy reforms in terms of social welfare. First, it is needed to maximize the opportunities for airport competition as far as competition fosters efficiency in airport operations. Besides this, it is required to promote a shift towards a more flexible regulatory framework that set the correct incentives for pricing and investment.

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TABLES

Table 1. Air traffic characteristics in Eastern European countries

	Total air passengers (2005)	Air passengers per inhabitant (2005)	Air Traffic growth (2003-2005)	Number commercial airports	% traffic capital-city airport over total traffic
Poland	11,524,557	0.30	63.09%	10	61.47%
Czech Rep.	11,366,681	1.11	44.70%	6	94.32%
Hungary	8,107,082	0.80	61.81%	4	99.28%
Bulgaria*	4,333,108	0.56	20.83%*	4	42.83%
Romania	4,307,560	0.20	48.50%	14	77.90%
Latvia	1,889,619	0.82	165.45%	3	99.07%
Slovakia	1,631,314	0.30	154.69%	5	81.31%
Estonia	1,466,445	1.09	106.52%	5	95.54%
Lithuania	1,450,180	0.42	88.19%	4	88.19%
Slovenia	1,219,091	0.61	32.30%	3	99.34%
UE-15	-	2.35	16.25%	-	67.19%

Note: * Data for Bulgaria refers to 2004 so that it is not strictly comparable with other countries.

Source: Eurostat, European Commission (2006)

Table 2. Low-cost carriers penetration in air traffic markets of Eastern European Countries

	LCC market share (2003) ¹	LCC market share (2006) ¹	Increase in market share 2003-2006 (percentage points)	LCC from Eastern European countries	Main origin airports
Poland	2%	21.4%	19.4	Centralwings, Direct fly, Skyeurope, Wizz air	Warsaw, Katowice, Krakow, Gdansk
Czech Rep.	7.9%	12.7%	4.8	Smartwings	Prague
Hungary	2.2%	15.7%	13.5	Skyeurope, Wizz air	Budapest
Bulgaria	0%	2.9%	2.9	Hemus air	Sofia
Romania	0%	6.2%	6.2	Blue air	Bucharest
Latvia	0%	18.3%	18.3	Air Baltic	Riga
Slovakia	27.2%	41.4%	15.2	Skyeurope	Bratislava
Estonia	0%	5.8%	5.8	Air Baltic	Tallinn
Lithuania	0%	4.1%	4.1	Air Baltic	Vilnius
Slovenia	0%	3.8%	3.8	-	
ESRA²	9.2%	15.4%	6.2		

Note 1: Market share in terms of total flight movements from/to any of airports in the country. Data for 2003 refers to the second semester, while data for 2006 refers to January-may.

Note 2: ESRA is the European Statistical Reference Area, which includes about 40 European airports

Source: Eurocontrol

Table 3. Airport policies in Eastern European countries

Country	Ownership	Management	Observations
Poland	Central Gov. (Warsaw) Central/Regional/Local Gov (Rest)	Centralized (Central Government still has a major role in most of airport operators)	Partial privatization of Katowice
Czech Republic	Central Gov. (Prague) Regional Gov. (Rest)	Individualized	Plans for the privatization of Prague airport
Hungary	Majority private	Individualized	Owners of Budapest airport (BAA-75%, Central Gov.-25%)
Bulgaria	Central Gov.	Centralized	Plans for the privatization of Sofia airport
Romania	Central Gov.	Centralized	Plans for the privatization of Bucharest airport
Latvia	Central Government	Centralized	
Slovakia	Central Gov.	Centralized	Privatization of Bratislava airport has been cancelled
Estonia	Central Government	Centralized	
Lithuania	Central Government	Centralized	
Slovenia	Majority Private (Ljubljana) Minority Private (Rest)	Individualized	Owners of Ljubljana airport (51% stock market, 49% Central Gov.)

Source: European Commission (2006), KPMG (2006), airport web sites

APPENDIX

Table A1. Ownership at major airports in countries with relevant experiences of privatization (2006)

Australia		
Airport	Owner	Private interest
Adelaide	Private shares (83.8%)/Local gov. (16.2%)	83.8%
Brisbane	Financial institutions/Port of Brisbane/Local gov. (80%) Amsterdam airp. (20%)	> 50%
Melbourne	AMP (40.99%)/BAA (19.82%) Hasting Funds Manag. (13.13%)/Deutsche Asset Manag. (26.06%)	100%
Perth	Hasting Fund Manag. (75%)/BAA (15%)/ Westscheme (5%)/Others (5%)	100%
Sydney	Macquarie (63.4%)/Ferrovial (20.9%)/ Hochtief (10.5%)/Ontario Teachers (4.96%)	100%
United Kingdom		
Airport	Owner	Private interest
London (Heathrow, Gatwick, Stansted), Southampton, Aberdeen, Glasgow, Edinburgh	British Airport Authority –BAA (ADI-Ferrovial)	100%
Birmingham	Macquarie/Employees (51%) Local gov./Dublin airport authority (49%)	51%
Bristol	Ferrovial/Macquarie	100%
Liverpool	Peel holdings	100%
London Luton	TBI	100%
Manchester	Local gov.	0%
Newcastle	Copenhagen airp.	49%
East Midlands	Manchester airp.	0%
Germany		
Airport	Owner	Private interest
Berlin system	Federal gov. (26%)/Local gov. (74%)	0%
Düsseldorf	Hochtief (20%)/Aer Rianta (30%) Local gov. (50%)	50%
Frankfurt	Regional gov. (30.7%)/Local gov. (20.3%) Lufthansa (9.1%)/Julius Bär Gruppe (5.1%)/Private shares (34.8%)	49%
Hamburg	Hochtief and Aer Rianta (49%) Local gov. (51%)	49%
Köln-Bonn	Federal gov. (30,9%)/Regional gov. (30,9%)/Local gov. (38.2%)	0%
Munich	Federal gov. (26%)/Regional gov. (51%)/Local gov. (23%)	0%
Stuttgart	Regional gov. (50%)/Local gov. (50%)	0%
Italy		
Airport	Owner	Private interest
Bologna	Chamber of Comm. (52%)/Local gov. (20%)/Regional gov. (19%) Own shares (9%)/Others (9%)	8%
Milan system	Regional gov. (14.4%)/Local gov. (84.6%)/Others (0.88%)	0.88%
Naples	BAA (65%)/ Interporto Campano (5%) Regional gov. (12.5%)/Local gov. (12.5%)/SEA (5%)	70%
Rome system	Leonardo s.r.i (51.08%)/Macquarie (44.68%)/Others (1.24%) Local gov. (3%)	97%
Turin	Edizione holding (24.4%)/IMI (12.4%)/Tecnoinfrastruttura (4.70%) Bologna airp. (4.13%)/ Others (4.82%) Local gov. (38%)/Regional gov. (13%)	49%
Venice	Private shares (33%) Regional and local gov. (67%)	33%

Source: Airport websites, Forsyth (2006), Gillen & Neiemier (2006) and Graham (2006)

Notes

1. Indeed, airport services depend on airlines offering flights from their facilities, so airport competition involves rivalry to attract airline activities. That rivalry is shaped by the nature of competition between airlines, and all over the world airlines are pursuing one of two strategies to compete: either the 'network model' or the 'low cost model'. Both competitive strategies require developing a high scale of operations in several airports. Price competition is especially relevant in the attraction of low cost carriers, whereas non-price competition (runway capacity, minimum-connecting times and so on) is particularly important in attracting network carriers.

2. Given that we focus the attention on countries that have shifted substantially their airport policies, some other countries with large air traffic markets in the OCDE context have set aside of our analysis. This is, for example, the case for United States, France or Spain, where airport policies have not varied significantly in the last two decades.

3. Privatization of Sydney airport was delayed until it was not resolved a debate about the future development to alleviate congestion.

4. Recall that the British Airport Authority at United Kingdom was privatized in that year, 1987.

5. Ownership and management of 69 small regional and local airports was offered mainly to provincial and local governments. The federal government decided to maintain its full responsibility on small airports located in remote areas.

6. In order to reduce the ability of Aer Rianta to use revenues derived from Dublin Airport to cross-subsidize its other airports, it was set a specific price cap for Dublin Airport.

7. Since the privatization of BAA in 1987, there has been a strong debate concerning the common ownership of seven airports in United Kingdom by this firm as it may distort airport competition. To this regard, the Office of Fair Trading (OFT) announced in the middle of 2006 that was going to launch an inquiry into BAA airports to determine whether this market structure is convenient for the consumer.

8. The current regulatory policy uses a 'stand-alone' method which means that the charges for each airport are regulated individually, not allowing for cross-subsidization between BAA's airports.

9. For obvious reasons, the establishment of airport operators as limited liability companies has been made effective more recently for airports located in East Germany.

10. Although airport privatization in Germany has been usually implemented through sales to strategic investors, FRAPORT equity is partially quoted in the stock market. To this regard, it is worth noting that the Federal government retains a minor participation in FRAPORT.

11. Additionally, revenue sharing agreements between airlines and the airport operator are generally applied to the privatized major international airports (Gillen and Niemeier, 2006).

12. It is worth noting that the high volume of investments that were required for the construction of Malpensa airport has been co-funded by the central government and the SEA, with some cooperation of the private sector.

13. Although cross-subsidization should theoretically take place from large profitable airports to small unprofitable airports, this is not necessarily the case in practice (Bel and Fageda, 2005)

14. It is worthwhile recalling that the problem of the financial sustainability of smaller regional airports can be afforded through the use of specific subsidies, either from public budgets (e.g. reform in Australia), or from a fund financed by large airports surpluses (e.g. reform in Canada).

15. On the contrary, as we mention above, the intensity of the privatization process in Germany has been likely lower than in Italy because regional governments in Germany play a significant role as regulators, this being an exception to the general rule.

16. However, some theoretical works show that the single-till approach may dominate the dual-till approach in terms of optimal pricing for non-congested airports (Czerny, 2006; Lu and Pagliari, 2004).