

Airport Charges Regulation: The Impact of the Institutional Structure on the Regulatory Process

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ABSTRACT

The EU directive on airport charges enacted in March 2009, gives the member states two years to adopt uniform minimum standards in the said field. Amongst other things, the law requires the creation of a “national independent supervisory authority”. Currently regulations pertaining to levying airport charges differ dramatically among the member states. Poland and Germany are regulated by state agencies, whereas the UK and Ireland already established independent regulatory agencies (IRAs) some time ago. The regulators apply different methodologies to calculate the charges (cost-based and price-cap) and allow different economic environment (single till and dual till).

This work seeks to understand the multiplicity of regulatory schemes in four sample countries by analysing not only the independence level of airport regulators, but also their institutional placement and their capability to cope with their tasks. The twofold theoretical part firstly elaborates on reasons for bringing independent regulatory agencies to life, their potential benefits and shortcomings and secondly, sheds light on the rationale for airport charges regulation. Although airports are becoming less frequently recognised as natural monopolies, they are still claimed to possess significant market power, which makes them suitable for close economic regulation.

The empirical chapters depict subjects of the airport charges regulations and present who carries out the regulation and how this is done. Particular attention is paid to the independence of the regulatory bodies, consultation processes and the authority’s ability to impose its own decisions.

Finally, the examined regulatory processes are classified into two categories: the low-powered and high-powered regulatory systems. Four factors are put forward to try to explain the high or low-powered nature of the analysed regulatory systems in the sample countries. It is found that the regulation level and privatisation cannot serve as causing variables, whereas independence and regulator’s regulatory strength, when combined, can explain in most of the cases the stability of two regulatory solutions and the unsustainability of another one.

It seems that sustainable high-powered regulatory systems require a regulator that is endowed with both high operational independence and strength allowing it to impose own decisions. When one of those elements is lacking, the low-powered regulatory scheme, with low independence and strength, seems more probable since hybrids do not appear stable in the longer term.

Keywords: airport charges, regulatory systems, independent regulatory agency

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LIST OF ABBREVIATIONS

BAA – British Airports Authority
CA – Competition Authority (Ireland)
CAA – Civil Aviation Authority (UK)
CAO – Civil Aviation Office (PL)
CAR – Commission for Aviation Regulation (CAR)
CC – Competition Commission (UK)
DAA – Dublin Airport Authority
EU – European Union
ICAO – International Civil Aviation Organisation
IRA – independent regulatory agency
OCCP – Office of Competition and Consumer Protection (PL)
PFA – private framework agreement
Quango – quasi-autonomous non-governmental organisation
SLA – service level agreement

“Regulation is essentially a means of preventing the worst excesses of monopoly; it is not a substitute for competition. It is a means of ‘holding the fort’ until the competition arrives.”

(Littlechild 1983)

1 INTRODUCTION

When booking a flight ticket on the internet one can never be sure how the final price will look like. Will an initial amount of say €10, which importunately blinks on the screen simultaneously taking half of its size, double or triple or land close to a hundred at the end of a multi-step booking process. How come that a promisingly looking €10 flight turns out to cost €50 or more? Part of the answer lurks under the inscription “airport charges” and this paper takes a closer look at the issue of how the process of setting those charges is arranged.

In recent years the EU has been working out an agreement on the so-called ‘airport package’. On 11th March 2009, the European Commission and the European Parliament signed the directive 2009/12/EC on airport charges. The directive introduces coherent rules for airport charges regulation across the member states, though this will not mean alike charges at each of the European Union’s airports. The member states have two years to comply with the law.

For some member states, the new rules will not be earthshaking. For instance, as required by the directive, independent regulators for economic regulation have already been working in Ireland since 2001¹ and in the UK since 1986.² Nevertheless, some member states will have to significantly reform their regulations and institutions and adjust to the reformed *acquis communautaire*.

This paper analyses the regulatory schemes of airport charges regulation in four member states i.e. Germany, Poland, Republic of Ireland and the United Kingdom. After closer examination one sees that they are all but homogenous. Regulatory bodies act in distinct institutional habitats, represent diverse organisational structures, and are granted with various prerogatives. Different methodologies are utilised to set the charges and regulatory processes run along different patterns.

This work seeks to understand this multiplicity of regulatory schemes for airport charges by analysing not only the independence level of airport regulators, but also their institutional placement and their ability to cope with their tasks. We attempt to establish elements of the institutional design that are necessary for the given regulatory approaches.

¹ Created by the Aviation Regulation Act, 2001.

² Created by The Airports Act, 1986.

The sample countries have been chosen due to their diversity. Ireland and the UK have already gathered much experience in the field of the airport economic regulation by an independent regulatory agency (IRA). Still their institutional designs are quite different. Undoubtedly, the UK is a leader in this field as it has the longest track record of independent regulation of airports. Ireland has often looked across the Irish Sea towards its neighbour when arranging its own regulations. Nonetheless, the Irish government has implemented its own regulatory scheme, which differs from the British one, despite sharing similar insular conditions.

The two other states to be observed and discussed here, Germany and Poland, operate in quite converse environments. Their central location on the continent and abundant road and railway connections do not doom them to aviation. Germany operates a particular system for airports regulation, which reflects well its federal system and is characterized by a strong role of the regions, *Länder*. Poland, on the other hand, belongs to a group of the new member states, which have fully liberalized their aviation sector only recently i.e. May 2004, and runs regulatory methodology similar to the German one, although it is steered from the central level.

Having shortly presented the analysed countries, this paper proceeds as follow. Part two puts forward theoretical considerations of the paper. Part three tackles an issue of what and who is regulated, chapter four elaborates on regulatory authorities and their set-up. The following fifth section reveals how the regulation of airports is carried out and then analysis of data is conducted in the chapter six. Finally part seven offers concluding remarks.

2 THEORETICAL CONSIDERATIONS

2.1 Regulatory agencies

Since 1980s the Western European countries have witnessed a broad sweeping phenomenon of shifting the responsibility for the economic regulation from hands-on direct state control to independent regulatory agencies, or IRAs (Coen and Thatcher 2008: 49). Those regulators have been granted by the elected governments with a significant degree of *de jure* independence and power to reign over competition issues (Thatcher 2007: 1028). In other words formal independence is to allow them acting at the arm's length from the governments. However, their *de facto* independence shall not be overestimated (Majone 1999: 9; Coen and Thatcher 2005: 335). Majone (1999) suggests that creation of IRAs constituted an element of a broader move from the interventionist state to the regulatory state.

Explanations standing behind this proliferation of IRAs are all but homogeneous. They begin with claims that neutral IRAs simply have at their disposal much greater level of *expertise* than politicians do, thus are better suited for creating regulation in the delegated areas. Another justification, building on the previous one, proposes that *costs* of policy making by IRAs are lower than in case if the same work was to be performed by the politicians. Thanks to the delegation of tasks the usage of time and resources is optimised. The third rationalisation implies that politicians transferred their regulatory powers to IRAs in order to avoid *blame* for possible policy failures. Finally, the last explanation suggests that IRAs were brought to life because of the need for long-term *credible* commitment (Majone 1999: 3-4; Coen and Thatcher 2005: 332). The credibility argument states that “political sovereigns are willing to delegate important powers to independent experts in order to increase the credibility of their policy commitments” (Majone 1997: 139-40). Credibility of politics is crucial if coercion is not an option and the state has to earn trust of other parties. In absence of delegation politicians’ decisions may suffer from untrustworthiness as they are inherently affected by ‘short-terminism’ of the electoral cycles (Majone 1999: 4; Gilardi 2002: 875). Simply put short-sighted political pressures may result in outcomes that are not always beneficial for the public interest (CA 2001: 58). Moreover, even if the short-terminism did not play a major role, which is most often not the case, then the time inconsistency problem emerges. Political decisions that have been made in the past attempted to address certain issues of a given state of world, which were present at the moment of the decision making. The problem is that the decision makers always act under condition of incomplete information because they can only assess the potential impact of their decisions on the basis of surrounding them *at the given moment* world. However, as soon as a new decision is made it does not function any more in the ‘old’ state of world, because *expectations* of actors have adjusted to this new decision and thus created new habitat, which may bring to life unexpected outcomes that the decision had not foreseen and addressed. Those again will call for political action and hence stability cannot be credibly achieved. Situation looks different when power is delegated to independent regulators, which do not feel short-term electoral pressure and may take decision with long-run consequences in mind.

Although credibility hypothesis appears appealing and it wields some explanatory power it cannot justify all the instances of the delegation of regulatory powers to IRAs. For instance although the Dublin airport (DAA) is a fully state owned corporation it functions under strict regulation of an IRA and the credibility thesis usually pertains to regulation of private enterprises, because the latter need credible commitment of a state to a given regulatory decision in order to develop long-term strategies. On the other hand, the state-run entities, like the DAA, could be always influenced more directly by politicians and

independent regulation does not seem so crucial to control them. An important question then to ask is: how independent are IRAs? Thatcher (2005: 368) observes that politicians, despite retaining much of their formal control over IRAs, did not exercise their influence on the regulators. He proposes two explanations for that phenomenon. Elected politicians allowed creation of IRAs either because they found alternative channels of pressuring them and in fact regulators do not enjoy much of autonomy, or politicians found out that benefits derived from independence outweigh the costs of agency losses and IRAs possess real freedom.

Having briefly presented possible benefits that the delegation of regulatory power may help to materialise, couple of shortcomings should be shortly addressed as well. Firstly, IRAs suffer from legitimacy deficiency. They are not elected, nevertheless, their power allows them taking highly political regulatory decisions, e.g. which company obtains a license for operating in a given sector. Additionally, IRAs may be prone to agency capture if they are not adequately staffed or equipped with human or financial resources (Majone 1999; Coen and Thatcher 2005: 337-9), thus losing their all potential benefits. Finally, due to their regulatory powers IRAs may produce excessive regulation and pose unnecessary administrative burden on regulated business, thus hamper the competition (CA 1999: 11).

With this highly selective introduction to the topic of independent regulatory agencies let us move now to an issue of airport charges regulation and a question if there is at all a need to regulate the airports.

2.2 Economic regulation of airports

Traditionally network utilities were a prime example of natural monopoly. Natural monopoly arises in a market where *a* company “can supply the whole market at a lower cost than two or more providers” (CA 2001: 57). In other words economies of scale allow *one* firm to be more efficient than if couple of firms were to compete in a given sector (CA 1998: 7). In case of network utilities the infrastructure, grid, is necessary for transmission and distribution of services (OECD 2000: 9). The grid constitutes a serious barrier to entry due to high costs and long time of its development, i.e. sunk cost, and smaller economies of scale of a potential new entrant.

For a long time airports, similar to network utilities, have been considered to be natural monopolies due to costly infrastructure (sunk cost and barrier for entry) as well as a conviction that economies of scale are greater when only one airport operates. However, it is increasingly recognised that airports do not have to be monopolies and competition may play a “broader and more effective role” (Bundeskartellamt 1997: 28-9; CAA 2008c: 5; CA 2001: 58) hence the opening quote that regulation only holds the fort until competition takes reign.

This is because of two reasons. Firstly, competition may be intra- or inter-modal (Malina 2006: 8), the former meaning competition between airports, while in the latter airports contest with other means of transport e.g. fast long-distance trains or a highway system. Intra-modal competition seems possible in the range up till 400-650km. Barcelona-Madrid train connection proved this successful. A train covers 630km distance in less than 3 hours, which makes it unbeatable for an aircraft if check-in times and commuting is included. The competition boils down then to the ticket price and availability of service, which with the rise of low cost carriers is not always on the side of railway. Intra-modal competition is also possible. This conviction lay at the foundation of UK regulator's order requiring the BAA, an airport group owner, to sell two of its three London airports in order to spur competition.

Secondly, economies of scale do not continue endlessly. Indeed airport's marginal costs decrease only up till a certain volume of passengers. When the threshold volume is exceeded then average costs are stabilised and when the volume grows further diseconomies of scales take over. However, the threshold amount varies according to different analysis and strongly depends on a character of an airport, e.g. airports that play a role of airlines hub enjoy economies of scale until higher values of passenger throughput. The numbers fall in the broad range from 1.5 million to 12.5 million (Pels 2000 and Productivity Commission in Niemeier 2003: 13; Müller, König and Müller 2008: 5) and cannot be conclusive. Nonetheless, they indicate that medium size airports may still enjoy natural monopoly position.³

Another aspect calling for airports economic regulation is a distinction made between transport infrastructure and transport services. While the former may often have natural monopoly characteristics, i.e. sunk costs, the latter is usually competitive (CA 2001: 58). Yet, if an airport is to exercise its market power few other conditions have to be met. Firstly, substitute means of transport are not easily available or consumers are not willing to use them. Secondly, the airport has to function close to its capacity limits, thanks to which demand exceeds supply and an airport may charge higher fees in those tight 'bottlenecks'. If those two are not met then economic regulation does not seem to be necessary. The European Commission, an initiator of the EU directive, considers the popular European airports with increasingly limited spare capacity, like Heathrow, as being able of setting excessive fees which in turn induce higher ticket prices (euractive 2008).

³ There is a fourfold division of airports according to the volume of passenger per annum. Largest airports with over 25mppa fall into category one, medium size 10-25mppa into category two.

Competitive means of transport are not viable in two analysed here countries, i.e. the UK and Ireland, since their insular character does not allow for easy on-land international communication. In Germany and Poland highways and trains do compete with airports, although, this does not completely alleviate airports' market power but only decreases it. Congestion-wise, many major airports in the analysed countries function during the peak hours close to their capacities, although not all of them. The congestion allows them exerting their market power (Müller, König and Müller 2008: 6-7).

To conclude, not every airport out there requires economic regulation since not each possesses market power and not every demonstrates capacity bottlenecks. On the other hand big aerodromes, which are congested during the peak hours wield monopoly power and for them economic regulation seems necessary. To define which airports should be regulated and how the regulation should be carried out remain beyond the scope of this work. Hereafter we analyse which institutional factors of the regulators influence the regulatory processes of airport charges and shape them the way we can observe.

3 WHO AND WHAT IS REGULATED

3.1 Who is regulated?

This chapter presents basic information about the regulation of airport charges. Firstly, it is explained which airports are regulated then which issues fall under the term “airport charges”.

The recent EU directive on airport charges specifies that airports serving more than five million passengers per annum (mppa) or the biggest throughput of passengers in a given member state will fall into the discretion of an independent regulation.⁴ Member states have two years to comply with this requirement

Airport	Passenger volume (mppa) 2008
Heathrow	67.3
Gatwick	35.0
Stansted	22.8
Dublin	23.5
Frankfurt	53.5
Munich	34.5
Hamburg	12.8
Düsseldorf	18

⁴ Here and below “airport” has a twofold meaning i.e. aerodrome and an airport managing authority, i.e. a legal person that is in charge of managing an aerodrome. For example for Dublin airport it is Dublin Airport Authority (DAA).

Hannover	5.6
Warszawa	9.4
Kraków	2.9
Katowice	2.4

Table 1. Exemplary passenger volume.

Source: Airports' websites and annual reports.

Those requirements will not have much effect on some of the analysed member states, like the United Kingdom or Ireland. Germany and Poland might be more strongly affected. In the United Kingdom an independent regulator, the Civil Aviation Authority (CAA), already regulates three designated airports. Those are three entities serving London, namely Heathrow, Gatwick and Stansted. They all belong to a private company, the British Airports Authority (BAA). Until 1st April 2009, state owned Manchester airport was also regulated by the CAA. However, the Secretary of State announced in January 2008 that Manchester would be de-designated since 1st April 2009 (Department for Transport 2008).

In 2001, the Aviation Regulation Act (2001) came into force and brought to life an independent regulatory agency: the Commission for Aviation Regulation, or CAR. That year, the Republic of Ireland regulated three of its main airports, i.e. Dublin, Cork and Shannon. However, after changes introduced to the aviation legislation by the State Airports Act (2004), Cork and Shannon were no longer included in the regulatory basket. Currently, the Dublin Airport is 100% state owned and operated by the DAA and falls under the scrutiny of the CAR.

Germany presently regulates all of its international airports (Niemeier 2002: 12), even those making a financial loss. Only five of eighteen German international airports are partly privatised, namely Düsseldorf, Frankfurt (Fraport), Hamburg, Hannover, and Saarbrücken. In four cases private shareholders hold minority stakes, and in Düsseldorf private shares amount to half. Additionally there is cross ownership amongst these five mentioned airports (Niemeier 2003: 3; ICAO 2008: 1). Remaining twelve are in governmental hands. All three levels of government, namely federal, regional (Länder) and local hold shares in the airports.

Finally, Poland, similarly to Germany, regulates charges at all its nineteen

international airports, regardless of the volume of passengers and their profitability.⁵ The state is either a sole or majority owner of all Polish airports, however, the latter demonstrate varying participation of central, regional – voivodeship, and local governments. Warszawa, Rzeszów or Zielona Góra are instances of hundred per cent central state ownership, which is exercised via the 'Polish Airports' State Enterprise. There are also instances of partial, minority, privatisation, e.g. Katowice, or Bydgoszcz.

From the above examples one can observe that state-ownership prevails, with diverse participation of three governmental levels.⁶ However, private management is not uncommon.

3.2 What is regulated?

In this paper the locus of the attention lies with the airport charges *regulatory process*, or more precisely with regulatory systems which are responsible for setting of those charges and *not* with their amount. Nonetheless, it is helpful to know what is regulated. The fees may be charged e.g.: per passenger, per ton of taking off or landing aircraft, noise level or aircraft parking (ICAO 2008: 2).⁷ In recent years there is also a trend towards regulation of airport service quality, through service level agreements (SLAs), which specify the minimum quality of provided by an airport services. In the UK quality indicators are embodied by the Civil Aviation Authority (CAA) in airport charges manuals and delivering services below an agreed level leads to financial “clawbacks.” An airport might have to forego up to 6% of its revenue (CAR 2008: 12). Irish regulator, CAR, is also seriously considering this option and a consultation process on that issue has already started. Some German airports also took steps towards regulating the service levels, yet it is not so developed as at the islands.

Having succinctly introduced the subjects and the substance of charges regulations let us raise the last issue of this chapter that regards an ultimate beneficiary of regulations. Indeed, it is not clear if those are customers, i.e. passengers, that stand at the pinnacle of the pyramid of regulators' priorities. Sometimes it seems that hierarchy is much flatter and other goals are at least equally important may it be airport or airline development, market mechanism itself or finally the well being of the economy of a given state or region.⁸ The lacking clarity of priorities is usually made up for by discretion granted to regulatory bodies.

⁵ The capital hub in Warsaw and eighteen regional airports (Council of Ministers 2003: 1-2).

⁶ The OECD offers a helpful and more elaborated overview of different ownership schemes (Oum and Fu 2008: 35-36).

⁷ Another dividing line of airport charges goes along their fixed or variable character. Fixed charges are always the same for example per tonne of landing aircraft, whereas adjustable charges may differ, e.g. fee per passenger may vary depending on quality level of services that are provided to a passenger.

⁸ For instance in the Civil Aviation Authority's response to the Provisional Decision on Remedies (January 2009) the CAA admits insufficient clarity of its mandate and proposes that it should be directed towards passengers (p. 33).

The following chapter explicates who the regulators of airport charges really are as well as sheds light on their both organisation set-up and institutional habitat.

4 WHO REGULATES?

A European family of airport regulators is characterised by different regulatory models and their diverse institutional design. On one hand governmental or quasi-governmental, on the other hand centralised or dispersed. In rough terms those two main dimensions describe the variety of airport charges regulators and only the dispersed-quasi-governmental cell of this two-by-two matrix remains uninhabited in our sample. This chapter highlights main institutional features of the regulatory set-up. Later these observations are coupled with the characteristics of the regulatory processes that are emphasised in the next chapter and serve as a basis for the analysis of necessary features of the regulatory schemes. Below we begin with describing organisational constructs of airport regulators that are operational in the four sample countries. Further on, we elaborate on institutional interconnectedness between the regulators and other critical actors.

4.1 State- or regional-level regulation

Regulation of airport charges may occur at two governmental levels either central or regional. At the national level, as observed in the sample countries, it might be carried out on one end by a governmental agency or a ministry, or on the another end by an independent regulator agency (IRA).

Central regulation benefits from uniformity of rules applicable in the whole country and arguably it is more cost effective than dispersed regulation, as a state regulator needs only one team of experts for any given issue. In turn, at the regional level, regulatory functions fall within the scope of regional authorities. Cost-efficiency ratio seems to be much lower in these cases because this scenario requires maintaining many overlapping expert teams, each for every region (Niemeier 2002: 12). Moreover, a patchwork of potentially diverse regulations resulting from separate regional schemes might impose additional burdens for operation of airlines or airports.

The UK and Ireland created independent regulatory agencies for the sake of economic airport regulation. British CAA and Irish CAR are central quasi-autonomous non-governmental organisations (quango) setting airport charges for the designated airports in the whole country. Although, as already mentioned, the CAR regulates only one airport, namely Dublin or DAA, whereas the CAA – three, while monitoring many more.

Poland also has a single central regulator, the Civil Aviation Office (CAO). It was brought to life in 2002 by the Aviation Law and is responsible for the charges regulation of all Polish airports. The CAO is a governmental agency falling under auspices of the Department of Transport to whom the Office is accountable. Finally, Germany applies a completely different solution. German airports are regulated and partially owned by regional authorities, usually a ministry of finance, which are independent from each other (Niemeier 2004: 184).

Level of regulation				
	UK	Ireland	Germany	Poland
Central	x	x		x
Regional			x	

Table 2: Level of regulation.

Concurrent carrying out of those two functions, namely ownership and control, raises the threat of moral hazard and impinges upon decisions credibility. In case an airport regulator is not independent from political forces it might be tempted to take a lenient approach towards an airport (Gillen and Niemeier 2006: 30). A good reason for doing that could be simply a *perception* that an airport may be an important node of regional economy, a gateway for tourism or a symbol of prestige etc. Even though it does not have to be true, and in fact some airports incur losses. Political considerations in such a situation would lean towards a suboptimal solution i.e. maintaining an inefficient airport, although it would be harmful for the general community. On the other hand a purely economic or efficiency oriented regulator would close, or reform, such an inefficient airport, subsequently preventing financial squander. However, closure or strict regulation, in the situation of the state ownership and control is unlikely.

4.2 Independence

The previous section depicted main features of the airport regulatory bodies and their organisational relations with national or regional governments. This part, in turn, talks about independence of the regulators and their systemic embeddedness. In terms of independence, emphasis is put on its *de jure* aspects, although where empirical evidence is sufficient *de facto* independence is considered. From four aspects of regulator's autonomy, one is more closely discussed here, namely operational independence. The other three, institutional, financial and personal independence, are briefly summarised as they are less intricate and do not have such a significant impact on the shape of the airport charges regulatory process. It is acknowledged that all four aspects interact with and mutually reinforce each other. Nonetheless, operational independence seems to matter the most for the subject, because regulator's autonomy in choosing its actions most directly affect the whole regulatory process.

On an institutional freedom axis the CAR and the CAA score very high, as they are fully distinct from the government bodies. The CAO and German regulators demonstrate low and very low institutional autonomy. The CAO is a governmental agency under auspices of the Department of Transport, whereas the regulators in Germany are simply organisational units in the regional ministries.

Finance wise both the CAA and the CAR again obtains good ‘marks’. Their resources come directly from the levies of the regulators on airports and airlines. In addition, the CAA and the CAR may incur debt after obtaining the consent of the minister.⁹ Germany and Poland stand at the low end of the spectrum. In Germany regulation belongs to the regional ministries, which are fully financed from regional budgets and there is no space for financial independence. In Poland, the CAO obtains all its resources from the central government. Until 2008, financing amounted to 10% of yearly revenues of the regulating body. Currently the budget is set by a ministerial order on an *annual* basis, which constitutes a step backwards in terms of independence to the previous state of affairs.

When it comes to personal independence only the CAR’s commissioners have legally prescribed minimum and maximum lengths of their terms (respectively 3 and 10 years, or two terms)¹⁰ and the Parliament is involved in the appointment and dismissal procedure. In the UK the secretary of state has much more to say and the Houses do not participate in the process, still the commissioners are well protected from the political influence. In Poland in March 2009, the appointment rules of the CAO President were changed and enhanced personal independence of the regulator. In Germany, personal independence is low as the regulatory issues are dealt with by the ministry staff.

Level of regulators’ independence*				
	UK	Ireland	Germany	Poland
Personal	H	VH	L	A
Financial	H	H	VL	L
Institutional	VH	VH	VL	A
Operational	A	H	L / VH**	L

Table 3: Level of regulators’ independence.

* VL - Very low, L - low, A - average, H - high, VH - very high.

** Real independence L for the cost-based and VH for the price-cap airports.

⁹ Section 10 of the UK Civil Aviation Act 1982 and section 25 of Irish Aviation Regulation Act 2001.

¹⁰ Section 11 of Aviation Regulation Act 2001.

4.2.1 Operational

Last but not least aspect of independence to be discussed here is operational autonomy: a regulator's freedom in choosing their own instruments and operations. Each body discussed here is somehow restrained in this area. It seems that the CAR is entrusted with the greatest amount of confidence and freedom, followed by the CAA. Poland and Germany, who are more restricted, are found behind the leaders, though Germany presents mixed picture.

4.2.1.1 Ireland

The CAR demonstrates high degree of operational independence in comparison to other considered here regulators. Its powers encompass airport and air traffic charges regulation. Irish regulator is accountable only to the Houses of the Oireachtas (the Parliament) to whom it has to report its financial situation on an annual basis. *De facto* the CAR does not share its responsibilities with other regulatory institutions and most importantly it sets the airport charges according to its own discretion as well as decides if the DAA operates in a single- or dual-till environment.¹¹ Although *de jure* the Competition Authority (CA), an anti-monopoly agency, may also throw its three pennies into the aviation market when free competition is threatened. The CA's relationship with the CAR, as well as with economic regulators of other sectors, is spelled out in very general terms by the so-called Co-operation Agreement, 2002.¹² Nonetheless, the CA impact on aviation market is benign.

However, there is no rose without thorns, and the CAR also feels limits to its independence. The main restraint consist in a fact that this is the Parliament that designates, which Irish airports fall under regulator's scrutiny. In 2004 the Oireachtas de-designate Cork and Shannon airports and currently the CAR deals only with the DAA. Furthermore, this was also the Parliament that ordered a division of an airport group into three separate entities, namely Shannon Airport Authority (SAA), Cork Airport Authority (CAA) and Dublin Airport Authority (DAA). The CAR could not have made such a decision on its own.

Another infringement on the CAR's autonomy is a direction that a minister of the Department of Transport may give to the regulator under section 10 of the Aviation Regulation Act 2001. Section 10 spells out:

“(1) The Minister may give such general policy directions (including directions in respect of the *contribution of airports to the regions* in which they are located) to

¹¹ This distinction is discussed in the following section: 5.1.1.

¹² Agencies should strive for good co-operation, avoidance of duplication and reasonable consistency between decisions (Co-operation Agreement between the Competition Authority and the Commission for Aviation Regulation, December 2002).

the Commission as he or she considers appropriate to be followed by the Commission in the exercise of its functions.

(2) The Commission *shall* comply with any direction given under subsection (1)”
(the emphasis is mine)

In fact the minister has not abused this prerogative, and political directions have been issued twice so far. Once in 2003 and another in 2005. Both regarded the same issue, namely the Minister advised the CAR to increase a price cap value which was being planned by the regulator. That move meant increasing airport’s revenues, which then were to be channelled towards the airport’s infrastructure development.

Wrapping up, it might be claimed that the CAR enjoys a high degree of operational independence, however, a legal loophole for potential political intrusion does exist and makes the regulator vulnerable. Despite those limitations though, Irish regulator does have significant operational autonomy

4.2.1.2 UK

The Civil Aviation Authority also holds significant statutory rights, as it was designed to regulate the first in the world fully privatized airport group. However, unlike its Irish counterpart, CAA’s institutional habitat is populated more densely with veto players and advisory bodies. For instance British airport watchdog has to closely cooperate with the Competition Commission (CC), an anti-monopoly IRA that exercises much greater impact on airport industry than the CA in Ireland. Main CC’s influence is reflected in the fact that the CAA has to refer charges proposals to the CC and consider the latter’s opinion. Despite being an independent agency, the CC’s statutory act, Competition Act 1998, reveals its significant personal, financial and operational dependence on the Secretary of State.¹³ That makes the CAA’s work more vulnerable to political influence through the fact that it has to work hand in hand with a a more politically vulnerable body.

Designation or de-designation of an airport for economic regulation is a political decision taken by the Secretary of State and the CAA has not much to say in this area. Further CAA’s operational dependence could also be observed when it proposed to switch to the dual-till regulation at the British airports. The CC did not support this viewpoint, consequently, the idea was dropped for the time being (CAA 2003: 13). Also a recent decision about splitting the BAA’s ownership in London area as well as in Scotland was made by the CC and the

¹³ In accordance with the Competition Act 1998, the Secretary of State grants the CC with financial resources according to his or her estimations of the CC’s needs. Additionally the CC has to present its yearly financial statement to the Secretary. Moreover, the Secretary appoints and dismisses members of the CC.

CAA had to accept it (Financial Times 2009b). Although the CC entrusted the CAA with the implementation of this decision by arguing that there was no necessity of creating yet another layer of the airport sector regulation by additional body, i.e. the CC, since the CAA was responsible for that (CC 2009b: 2-3). All in all in comparison to the CAR the CAA's mandate is quite limited and both the CAA and the CC admit those constraints (CC 2008: 3). Recently the aviation regulator demanded more flexibility for its action and greater precision in spelling out its primary duties. As a response the minister said that the "interests of consumers rather than of airlines should be at the heart of the *future* regulation of the largest UK airports (Financial Times 2009a).¹⁴ As it seems then the current limited scope of the CAA's action may change in favour of the regulator in a new regulatory system that the government foresees.

4.2.1.3 Germany and Poland

While both the Irish and UK regulatory systems for airport charges evolve around central independent agencies, with respectively high and average degree of institutional independence, Poland and Germany present significantly different pictures.

In Poland, the CAO, despite its governmental roots, is relatively independent, e.g. it possesses freedom to accept or reject charge proposals without consultations with other regulatory bodies. Indeed, the regulator co-operates with the Office of Competition and Consumer Protection (OCCP), an anti-monopoly agency. However, unlike in the UK, the co-operation seldomly takes place and does not apply to charge setting, which allegedly strengthens the regulator. Nevertheless, the CAO's scope of action is much more limited than the CAA's one, which strongly delimits the Office's operational autonomy, e.g. it is not empowered to carry out an economic evaluation of the proposed airport charges and may only verify legality of the fee setting procedure. It also demonstrates no discretion over the single-/dual-till issue or the choice of the economic regulation methodology.

The German system of regulatory control of airport charges is most strongly embedded into the fabric of the government. Regulatory duties are carried out by ministry workers, who fall under scrutiny of the regional government. Although, the federal structure of Germany limits the central government's influence on the work of local ministries, the federal Department of Transport may block the charge setting process when e.g. ICAO noise norms are violated. However, the federal ministry usually takes a lenient approach (Niemeier

¹⁴ Current objectives of CAA sound as follow: to further the reasonable interests of users of airports; to promote the efficient, economic and profitable operation of such airports; to encourage investment in new facilities at airports in time to satisfy anticipated demands by users of such airports; to impose the minimum of restrictions (CAA 2009a: 5).

2002: 7). Similarly to the other analysed countries, the German anti-monopoly agency, Bundeskartellamt, has its say in the regulation of airports in cases when monopoly law is infringed upon.

In Germany designation of an airport for economic regulation lies beyond the scope of the regulators. Moreover, at the cost-based airports the regulators apply a dual-till approach because it is conjectured from the law that the regulators do not have legal powers over the non-aviation functions of the airports, i.e. retail (Müller, König and Müller 2008: 12).¹⁵ This depicts the German regulators as dependant and weak bodies. On the other hand though, at the private framework agreement (PFA) aerodromes, the dual-till approach as well as the price-cap methodology were introduced thanks to the acceptance of the regulators.¹⁶ Although, it is hard to believe that those decisions were taken exclusively by the regulators themselves and without political steering from the Länder governments. Nevertheless, such a regulatory discretion makes clear that *de jure* operational independence of the German regulators, thanks to the very general legal rules, is very high but only ones which switched to the price-cap systems took advantage of that.¹⁷ *De facto* though a majority of the German regulators, i.e. the cost-based airports, act in a very limited range of their prerogatives because they rely on a traditional passive regulatory model, where the functioning of the regulator is confined to accepting or rejecting the charge proposals and checking the process legality.¹⁸ Thus it might be argued that a broad wording of the aviation law constitutes a hindrance for the regulators to take initiative.

5 HOW ARE CHARGES REGULATED?

Knowing who regulates what, let us now move forward to the issue of how charges are regulated and what the regulatory process looks like. As was the case with the institutional design, also in this area the sample countries apply a range of different solutions.

5.1 Economic-focus methodologies

Rate-of-return, incentive based regulation and light handedness constitute three main methodologies for airport charges regulation (Forsyth 2003). The first two are the most important and locus of attention remains with them. Another major economic dimension that

¹⁵ Hamburg was the first airport in Germany to apply the dual-till in an overt manner and include it into the agreement between the airport and the users.

¹⁶ More details about PFAs follow in section 5.5.

¹⁷ Paragraph 43a of Luftverkehrszulassungsordnung, came into life 2007, states that an “airport operator must seek approval for the charges for starting, landing and parking of aircraft and for the use of passenger facilities from the regulatory authority”.

¹⁸ This model is described in the section 5.2.1.

cuts across this trio is a distinction between single-till and dual-till regulation and let us start with this aspect first.

5.1.1 Single-till and dual-till

Single-till means that the airport charges are calculated on the basis of airport's revenues obtained *both* from aeronautical (core) and retail, or commercial (supplementary), activities. In the case of the single-till regulation, airport revenues do not have to be separated into aeronautical and retail, which makes the whole calculations easier. Moreover, this approach allows cross-subsidising of airport charges by a commercial sphere. Simply put, an airport that earns considerable profit from its commercial activities, may channel parts of those profits towards its core activities, for which airport charges are paid. As a result, an airport has to earn less on its core services to break even. Consequently, aerodrome users can pay lower fees, i.e. airport charges, for the aeronautical services.

On the other hand, the dual-till regulation treats aeronautical and commercial revenues *separately* and does not allow cross-subsidising between those two areas. As a consequence, to break even an airport has to recover all its aeronautical-related expenditures solely from the airport charges. Calculating airport charges under this system is more complex as it requires exact separation of costs and incomes according to the aeronautical-retail dividing line. This might turn out to be a complex operation which imposes significant administrative burden on an airport. However, to some extent airports do carry out such complex book keeping for the sake of their own analysis, which suggests that the dual-till system would not be such a problem for them. Having said this, the single-till system can also add an administrative burden to the aerodrome managers. Regulators operating in the single till environment still require sets of detailed information and airports have to keep highly elaborated accounts for many different contingencies.

The separate treatment of aeronautical and commercial revenues is *de facto* applied at Polish and German airports due to the legal reasons explained above, whereas UK and Irish aerodromes operate in the single-till environment thus their retail revenues cross subsidise their aeronautical activities.

5.1.2 Cost-based model

Most German and all Polish airports apply the rate-of-return, or cost plus, method to calculate the amount of airport charges. Klenk (2004: 127) summarises the cost plus model as “a method to calculate prices solely on the basis of cost incurred plus a certain amount of return on the capital employed without the need to set prices according to competitive influences.” There is, however, a significant difference between Poland and Germany, namely the former

relates charges estimation to the historic costs, i.e. the previous year, while the latter country relies on estimations of the next financial year expenses. Polish regulation is problematic for airports because it does not foresee a possibility of pre-financing infrastructure development of an airport. Additionally it also creates a significant time lag in recovering costs of investments, which constitute great financial difficulty for an airport.¹⁹ Moreover, as a regulator employee explained in the interview, the CAO does not regulate airport charges *per se*. It rather checks the *legality* of the process of the charges levying by an airport and the *correctness* of charges calculation, i.e. if they reflect the airport's cost base.

The German method based on estimated future costs is more airport-friendly. Niemeier (2002: 9-12; 2003: 5-7), a supporter of a price-cap solution, lists the whole set of shortcomings of the German rate-of-return scheme. The cost-based system may, amongst other things, lead to gold plating, i.e. overspending e.g. on building luxurious terminals, because in the end the costs are passed onto the airport users. It does not provide incentives for productivity increases and efficiency savings. Moreover excessive charges result from inflation rate adjustments of the charges and failing to account for marginal costs, which to a certain volume of passengers, decrease due to economies of scale. Additionally, this system contributes to an ineffective charge structure.

5.1.3 Incentive based schemes

Incentive based systems, e.g. price-cap or revenue-cap, are utilised in Ireland, the UK and Hamburg airports, although three other German airports have had experiences with this approach as well.²⁰ The incentive scheme differs considerably from the cost-based method. First of all, in a price/revenue-cap system maximal fees/total revenue are clearly spelled out. This solution does not force a structure of airport charges onto airport management, like the rate-of-return does, and thus encourages airports to adjust their charges structure in their quest for efficiency saving.²¹ Consequently, an airport freely designs its charge structure to attract more traffic and gain more profit. A formula $CPI-X$ (or $RPI-X$ in the UK) is applied. CPI stands for consumer price index (RPI – retail price index) which accounts for inflation. A factor X reflects an *expected* productivity growth of an airport in a given year. However, X is based not only on a given airport's past performance, but also on performance by other similar airports (Bernstein and Sappington 2000: 63-65). Thus X acts as a surrogate for competition. When an airport wants to realize its profits it has to improve its efficiency by a

¹⁹ Interview with a Katowice-Pyrzowice airport employee, who deals with an issue of airport charges.

²⁰ Those three were Düsseldorf, Fraport, or Frankfurt airport and Hannover.

²¹ After introducing a price-cap system in German airports there are noticeable shifts in charges structure. An amount of fixed charges (landing, take-off etc.) declines while the amount of adjustable charges (e.g. passenger fees) increases.

given ratio (expressed as a percentage). If it manages to enhance the productivity even beyond the X factor then it keeps profiting from this development till the end of the regulatory period.²² In a new period a new value of factor X is set and the efficiency struggle starts again from scratch. An emerging threat here is that an airport, while allegedly increasing its efficiency and decreasing costs, may lower the quality of the services provided. Hence quality monitoring and service level agreements backed by fines for breaching the quality levels are vital for this regulatory system.

Incentive schemes at the chosen airports			
Airport	Formula	Period	Lasting
Dublin	CPI + 4%	2006/07 – 2009/10	At least 4 yrs
Stansted	RPI + 0 / 1.63%*	2009/10 – 2013/14	5 yrs
Gatwick	RPI + 2%	2008/09 – 2012/13	5 yrs
Heathrow	RPI + 7.5%	2008/09 – 2012/13	5 yrs
Hamburg	CPI+2%**	Jan.2001 – Dec.2004; Jan 2005 – Dec. 2009	5 yrs
Düsseldorf	Revenue-cap**	Dec.2004 – Dec.2008	4 yrs
Fraport	CPI-X**	Apr.2002 – Dec.2006	5 yrs
Hannover	CPI+10%**	2003 – 2007	5 yrs

Table 4: Incentive schemes at the chosen airports.

Source: CAA 2008a: vi; CAA 2008b: 5; CAA 2009b: 8; CAR 2008: 4; ICAO 2008: 2-3, interviews.

* Depends on year of the regulatory period; year 2010/11 0%, later 1.63%

** Airports using additionally a sliding scale mechanism

5.1.4 Light-handed regulation

Light-handed or grim regulation relies on a credible threat. An airport is not regulated *per se* but only monitored and it levies charges at its own discretion. Nevertheless, it is expected to charge at reasonably low levels out of the fear that excessive fees will lead to regulator's taking over the pricing mechanism. Such an airport cannot unreasonably discriminate amongst its users nor abuse its bargaining power by cutting its fee levels, which would negatively impact competing airports. The light-handed model applies to the UK airports whose turnover exceeds £1 million annually and which are not designated for the price-cap system (CAA 2009a: 1, 4).

5.2 Duration of the regulatory period

The duration of a regulatory period plays an important role in the charge setting mechanism. Time is of the essence for the price-cap schemes where an airport earns the efficiency gains only to the end of the given period. Thus, airports have the greatest incentive to introduce

²² An issue of regulatory period duration and related problems are discussed in the section below.

efficiency increasing innovations at the beginning of a regulatory term. Trade off is clear, a long period may cause users to pay excessive fees for a significant time without consuming fruits of innovation. On the other hand, a too short period does not invite novelties, especially costly ones (CAR 2008: 5), e.g. new infrastructure upgrading luggage handling. Undoubtedly though multi-year long periods offer airports and airlines a certain stability and predictability of their environment, which is vital for the mid-term development strategies. The UK contends that optimal duration lasts five years. Ireland initially took the same stand but in 2004 the Parliament amended the law, which now stipulates that a regulatory period lasts at least four years. Hence the DAA is regulated in quadrennial cycles. German airports applying the price-cap utilised both options (Table 4).

The cost-based airports usually apply annual periods, however, it does not mean that charges change every year. For instance in Poland a price list of airport charges is set without any sunset clauses. It remains in force until a new price list is announced.²³ This indicates that there is no automatic indexation of charges and airports as well as users and the regulator have to take this into account while setting charges. Although basing on historical costs, as is the case in Poland, this does not allow much space for creativity here.

5.3 Transparency

The next important aspect of the airport charges regulatory process is its transparency. Smooth and abundant information flow between parties may significantly facilitate reaching the agreements regarding airport charges. The consultation process usually includes a regulator, airports and airlines and/or associations of those and will be discussed in more detail in the following section. The EU directive enacted in March 2009 demands enhanced information flow between regulators, airports and their users. On a regular basis, they are obliged to share data pertaining to methodologies of charges calculations, operational costs and forecasts, development projects e.g. major infrastructural investments etc.

Both UK and Irish regulators demonstrate a high level of procedural transparency, which amongst other things, fulfils a legitimising role for those IRAs. They publish all their opinions, analyses, decisions etc. as well as responses and analyses done by airports and airlines. As a result, the information asymmetry between parties, e.g. on financial issues, is to some degree alleviated and compromises are easier to reach.

²³ In Kraków current charges are operational since November 2004, for Warszawa since September 2005 and for Katowice since December 2008 and the previous price list came into life in December 2005.

In Poland and Germany the transparency level leaves much to be desired. For instance German regulators, at the cost-based airports, do not reveal reasons for approval or rejection of airport charges (Niemeier 2002: 9). Information flow between interested parties is also impeded. As a result of this, Lufthansa bought almost 10% shares in the Fraport in order to obtain information about the airport functioning (Gillen and Niemeier 2006: 19).

In Poland the CAO is not obliged to reveal grounds of its decisions. On the other hand, since the regulator, airports and the main airline belong to the state it might be suspected that everyday work contact serves as a channel for passing on information. The interviews carried out for this paper supported the view that casual contacts at the working level take place, but they did not reveal unofficial negotiations between airports and the regulator before the official announcement of the consultations. This brings us to the consultation issue.

5.4 Consultations

Despite manifold differences that the discussed here countries exhibit in their regulatory processes, an important common thread may be found, i.e. consultations. The ICAO (2009) recommendations as well as the newly enacted EU directive on airport charges underline a pivotal role of consultations in the regulatory process. In fact the directive is strongly indebted to the ICAO solutions in terms of deadlines and processes. Henceforth references are made to the EU directive, as it is a legally binding law.

In all four countries consultations play an advisory role and are not legally binding for airport management, though they are a mandatory element of the regulatory process. The *acquis communautaire* renders such solution correct, as long as users may appeal to an independent supervisory authority, which in a given country is responsible for oversight over economic regulation. However, when taking into account discussed differences in a degree of transparency and information flow, one may suppose that consultations are ascribed various weights in the sample countries.

Another telling difference pertains to a phase of a whole regulatory process where input from consultations is required. Indeed the new directive incorporates ICAO's recommendations that an airport has to not only inform users about planned changes at least four months prior to the incorporation of changes (Article 6), but also hold consultations on the proposed changes. This does not sound very long because e.g. in Ireland, where the price-cap is applied, the negotiations begin a year or more in advance of a new regulatory period. In fact the earlier in the process of the charges setting users' input is asked for, the greater the chance that it will be considered and reflected in the final decision. However, the

administrative burden put on the airport also grows correspondingly. In the UK and Ireland consultations are well developed and are conducted over lengthy periods thus allowing public discussion and lively exchange of opinions and arguments, which can be traced on the websites of the CAA, CC and CAR.

In Poland and at German cost-based airports, the consultation periods are much shorter and less intensive. In Poland an airport asks users for a non-binding opinion about proposed changes at least one month before submitting the proposal to the CAO, and the proposal has to be filed with the CAO at least three months prior to its entry in force (Article 77 of Polish Aviation Law). The CAO verifies if the consultation took place and may ask airport users for additional opinions, however this is not legally required.

All in all, it seems that users do not officially have much time to influence the proposal. On the other hand, during an interview with a Polish airport employee who handles the issue of charges, he indicated that one month is a long enough period for consultations. Reaching agreement so quickly points towards two possibilities. Firstly, the current regulatory process does not induce long and thorough official negotiations and quick agreements are preferred; or secondly, unofficial negotiations take place. Yet the latter notion is rejected by airport interviewees. In fact extensive negotiations between parties could be eventually undone by a final decision of regulator, who is not involved into the negotiation phase. Secondly, the speed hints that one of the parties enjoys more market power and may exert its will upon other parties to an agreement. The latter implication was confirmed in another interview, with a person working at Katowice-Pyrzowice airport. The interviewee pointed out that airport charges introduced in December 2008 were lower than in the previous price list, despite the airport opening a brand new, thus more expensive, terminal. Market power of air carriers and their credible threat of service withdrawal were suggested to be a main reason for such a development. In fact the competing airport, Kraków-Balice, is only 75 km away from Katowice or one hour drive. Another interview with a Kraków airport employee revealed that the airport was currently waiting for a CAO's decision about a new price list of airport charges. Similarly as in Katowice, Kraków also lowers its charges due to the pressure from the air carriers. Even the capital hub had to surrender to the pressure of the air carriers and introduced a new pattern of discounts in April 2008. An interviewee at Warsaw airport pointed out the fact that this discount scheme had been accepted by the CAO without official change in the price list and such an option is not stipulated in the law. It happened despite initial negative reaction by the regulator to this proposal. This situation is explained by the CAO's anxiety about politicisation of an issue in case they are rejected or blamed for hampering the airport fee cuts.

The situation looks differently at the German price-cap airports, e.g. Hamburg, where consensus of all consulted parties was required, including airports, airlines, other users and representative organisations of the latter. This specific solution emerged due to the unique character of the private framework agreements, which are discussed in the section 5.5. on top-down and bottom-up regulations. Having finalised the private legal contract among the interested parties, it was later translated into the public agreement via the regulator. In this setting none of the parties wielded ultimate power to impose its will upon the others and no deadline for agreement existed. Thus negotiations sometimes took a long time, e.g. at Hamburg airport it took one and a half year, and some aerodromes failed to reach a compromise, e.g. Berlin (Klenk 2004: 132-3). The consultations played a pivotal role, however, due to the lack of power to impose decisions, this scheme might prove inefficient and lead to wasting resources if an agreement is not reached.

5.4.1 Active and passive regulators

Finally, in the UK and Ireland the regulators play an *active* role in consultations and through their own analyses and disclosure of information they steer and stimulate the discussion on airport charges development in a following regulatory period. In the end those are the regulators that set up the maximum level of charges because their determination for a new period belongs to their regulatory duties. The new charges are operational even if they were to be challenged by an airport or an airport user. This means that if there is a disagreement between the regulator and an airport or a user, the new fees can be imposed by the regulator. In Germany or Poland, charges cannot come into force without approval from the regulator, yet the latter also cannot force airports to change their charges. Regulatory process is not time constrained as the charges do not have to change every given period. This situation reveals that in Poland and at German cost-based airports the regulators can be, and are, much more *passive*. First of all they only accept or reject the proposed airport charges without the ability to prescribe their optimal level. However, in Germany airports unofficially contact regulators before launching a new charges proposal in order to sense their attitude towards changes to be proposed (Müller, König and Müller 2008: 11-12). In Poland, such a method is not practised, though might be suspected. Moreover the regulators in Germany and Poland do not fulfil the function of an open discussion facilitator since they do not disclose information to the public or even between the involved parties. Simply put, the regulators in those two countries are on the receiving end of conversation.

5.5 Top-down and bottom-up regulations

The top-down or bottom-up approach constitutes yet another aspect that may help us to distinguish between regulatory approaches to setting airport charges. In this context, “top-

down” means that the regulatory process follows the aviation legislation and a procedural framework explicated in legal acts. All four countries, with certain exceptions, apply this top-down model.

The “bottom-up” method is understood here as a process, which could be observed at several German airports applying the price-cap regulations. Namely an airport and its users enter a private law contract (the so-called private framework agreement or PFA) describing their mutual obligations and duties and regarding, amongst others, issues about how airport charges should be calculated and set up. These private contracts may be constructed completely distinct from the public law solutions, which then are translated into the public agreement by the regulator, thus substituting the public law. Thanks to them Hamburg was the first instance of explicitly regulated dual till airport in Germany. Additionally, the cost-based solution was replaced with the price-cap method established for a five-year period. Such long term agreements are beneficial for both airports and users as they provide them with stability and predictability of the working environment in the mid-term and allow developing longer than one year strategies (Oum and Fu 2008: 5). Of course risks taken in the long term planning may be greater than in one-year planning thus risk sharing rises to the most important issue of such agreements. Nowadays, from five German airports that attempted PFAs, only one, Hamburg, still operates within this framework, and other airports quitted those private deals. Main reason seems to be an asymmetric power exercised by the involved parties during the negotiations of PFA details and resulting from that unequal risk sharing, which bigger part fell on weaker parties (Müller, König and Müller 2008: 16-18).

5.6 Patchy outcomes of the regulatory solutions

Finally, let us briefly look at the evidence about the efficiency and effectiveness of these analysed regulatory schemes. Gillen and Niemeier (2006: 26) state:

“The effects of the different regulatory systems for airports have not been assessed.... The effects of price cap regulation on price structure are even less well empirically studied..... Another less well-researched effect is the effect of different regulatory systems on investment behavior of airports. While rate of return regulation might lead to overinvestment price cap regulation has been criticized by Helm and Thompson (1991) of leading to underinvestment.”

Although the evidence about the efficiency and effectiveness of cost-based and price-cap systems is not conclusive and hard to compare, it might still be useful to look at some of their outcomes.

In the UK Heathrow and Stansted are said to have too small a capacity due to the under-investment into infrastructure in recent years (CC 2009a: 5). Additionally, service quality has dropped there. These are failures of economic regulation which has not created

proper incentives for the investment and provision of proper services. For those reasons the regulation will now be partially replaced with competition since the CC ordered the BAA to sell two of its three London airports, as well as one of its Scottish businesses, where fees were found to be too high, according to the regulator (FT 2009b).

Irish DAA argues that the CAR agreed to the infrastructural expansion of the airport too late, which led to a high congestion level at the airport thus a decline in service quality. Moreover, information obligations imposed by the regulator are burdensome for the airport.

At Polish airports, the cost-based system relying on historical costs imposes difficult conditions for any kind of infrastructural investments, as they can be incorporated into the charges only after a significant time lag. In Germany, on the other hand, the cost-based scheme leads to overspending on infrastructure and resulting goldplating. Since airports and airlines prefer entering private agreements in order to replace a traditional regulatory model, it might be argued that the latter is not working well for the interested parties.

As we can see, regulatory processes in the UK, Ireland, Germany and Poland are very diverse. Two main dividing dimensions, from an economic point of view, are price-cap vs. cost-based schemes and single-till vs. dual-till approaches. Other important aspects, of a more institutional nature, are: the duration of the regulatory periods; degree of transparency and information flow; consultations; and top-down or bottom-up methods of creating contracts. The above-presented data provided the basis for delving into the analytical part of this work, which is presented in the next chapter.

6 SYNTHESIS

The previous chapters have presented data about three vital aspects of the airport charges regulation, i.e. firstly, addressees and content of regulation, secondly, characteristics of regulatory bodies and finally, features of the regulatory process. This part tackles the question of how the organisation and institutional set-up of an airport regulatory authority may influence the process of levying airport charges. Firstly the chapter aggregates the data and classifies the discussed regulatory processes into two broad categories. Next a threefold division of potential institutional causal factors is proposed, namely a governmental level where a regulator is positioned, independence of a regulator and strength of the regulating authority. The below analysis looks at each dimension separately and attempts to indicate factors that influence the regulatory process in the greatest degree. Additionally an ownership variable is briefly examined because it seems to be an important element contributing to the shape of the regulatory process.

Empirical data articulated in the previous chapters allows assigning the regulatory processes of airport charges regulation into two broad categories. Those are low-powered and high-powered systems. Power refers here to not only system's capacity of alleviating problems related to asymmetric information and asymmetric power, but also ability to push towards solutions that favour efficiency saving and productivity growth while maintaining service quality. Mentioned asymmetries arise among involved parties, i.e. airports, users, their representatives and regulators, and strongly influence the regulatory process and may lead to sub-optimal results. The table below summarises the data about the cost-based and price-cap systems and indicates that the cost-based model falls well into the low-powered group, whereas the price-cap regulation seems much more fitting for the high-powered type. However, it appears evident that German price-cap solutions did not endow the regulators with comparable capacities as the UK or Ireland did. For that reason the German price-cap falls neither to the high- nor low-powered mode.

	Cost-based	Price-cap
Single- / dual-till	Both possible, but dual till <i>de facto</i> , although single-till seems easier to control and advised by the ICAO (EU does not specify).	Both possible. Airports favour dual-till, yet in Ireland and the UK single-till environment. The CAA proposed dual-till but rejected by the CC.
Consultation: length	Short. ICAO and EU: 4 months PL 1 month for the users and 3 months for the regulator.	Long. Over a year: Dublin, the UK, Hamburg.
Consultation: participants	All interested parties.	All interested parties.
Consultation: phase when users' input needed	Poland: firstly the users then the regulator. Informal pressures and prior communication <i>suspected</i> . Germany: firstly unofficially with the regulator, then with the users and again with the regulator.	During the whole process all the parties involved. Initiation of the process by the regulator in the UK and Ireland, in Germany private initiative.
Transparency of the process of levying the charges	Low to very low. Criteria not very clear	High to very high. In UK and Ireland criteria and methodology well known and published. In Germany lower degree of transparency.
Information availability for interested parties and third parties → information asymmetry	Low. It bases on voluntary information sharing. Not very public. In Germany reasons for price list rejection are not published → high information asymmetry.	High. Information and analyses publicly accessible at the websites in the UK and Ireland. In Germany data not published → low asymmetry in the leading countries in Germany not mitigated by the regulator.
Alleviation of participants' asymmetric power	Low. Big airports and airlines enjoy market power. The regulator checks legality and not efficiency.	Average to high. The regulators try to curb market power of airports. Not only legality check, but also due regard to efficiency.

	Cost-based	Price-cap
Number and character of the regulated airports	High – even small aerodromes regulated.	Low – only those with market power. In Germany only Hamburg (not the biggest airport) under the price-cap.
Ownership	Public and private-public with minority private shares.	Public, private-public with minority, private.
Top-down / bottom-up	Bottom-up: the regulators accept agreed-on price list of charges.	Top-down: the regulator steers and imposes charges (UK, Ireland). Bottom-up: the regulator accepts deals between airports and users (Germany).

Table 5: Characteristics of the low- and high-powered systems.

6.1 The level of regulation

The presented data points out that the placement of the regulator at the regional or national level is not a strong explanatory variable that could predict which regulatory outcome would prevail. In the sample cases the central regulators operate in both the high-powered system in the UK and Ireland where single-till mechanisms are imposed and in the low-powered one in Poland where *de facto* dual-till operates. Both outcomes are then possible. In turn, in Germany the regional authorities are submerged in the low-powered schemes and dual-till is applied across the board, which constitutes a similar solution to the one in Poland. Thus the state or regional level of regulation does not indicate any clear direction for the airport charges regulation process. Nevertheless, it might be contended that in cases of Germany and Poland a kind of agency capture takes place. The regulators there do not focus on the economic regulation of airports, but are strongly influenced by both their ownership rights (or ownership rights of the government) and co-responsibility for economic performance of a state or region (moral hazard problem). The only implication that might be drawn from this observation points towards a correlation between the ownership rights and application of the dual-till method for calculation of airport charges. It is because the dual-till seems to be more lenient for airports in terms of the efficiency and productivity and does not impose such strict economic restraints as single-till does. In fact choosing a dual-till environment by German aerodromes, which engaged into PFAs, indicates that this solution is preferred for them. Let us then turn now to the issue of privatisation.

6.2 Ownership

The moral hazard issue related to the ownership and regulatory functions might be interpreted in the way that regulators are less stern when they hold simultaneous ownership rights, more or less directly. Consequently, an idea suggests itself that, when taking into account credibility thesis, the private airports should be more strictly and independently regulated than

the public ones. The independent regulator is to demonstrate the credibility of the decisions for the sake of attracting investors to the aviation sector.

Explanatory power of privatisation and the credibility thesis holds firm in the cases of the UK, Germany and Poland. British private airports function under the close control of the independent CAA within the high-powered price-cap system. The state owned Manchester airport has just been excluded from the regulator's scrutiny in April 2009. Polish and German airports, where public ownership is the rule, apply low-powered regulatory schemes by government-dependent authorities. Regulatory credibility is not pivotal since the ownership remains in public hands, and thus low-powered regulation suffices. On the other hand, at five partly privatised German airports regulatory changes have been launched, i.e. PFAs with dual-till and price-cap, but only Hamburg still carries on with them. However, application of these two features did not automatically turn the regulatory scheme into a high-powered type because it was not connected with granting more right to the regulators. Although it might be claimed that the airports under the PFAs operated somewhere on the verge of two proposed regulatory types. Hence these airports do not deny privatisation explanation that the public ownership relates to the low-powered solutions.

The Irish case dims this previously clear picture of the causal role of the ownership factor. The Dublin Airport Authority is a 100% state owned company yet functions in the high-powered system with an independent regulator as its watchdog. This situation has been in place since 2001 despite initial remarks that the DAA would be privatised after the enactment of the Aviation Regulation Act.

Those observations by no means deny the relevance of the ownership factor. In fact high-powered regulation and privatised airports should go hand in hand as the big airports show signs of natural monopoly. It is also hard to believe that the state would allow uncontrolled development of the aviation industry, especially that the big airports may exercise their market power and apply monopolistic practices. Nevertheless, the ownership cannot serve as an exclusive explanatory variable for the adoption of the high- or low-powered regulatory model.

6.3 Independence

Hitherto we elaborated on different dimensions of the regulators' independence and operational independence appears an important factor in the shaping of the regulatory process examined here. High operational autonomy allows the regulator to choose the instruments and actions it would like to execute, e.g. a decision about single- or dual-till, price-cap or cost-based methodology, imposing information obligation and transparency etc.

The low-powered system does not demand a high degree of independence since the regulator's role is limited and the latter usually does legality and procedural checks that are perfectly suitable for governmental units. Neither too much of operational discretion nor credibility is needed here.

The situation differs in the high-powered system. Indeed, from a technical point of view there is no difference if highly penetrating regulation comes from the government or from the IRA, since both may create suitable rules. However, the credibility argument suggests that IRAs might be more appropriate for market regulation, where long-term commitment is needed for the efficient running of a business. In other words, a politically steered regulator might not deliver enough stability, thus optimal outcomes might be lost.

Looking at the data, explanatory power of independence factor seems to prevail. In the UK and Ireland independent regulators operate within the high-powered system. Poland and cost-based German airports present an inverse image i.e. an average to highly dependent regulator and low-powered scheme. The picture blurs when it comes to German airports that entered the PFAs. We classified them with a potentially very high score on the operational independence dimension due to the fact that the regulators are not explicitly bound by law in their application of single- or dual-till or price-cap or cost-based solutions. Simply put, the regulators enjoy great discretion in this area. Important to mention is that those choices, which strongly shaped the regulation of levying the airport charges, did not have a political origin because they were a result of an initiative by airports, users and their representatives and the regulator translated them into the public law. Having said that, it could be claimed that operational independence strongly contributed to the breaking up with the low-powered model and offered an impact towards the high-powered one, although it seems that political consent for such a move had to be present as well. Yet, the adoption of PFAs was not the end of the story as four of these five airports have discontinued this solution and currently only Hamburg still operates in this model. This suggests that regulator's operational independence may be an important cause of turning toward high-powered regulation, yet it does not suffice to make them sustainable. The last section of this chapter proposes an additional analytical layer that attempts to amend this shortcoming.

6.4 Strength of the regulator

A regulator's freedom of action may significantly impact the regulatory process of the charges setting and push it towards a high-powered option. But as we saw, independence alone is not enough. If the regulating authority is not equipped with the capacity to persuade or impose its decisions, or in other words when the regulator lacks strength to act on its

discretion, changes in the regulatory process seems unsustainable. The sample countries granted the regulators with a diverse amount of clout, which are summarised in the Table 6.

Strength of the regulator *				
	UK	Ireland	Germany	Poland
Strength	VH	VH	L	VL
Activity	VH	VH	A / L	VL

Table 6: Strength of the regulator.

* VL - Very low, L - low, A - average, H - high, VH - very high.

Again the leaders are Ireland and the UK, while Germany and Poland stay far behind. The strength dimension may not seem obvious at the first cast of an eye as it is closely sitting by the independence factor. However, it might occur that a regulator theoretically possesses a great degree of autonomy, but is not empowered to use this discretion, thus remaining inactive. In fact strength and activity are closely related as shown in Table 6. Those two aspects may be represented as a two-by-two matrix, shown in the Table 7. The data reveals that there are two stable outcomes, or Nesh-equilibria, namely the north-east and south-west cells. The south-east corner produces sub-optimal results and seems unsustainable. Finally, the north-west cell was not inhabited by any of the discussed regulators and no empirical conclusions may be drawn here.

		Regulator's independence	
		Low	High
Regulator's strength and activity	High	-	UK, IRL
	Low	PL, GE: cost-based	GE: price-cap

Table 7: Typology of the regulatory regimes.

The north-east corner indicates a high-powered system and is populated by two regulatory leaders. Strong and active regulators are capable of addressing issues of asymmetric power and information and can create strong institutions, e.g. extensive consultations, that allow good information flow and predictability. After a transparent regulatory process such regulators may impose an independent decision, which produces sustainable outcomes because the risk sharing is more or less balanced between interested parties according to a well-known methodology. Moreover, the design of the regulatory process allows appeals, which do not stall the implementation of the taken decisions. The credibility thesis argues that IRAs are created for sake of ensuring private investors about the government's trustworthiness and stability of regulations and business environment. Though, Dublin example with the full state ownership may suggest that credibility does not have to be the main reason behind the IRA foundation.

South-west cell depicts the low-powered scheme and Poland and German cost-based airports may be found there. It is sustainable because the regulation does not primarily strive for economic efficiency and thus a strong and independent regulator is not needed. A dependent and weak regulator fulfils its tasks, which are characterised by a low level of intrusiveness. Shortly put, low political costs (a regulator without high level of independence, low level of information sharing between airports, airlines and regulators etc.) are matched with low economic gains (limited strive for efficiency gains).

North-west and south-east fields are hybrid solutions, which do not fit neatly into high-/low-powered typology and it seems they are not sustainable in the long-term. A strong and politically dependent regulator is easy to imagine. A real-life example could be taken from a financial field, namely a politically dependent central bank. Such creations have been operational for decades and truly speaking they are still around. However, credibility issues made them obsolete in the western world, since markets have been concerned about political steering of the economy and related to that unpredictability and declining efficiency. In the field of airport charges regulation it would also be possible to create such an entity, however, the results would be suboptimal as political influence does not go hand in hand with the long-term efficiency. If the economic gains could not be realised from the high strength of such a regulator, there is no reason to bear the costs of maintaining this solution. Then a move towards one of the stable solutions could be expected.

Finally, the south-east corner, inhabited by the former price-cap German airports, seems to be another unsustainable hybrid. However, the Hamburg case, where PFA is still in force, somehow weakens this claim. A regulator with high independence but a weak clout is not capable of alleviating asymmetric power and information and sustaining a high-powered regulatory regime. German airports and airlines that quitted PFAs suggested that such asymmetry and the resulting uneven risk-sharing were the main causes of their decisions. It could be argued that the implementation of the dual-till solutions in all five cases reveals the capture of the PFAs negotiation process by the airports. This is because the dual-till is preferred on the economics grounds by airports (may charge higher fees), whereas airlines are likely to pay lower charges in the single-till environment. Airlines' support for single-till solution could be observed during the elaboration of the EU directive on airport charges, when airlines' representative strongly lobbied for this option (euractive 2008). It might be then argued that the regulator's inability to provide a stable and strong framework, which could serve as a level playing field institution, could lead to a collapse of this hybrid scheme. In other words, the regulatory process, which was striven for at these airports, was not suitable to the institutional setting in which it was to operate.

7 CONCLUDING REMARKS

The new EU directive on the airport charges stipulates new regulatory standards that the member countries have to comply with within next two years, among other formation of an independent supervisory authority is required as well as enforcing good information flow and transparent regulatory process. This paper shortly discusses potential benefits and costs of IRAs as well as explains the credibility thesis and then it elaborates on a claim that airports are natural monopolies. Denying by and large the latter claim, it comes to a conclusion that economic regulation is needed for certain type of airports (congested with low level of inter- or intra-modal competition). In the following chapters the work goes on with presentation of empirical data about the regulatory processes of levying airport charges in the sample countries. The addressees and core matter of the regulation are presented and data about the regulators is spelled out with particular emphasis put on their independence, especially its operational dimension. The empirical part ends with elucidation of differences in the shape of the regulatory processes in the analysed countries. Particular attention is drawn to the role of the regulator during the consultation process and a special character of the private framework agreements.

The analysis part divides inspected regulatory systems into low- and high-powered categories and attempts to find the necessary institutional factors for enforcing both mentioned types. Ownership rights are also included into the analysis. However, neither privatisation nor the governmental level of regulation can serve as an explanatory variable for adoption of low- or high-powered systems. Regulators' independence demonstrates high explanatory power, nevertheless, it also has deficiencies, which seemed to be amended by adding another analytical layer, i.e. strength of the regulator. The examination of the regulatory schemes indicates two stable types and two unsustainable hybrids. It is found that a sustainable high-powered system requires not only a regulator with a high degree of operational independence but also one with a high level of regulatory strength. A low-powered system is stable in cases of dependent regulators with low levels of strength. Evolution from a low-powered to a stable high-powered solution entails changing both examined dimensions, because an upgrade of only one creates a hybrid form, which does not seem stable in the longer term, at least in the form of low strength and high independence, which was observed at some German airports.

The discussed here division of low- and high-powered regulations seems to have broader application than only to the aviation sector. It might prove useful in all those sectors where economic regulation is needed, e.g. because of natural monopolies, and service quality has to be monitored and maintained “until the competition arrives.” In such instances both the

regulator's operational autonomy and its regulatory strength should be set high in order to establish a sustainable high-powered regulatory scheme capable of dealing with asymmetric information and power. Where market competitiveness or strive for economic efficiency do not constitute an exclusive goal and they are supplemented with other important political considerations, then regulators do not need either a high level of independence, or high regulatory strength. That is because politicians, one way or another, will be able to influence this sector and the regulators will not be able to win credibility in the market.

Finally, this work did not intend to analyse the efficiency or effectiveness of those regulatory systems. Such an attempt could be helpful, though methodological difficulties with airport benchmarking, due to their high diversity, pose significant problems in this field. Another area of research could focus on differences between single-issue and multi-issue regulatory bodies. In Germany different monopoly sectors are regulated by one multi-purpose federal independent authority, Bundesnetzagentur, or Federal Network Agency (FNA). From an economic point of view regulation from the central level makes more sense than regional one, because it avoids redundancies and increases coherency of the applied solutions. Thus moving the airport regulation to the federal level would appear sensible. However, should the FNA take over or some other single-purpose IRA is not so explicit. Last but not least, IRAs dispose of a significant amount of autonomy, which implies trust endowed with them. Does this mean that IRAs may only exist in such environments where trust is high and corruption level is low, or in other words, are all the member states suitable habitats for bringing IRAs to life? Can they deliver promised benefits if a strong institutional framework is missing and cultural traits are diverse?

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