Airport Charges

George Saounatsos considers the structure of airport aeronautical charges and observes current practices and trends on a worldwide representative sample of 70 international airports.

As an indispensable element of a deregulated and highly competitive air transport market, the airport model has transformed during the last 25 years from a minimalistic, state-owned infrastructure provider to a modern commercial business entity. In order to satisfy capacity demands and commitments to their airline customers, airports are engaged in very long-term planning requiring substantial capital expenditures. However, they have indirect and limited control over this demand and are usually unable to match the short-term flexibility and responsiveness airlines enjoy when affected by the risks and uncertainties to which they are naturally exposed, such as fuel price escalation, geopolitical instability, excessive seasonality, recessions, health crises, terrorist threats, etc.

Structure

An important parameter in the assessment of airport costs is that each airport may be at a totally different point in its planning and development cycle. Hence, the 'short-run cost curve' of each airport corresponds to a certain throughput capacity and is governed by economies of scale, meaning that as traffic throughput increases the unit costs are reduced. Yet, if throughput increases beyond a certain point, the congestion of landside or airside facilities would oblige the airport operator to invest in new infrastructure. This would bring the airport into the domain of a new short-run cost curve, which shall correspond to a new throughput capacity and different unit costs. Furthermore, each airport is confronted with different challenges and requirements under diverse local conditions, while size of facilities, level of service or operational complexity differ from one another, thus affecting unit costs. In this respect, the comparison of airport costs can be inappropriate, making difficult the relative assessment of airport charges, which principally aim to cover development, operating and investment expenditure. In a careful attempt to identify only dominant trends as well as the rationale and level of uniformity, the structure of aeronautical charges at 70 airports around the world were examined (see Figure 1) based on the latest data published by the airport operators or provided in the IATA Airport & Air-Navigation Charges (July 2007). The total combined traffic of the airports reviewed accounted for more than 2 billion passengers in 2006, and represent the busiest airports in their respective regions covering North & South America, Europe, broader Asia including Australia, the Middle East and Africa.

In order to establish a common basis for assessing airport charges, a baseline aircraft turnaround scenario was applied, comprising the following parameters:

<table>
<thead>
<tr>
<th>BaseLine Scenario</th>
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<tbody>
<tr>
<td>Aircraft Type: Boeing 777-200</td>
</tr>
<tr>
<td>Maximum Ramp Weight (MRW): 244T</td>
</tr>
<tr>
<td>Maximum Take Off Weight (MTOW): 243T</td>
</tr>
<tr>
<td>Maximum Landing Weight (MLW): 202T</td>
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<tr>
<td>Type: Scheduled International Flight</td>
</tr>
<tr>
<td>Time/Period: Daylight peak hours &amp; season</td>
</tr>
<tr>
<td>Load Factor: 70% - 214 Pax O &amp; D</td>
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<tr>
<td>Turn Around Time: 3 Hours</td>
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<tr>
<td>Parking: Contact Stand (use of boarding bridges)</td>
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<tr>
<td>Refueling: 82,000 l</td>
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<tr>
<td>Check-in Counters open: 3 Hours</td>
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Landing Fees: Airports are continually trying to enhance safety standards, address special requirements for new aircraft types, such as the increased turning radii of B777-300 and A400-600 or Code F upgrades, improve quality and service standards, etc. Landing fees are the most common type of aeronautical charge and are usually aimed at recovering capital Movement Area costs, periodic maintenance expenditure, lighting and the provision of standard operational services, such as Airfield Rescue & Fire Fighting (ARFF), airside inspections and cleaning, etc. It is interesting though that among the airports studied worldwide, 35% of those in Europe implemented an additional charge for take-offs, with 27% of them applying the same fee as for landing and 8% defining a different fixed charge, usually lower.

Three different landing charge bases were identified globally: namely the aircraft Maximum Take Off Weight (MTOW), the Maximum Ramp Weight (MRW) and the maximum Landing Weight (MLW). Three principal types of charging policies were also observed:
- Fixed rate per unit weight (35% Europe, 82% America, 14% broader Asia)
- Fixed rate based on a weight scale (35% Europe, 14% America, 23% broader Asia/Africa)
- Mixed rate comprising a fixed and a variable charge which may be also related to weight scales (30% Europe, 4% America, 45% broader Asia/Africa)

It was established that all of the European facilities examined charge on a MTOW basis compared to 36% of the American and 82% of the Australasian/African airports.

On the other hand, 64% of the American airports charge on MLW basis and 14% of the Asian airports charge on MRW basis. Considering this global distribution and the fact that MLW is always less than MTOW with a difference ranging from 10% to more than 25%, there seems to be inadequate justification just to why the same aircraft landing on a US airfield (using MLW as a basis) pays less compared to a European airfield where the landing fee is based on MTOW. This adds up to another controversial point, the fact that 27% of European, 14% of American and 32% of Asian airports relate their landing fees to flight origin (eg international, domestic or regional) although the ‘cost’ for the use of the Movement Area from the same aircraft type should be the same.

On the other hand, airports, like any other business, are entitled to use policies and financial incentives to appeal to a certain market niche and clientele as per their commercial strategy. Thus numerous airports have preferential fees for cargo vs passenger flights (15% Europe, 9% America, 23% broader Asia & Africa), scheduled vs charter (5% America, 5% Australasia) or ‘signatory’ vs ‘non-signatory’ airlines (41% America). Another policy implemented, usually by busy airports, is a landing charge differentiation between ‘peak’ and ‘non-peak’ hours or seasons (19% Europe, 23% America, 9% broader Asia). This assists airports in better controlling and distributing their traffic volumes throughout the day, thus optimizing their operations.

Additional incentives on landing charges include reduced fees for new destinations (23% Europe and 9% Asia), increased flight frequency (15% of European airports) or reduced charges for technical stops, etc. In remote cases, a separate charge for ARFF services was also observed. There could be operational cases where the request for the presence of a fire tender under specific conditions could justify an extra charge for a non-standard service. Likewise an additional charge for the ‘follow-me’ service was also recorded at a couple of airports.

Adding together the airport fees and the state taxes paid directly by passengers, it becomes apparent that travellers rather than airlines bear the largest percentage of airport charges.

(Analysis based on IATA Airport & Navigation Charges data, July 2007 edition)

Although the European continent has the highest absolute average value of landing fees compared to other world regions, a look at Figure 1 reveals that the highest average landing fees are as a percentage of the total airport charges are observed in broader Asia & Africa (29%), with the second highest in Europe (24%) and the last in the American continent (11%). Yet, on some occasions landing fees reach or exceed 50% of the total airport charges as in Figure 1 for 4.

Noise & Environmental Surcharges: Noise constraints constitute a significant parameter to many busy airports located in large residential areas and in many cases an additional cost element applies due to soundproofing investments or the finance and maintenance of noise monitoring systems. Out of the overwhelming 73% of the European airports applying noise charges, 35% incorporate this charge into the landing fee. However, this policy is not used extensively in Australasia or the American continent. The noise charge may be based on the certified aircraft noise category, an airport defined group, or MTOW. In addition, some airports apply surcharges specifically for night operations and have established strict noise criteria. Night-time surcharges may take the form of a fixed amount or may range from 15% to more than double the basic landing fee. In some instances ‘silent’ Stage-4 aircraft are treated preferentially to promote their use, leading to charges even below the basic landing fee. Another 15% of European and 5% of Asian airports relate their landing fees to aircraft emissions, with NOx levels being most commonly used as a reference.

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In total 26 European airports were reviewed, but those owned by the same airport operator have been omitted as charging practices and costs are almost identical.

Parking Fees: These are another common source of aeronautical revenues for airports. Six principal parking charge policies have been identified in this study:

- Fixed rate per unit weight per time (42% Europe, 18% America, 23% Asia).
- Variable rate per time corresponding to different weight scales/ranges (15% Europe, 32% America, 23% Asia).
- Fixed rate per unit time, i.e., hour, day or any fraction or multiple of those (4% Europe, 14% America, 34% Asia).
- Mixed rate comprising a fixed charge based on time or weight and a charge per unit weight per time (15% Europe, 14% Asia).
- Percentage of landing fees (8% Europe, 9% America, 5% Asia).
- Occupied area of the aircraft on the stand or aircraft category size; it may be fixed or per unit time (12% Europe, 14% America, 18% Asia).

It was also noted that a smaller number of airports did not levy parking charges to scheduled passenger flights.

Airports may also offer different incentives to airlines in order to maximize stand utilization and optimize their operational allocation. A very common practice is reducing prices for remote stands (42% Europe, 9% America, 14% broader Asia), which are usually less popular with premium airlines wishing to offer a better level of service with direct aircraft access and achieve shorter turnaround times. Likewise, some airports relate their parking fees to night-time or ‘peak’ hours/season (46% Europe, 5% in America, and 14% in Asia). In many examples free night parking is also provided to facilitate the overnight stay of aircraft (31% Europe and 5% in Asia). Another broadly-used policy involves offering free parking during the first few hours after “blocks-on”. In fact 73% of the airports reviewed in Europe offer an average of 3.1 hours of free initial parking, while the equivalent percentage in America is 50% with an average of 3.5 hours and in broader Asia 86% with an average of 3.7 hours.

Some airports’ parking fees differentiate between passenger and cargo aircraft (8% Europe, 18% America, 9% Asia), the origin of flight (9% America, 14% Asia) and more rarely for scheduled or domestic carriers. Occupying a stand beyond the declared time may also be penalized as a means of preventing last-minute changes in planned stand allocation and thus avoiding possible disruptions in airport operations.

Figure 1 shows that the highest average parking fees, as a percentage of the total airport charges are observed in Europe (2%). Yet, although the average parking fees range generally between 1% to 2% in this scenario, it should be noted that the corresponding percentage globally ranges between 2% to 7% if the initial free parking time offered by most airports is not considered.

Ground Support Equipment (GSE) Charges: Many airports tend to charge for specific ground support equipment separately such as for boarding bridges (31% Europe, 36% America, 59% broader Asia), pre-conditioned air or ground power (12% Europe, 5% broader Asia). Some other airports choose to charge for apron lighting separately (23% Europe, 5% America, 14% Asia). A smaller percentage declare a charge on fuel, usually in the form of a fee per unit volume, in order to recover the investment in their underground hydrant network (15% Europe, 9% America). Nonetheless, even for airports that do not clearly state such a charge, this might be incorporated into the corresponding fuel concession agreements.

Passenger Fees: These represent a significant source of revenue for airports covering costs related to the use of terminal facilities. From the airports surveyed worldwide, all of the European and broader Asian/African airports levy a passenger fee, while only 27% of the American airports implement a
direct passenger charge. This difference is mainly attributed to the fact that US airports levy charges to airlines for the use or rental of terminal facilities rather than to passengers.

Using our baseline scenario we reach an interesting observation that as airport passenger fees increase, the corresponding fees levied directly on airlines (i.e. landing, parking, terminal use, GSE, etc.) decrease (Figure 2-4). This is particularly evident in broader Asia (Figure 4), where average passenger fees account for 50% of the total airport charges as compared to 36% for the European airports and 11% for the American continent, as illustrated in Figure 1.

Passenger fees are also frequently differentiated between international and domestic traffic (73% Europe, 18% America, 64% broader Asia/Africa). This is justified by the fact that international passengers are more demanding in terms of terminal space mainly because of their processing through customs and immigration. This fee is predominantly applied to departing passengers (88% Europe, 23% America and 91% broader Asia/Africa), while only very few airports were noted as applying this charge to both arriving and departing traffic. Most of the airfields worldwide levy lower fees on transfer travellers and no charges to transit, acknowledging the fact that the type of traffic has reduced infrastructure requirements, while also providing an incentive for the retention of transfer traffic.

In Figures 2 to 4 the total airport charges for the baseline scenario used are provided in absolute values on the right side of each chart. These, however, are indicative and cannot be compared as they refer to different airport set-ups, conditions, size of infrastructure, level of service, operational complexity, etc.

Munich and Lufthansa’s joint investment led to a highly competitive European hub. (KEY TOM ALLITT)

**State Taxes:** On the other hand, state taxes levied on passengers are a considerable charge not related to the airport operator but still increase the final price of the air ticket. From the airports studied, 35% of the European, 82% of the American and 14% of the Asian/African airports levy state taxes on passengers. In the US these taxes are quite uniform, as observed in Figure 3, and relate to very specific subjects such as: a) air transportation tax, b) customs, c) immigration, d) agricultural and e) security fees.

Adding together the airport fees and the state taxes paid directly by passengers it becomes apparent that in most cases it is the passengers rather than the airlines, which bear the largest percentage of air ticket charges.

For the baseline scenario run, the average state taxes in American airports accounted for 56% of the total airport charges. In Europe, this percentage falls to 17% and in broader Asia/Africa reaches the lowest value of 8%, as indicated in Figure 1. In some remote cases state taxes exceed 50% of the total airport charges as observed in Figures 2 to 4.

**Security Charges:** The aim is to recover only the cost for the provision of such services, which are particularly enhanced since 9/11. From the airport survey performed, 65% in Europe, 86% in America and 36% in broader Asia/Africa impose security surcharges usually on departing passengers, but even in cases where such fee is not defined it might be incorporated into the passenger charge. In a few cases there may be a distinction in this charge between international and domestic passengers or ‘signatory’ and ‘non-signatory’ airlines for the US. This, however, does not really justify the difference, as security standards are the same regardless of the passenger origin. In cases where increased security measures are required for specific airlines, the airport operator can impose a relevant surcharge.

In Figure 1 it is observed that average security charges in European airports account for around 10% of the total airport charges, while for American airports this percentage drops to 5% and for broader Asia/Africa reaches 4% of the total airport charges.

**Air navigation fees** pertain to the provision of Air Traffic Services and therefore are not always an airport-related charge. Nevertheless, it may include the provision of navigational aids for terminal area navigation (eg VOR) and approach (eg ILS) if such systems are purchased and maintained on airport expenses. From the airports studied, 92% in Europe, 27% in America and 23% in broader Asia/Africa publish NAVAID charges together with airport charges. The majority (85%) of the European airports base this charge on a MTOW formula driven by Eurocontrol, while in fewer cases it is a fixed cost.

Of the airports reviewed a number of additional declined charges
were also observed associated with centralized infrastructure, such as baggage handling systems, hold baggage screening, Common Use Terminal Equipment, check-in counter use, de-icing facilities, gate usage, or even slot co-ordination compensation, cargo unloaded per unit weight, etc.

**Airline Airport Interdependency**

In the continuously liberalised global air transportation sector, airports compete at a regional or intercontinental level for transfer or Origin & Destination (O&D) traffic and an increased ‘cathedral’ area. Passengers are becoming more selective and facility-conscious, having the ability to identify the route they wish to follow and choose their connecting hub. Airports are thus engaged in extensive benchmarking in order to offer better value for money to their users and increase passenger satisfaction. In some cases this intense competition may take a more holistic approach and adopt the form of an ‘integrated transport system’, comprising a hub airport and a strong home carrier with a highly-developed international network. In this respect, the increase in airport traffic will normally be based on the expansion of the home carrier, which in turn relies on the infrastructure expansion of the airport itself in order to support the forecasted demand. Representative examples of this tight bond between airports and airlines are Dubai Airport and Emirates Airlines, as well as Munich Airport and Lufthansa where their joint investment in a new passenger terminal led to a highly competitive hub in Europe. It becomes apparent that airports and airlines rely on each other in order to offer passengers an integrated product of high quality and added value. In this respect, airports acknowledge that in order to meet their financial and operational objectives and keep the aeronautical charges at competitive levels, the emphasis needs to be on the commercial (non-aeronautical) revenues. Nowadays these tend to equal or exceed the revenues from aeronautical sources at many airports.

It is evident that as airport passenger fees increase, the corresponding fees levied directly on airlines (i.e. landing, parking, terminal use, GSE, etc.) decrease – see also Figures 2 and 3.

**Conclusion**

It is essential that a balance is achieved between the respective interests of airports and air carriers, not only because they rely on each other, but also due to their influence as an integrated air transport system in promoting economic growth and cultural interchanges. The aim for airports should be to enhance the sources of non-aeronautical revenues and be able to relieve their dependency on aeronautical charges, which should be based on clear and consistent methodologies. During the last 25 years airports have managed to keep their charges to airlines comparatively constant, which according to ICAO, account for a worldwide average of about 4% of the total airline operating costs.

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