The ‘Single Till’ and the ‘Dual Till’ Approach to the Price Regulation of Airports

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Executive summary

In October 2000 the Civil Aviation Authority (CAA) published a Position Paper on the airport quinquennial reviews. The paper confirmed the CAA’s intention to “undertake a fundamental review of its approach to the economic regulation of designated airports” and re-affirmed its commitment to the criterion of economic efficiency in assessing trade-offs between its statutory objectives under s.39 of the Airports Act. This paper is part of the CAA’s initial programme of work. Its purpose is to set out an initial analysis of the key arguments for and against using the single till to set charge caps at the designated airports, and to discuss some of the issues which would be raised if a dual till approach were to be implemented.

The application of the single till approach has been widespread custom in international airport regulation. In previous quinquennial reviews, the CAA has used the single till approach to determine the maximum level of airport charges. The distinct characteristic of the approach is that it takes account of the costs and revenues of both aeronautical and commercial activities of an airport when determining the price cap for the airport charges. In contrast, a dual till would only focus on the core ‘aeronautical’ activities, and therefore would not consider an airport’s performance in its other ‘commercial’ activities when setting a price cap for airport charges.

The most basic argument against the single till approach is that it is aeronautical charges relating to services provided by a firm with substantial market power which should be subject to economic regulation, not the commercial side of the business. To incorporate the commercial costs and revenues into the equation therefore widens the scope of the regulatory framework beyond the basket of services for which a robust diagnosis of market dominance is possible and for which price controls have therefore been deemed appropriate. Regulation is subject to a range of problems and can create its own undesirable distortions. There should therefore be a presumption against a wider regulatory scope except where there are compelling arguments for it.

One argument used in favour of the single till is that airports only get the benefits from the commercial side of their business because airline passengers are using the facilities, and that it is therefore reasonable for profits made on the commercial side to be used to reduce aeronautical charges. It is the CAA’s view that trade-offs between its statutory duties under the Airports Act should be judged against a criterion of economic efficiency. At one level this argument is about who should benefit from the value generated from the superior retail location at airports. Compared with the likelihood that extending the regulatory framework could create undesirable distortions, the CAA does not consider this to be a compelling argument in favour of the single till.

1 The CAA Approach to Economic Regulation and Work Programme for the Airport Reviews, October 2000 (available at www.caaerg.co.uk).
It is also argued that airports may have market dominance in relation to the commercial facilities as well as for the aeronautical facilities, and that the single till is a simple means of preventing monopoly exploitation across both. The CAA would question this argument for two reasons. First, most of the profits generated from the commercial business are more likely to reflect the premium location for retail activities that airports provide. Even if there were some element of dominance in relation to some facilities, there is similar market power in many other parts of the economy which is not subject to economic regulation (beyond the application of competition law). Secondly, the single till does not prevent the airports from exploiting the commercial business, it simply uses the profits to lower aeronautical charges. At congested airports this is unlikely to lead to lower fares for consumers. At uncongested airports there would need to be very close complementarities between consumer demands for the commercial facilities and the service they receive from airlines for the argument that passengers benefit from a single till imposed by regulation to be persuasive.

The CAA's view is that the case in favour of the single till relies on a demonstration that it would enhance economic efficiency. This should be judged against the following criteria:

- Does the single till result in better or worse use of resources, when compared with a dual till which focused on aeronautical airport activities only?

- Does the single till result in better or worse incentives to make appropriate investments over time?

- Is it feasible to identify the costs and assets of the aeronautical business and how robust would this be over time?

One of the original arguments in favour of the single till was the fact that it avoided the need to determine the costs of the aeronautical business separately from the commercial facilities. To address this issue, the CAA has commissioned work to investigate the feasibility of implementing an aeronautical till, the activities to be included in it, methods of cost allocation, and how robust such a framework would be over time.

The case for and against the single till depends on empirical analysis. The answer may vary between airports, and a further question is whether a different approach might be taken for different airports. The next stage of the process will be to review the case for and against the single till in the light of empirical analysis and to indicate quantitatively what the effect of moving to an aeronautical till would be, against the arguments which have been identified.

Comment are invited on whether the CAA has adequately identified and summarised the arguments in favour and against the single till and where its preliminary analysis is correct.
The CAA would especially welcome views on the following questions:

- Is there evidence for significant market power of the designated airports in relation to commercial activities?
- How can locational rents and market dominance be distinguished with respect to commercial activities?
- How strong are the demand complementarities between an airport’s aeronautical and commercial activities, and are they quantifiable?
- What is the case for a dual till at capacity-constrained and uncongested airports?
- In which direction would a move away from the single till influence an airport’s allocation of available space?
- How would a move from a single till to a dual till affect investment incentives?
- Which airport activities that cannot be economically duplicated, are necessary for airport users?
- Under a dual till, how should the aeronautical till be defined?
- How should common costs be allocated to different airport activities under a dual till?
- What kind of monitoring and compliance requirements would be necessary under a dual till?
Responses

Comments on the issues raised in this paper and any other issues which respondents believe should be considered by the CAA in reviewing the airports should be sent in writing by 9 February 2001 to:

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All responses will be treated as public information unless otherwise specified. If a response is made in confidence it should indicate that.

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1. Introduction

1.1 The application of the single till approach has been widespread in international airport regulation. In previous quinquennial reviews, the Civil Aviation Authority (CAA) made use of a single till approach to determine the maximum level of airport charges. The distinct characteristic of the approach is that it takes account of the costs and revenues of both aeronautical and commercial activities of an airport when determining the price cap for the airport charges. In contrast, a dual till would only focus on the core ‘aeronautical’ activities, and therefore would not consider an airport’s performance within its other ‘commercial’ activities when setting a price cap for airport charges.

1.2 In July this year, the CAA announced that it intended to undertake a fundamental review of the regulatory framework of the UK designated airports. In October, it proposed a detailed work programme for the airport reviews. It stated that the CAA would investigate whether the single till should continue to be applied, or whether a move to a dual till might deliver substantial benefits.

1.3 The single till debate has intensified in recent years. The Australian Competition and Consumer Commission (ACCC) is currently reviewing a pricing proposal by Sydney Airport which, among other things, proposes a move to dual till. Seven of the ten largest US airports no longer apply a ‘residual approach’, the US version of the single till, but instead use a ‘compensatory approach’, focussing only on airside cost recovery. The South African government also intends to move away from the single till, and the Swiss government is currently proposing that only a certain share of commercial revenues should be counted towards airport charges. The German State of Hamburg announced regulation of the partially privatised Hamburg Airport according to a dual till principle. The CAA also notes that the International Civil Aviation Organisation (ICAO) is currently undertaking a prioritised study on the single till principle following several submissions by Airport Council International (ACI) and the International Air Transport Association (IATA) at the ANSConference 2000 in Montreal.

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2 Issues for the Airport Reviews, July 2000 (available at www.caaerg.co.uk).

3 The CAA Approach to Economic Regulation and Work Programme for the Airport Reviews, October 2000 (available at www.caaerg.co.uk).


7 See the conference working papers no.17, 30 and 48 at www.icao.int/icao/en/atb/ansconf2000/wp.htm.
1.4 The effects of the single till have been debated during previous airports reviews. For illustrative purpose, the following figures show passenger growth at the four regulated airports, the percentage of revenue from airport charges over time, airport charges per passenger, and other revenue per passenger over time.

Figure 1: Passenger growth at the regulated airports

![Graph showing passenger growth at the regulated airports.]

Table 1: Passenger throughput at the four regulated UK airports

<table>
<thead>
<tr>
<th>Passengers(m)</th>
<th>89/90</th>
<th>90/91</th>
<th>91/92</th>
<th>92/93</th>
<th>93/94</th>
<th>94/95</th>
<th>95/96</th>
<th>96/97</th>
<th>97/98</th>
<th>98/99</th>
<th>99/00</th>
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<tbody>
<tr>
<td>Heathrow</td>
<td>40.4</td>
<td>41.3</td>
<td>42.1</td>
<td>45.6</td>
<td>52.1</td>
<td>54.9</td>
<td>56.2</td>
<td>58.2</td>
<td>61.0</td>
<td>62.3</td>
<td></td>
</tr>
<tr>
<td>Gatwick</td>
<td>21.2</td>
<td>20.4</td>
<td>18.9</td>
<td>19.9</td>
<td>20.2</td>
<td>21.2</td>
<td>23.0</td>
<td>24.6</td>
<td>27.3</td>
<td>29.6</td>
<td>30.4</td>
</tr>
<tr>
<td>Stansted</td>
<td>1.4</td>
<td>1.2</td>
<td>2.0</td>
<td>2.4</td>
<td>2.9</td>
<td>3.5</td>
<td>4.3</td>
<td>4.9</td>
<td>5.6</td>
<td>7.5</td>
<td>10.0</td>
</tr>
<tr>
<td>Manchester</td>
<td>10.2</td>
<td>10.1</td>
<td>10.5</td>
<td>11.8</td>
<td>13.1</td>
<td>14.4</td>
<td>14.8</td>
<td>14.6</td>
<td>15.9</td>
<td>17.4</td>
<td>17.5</td>
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1.5 Figure 1 shows that the growth of passenger numbers has been relatively steady during the last few years. Stansted’s throughput has doubled during the last three years, Heathrow and Gatwick have had some growth with Manchester’s growth the lowest over the last few years.

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8 See, for example, different paragraphs in MMC4, BA A plc - A report on the economic regulation of the London airports companies, Monopolies and Merger Commission 1996.
1.6 Figure 2 shows that figures for airport charges as a percentage of total airport revenues have been less stable. While Manchester’s relative high share of airport charges has been slowly decreasing during the last few years, a strong increase at Stansted and for the last year also at Gatwick is observable. There are several reasons for these trends. Firstly current economic regulation has required Manchester to cap airport charges by RPI-5 per annum. Secondly, the loss of intra-European duty-free and tax-free sales has had a different impact on the airports. While passenger numbers at Stansted have grown strongly, non-regulated commercial revenues per passenger have fallen. This is shown in Figure 4 below. The single till approach has meant that airport charges have increased to partially compensate for lower duty-free revenues.
1.7 At the core of the argument is what airport activities economic regulation should cover. Under the single till the regulation of narrowly defined airport charges is extended to cover all or most of the airports activities. One of the CAA’s statutory objectives is to minimise the scope of regulatory intervention. The CAA therefore has a strong presumption against the extension of regulation to activities where it is not warranted. The CAA would only be likely to continue to recommend the single till approach if it were demonstrated that its effects were clearly and unambiguously to improve the efficient use of resources and investment incentives such that there is a clear case for continuing to extend the regulatory regime to non-aeronautical activities.

1.8 In his 1994 IEA lecture on ‘Regulating Airports and Airlines’, David Starkie pointed out the fundamental trade-off associated with the single till approach in stating that

“... in the extreme, this [the single till] may lead to negative charges for runway and terminal use. Now, in certain circumstances, where capacity can be added only in large amounts and this leads initially to low utilisation, the effects of the one-till approach are not altogether adverse in terms of economic efficiency. But where capacity is well used and where it cannot be easily adjusted, the combination of an RPI-X formula and a single-till philosophy can lead to ludicrous results - the pressure is to reduce charges in spite of growing airside congestion. This is precisely the situation with respect to runway charges at Heathrow and Gatwick.

This makes it more difficult to manage limited capacity available, it reinforces the incumbents’ so-called ‘grandfather rights’ to landing slots and it has the effects of passing the rents associated with airports of superior location to the airlines.”

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1.9 At the last quinquennial review of BAA, the MMC found that
“there are.. evident problems with the single till approach. Charges are lower
than the overall cost of supplying airport services to airlines which is not in
principle an economically efficient way of pricing”\textsuperscript{10}.

1.10 Nevertheless, the MMC concluded that
“the existence of the opportunity for BAA to earn profits on commercial
operations is due to the airline industry, and we would regard it as reasonable to
use the single-till approach to ensure that airlines obtain some of the benefits,
while ensuring that the BAA does not make excessive profits overall. For these
reasons, therefore, we endorse the continuation of the single till approach”\textsuperscript{11}.

1.11 The MMC evidently recognised that a potential trade-off between efficiency and
distributional aspects might exist in applying the single till at congested airports.
Other problems which can be attributed to the use of the single till are also well
known. Given the importance of commercial activities in generating airport
revenue, the gearing effect means that modest changes in revenue requirements
(e.g. caused by the end of intra-European duty free sales or new commercial
investment projects) give rise to large fluctuations in the level of the airport
charges.

1.12 This paper sets out the case for and against the single till approach to setting
prices on two levels. First, the paper addresses whether there is still a good case
for extending airport regulation to cover non-aeronautical activities. Second, it
provides a more detailed analysis of the effects of the single till on making the
best use of resources and investment incentives. The paper then addresses the
question of how a dual till approach should be implemented if it were decided
that the case for the single till were weak. It considers the activities that an
aeronautical till should cover, and how to address the need for cost allocation
between the activities.

1.13 The structure of the paper is as follows:

- Section 2 considers the arguments for and against extending airport
regulation to covering non-aeronautical activities;
- Section 3 analyses the effect of a single till on making the best use of
resources and providing good investment incentives;
- Section 4 discusses options for the implementation of a dual till

\textsuperscript{10} MMC4, BA A plc - A report on the economic regulation of the London airports companies, Monopolies and Merger
Commission 1996, paragraph 2.22.

\textsuperscript{11} MMC 4, op. cit., paragraph 2.22.
2. What is the case for and against widening economic regulation beyond airport charges?

2.1 In its October Position Paper the CAA stated that “…regulation should focus on monopoly behaviour…rather than the distribution of non-monopoly rents.” More generally, the dominant theme of utility regulation in the United Kingdom in recent years has been to introduce competition as the preferred alternative to regulation. While there are other instances where a single till approach has been adopted (e.g. Railtrack13), widening the scope of regulation to cover activities which are outside the core monopoly runs somewhat contrary to regulatory trends in recent years.

2.2 Widening the scope of regulation to commercial activities carries a range of dangers. It extends the scope for regulatory failure to activities and facilities which would not normally be considered candidates for full economic regulation, thereby dampening incentives to develop those businesses fully and efficiently. It results in aeronautical charges being driven, and increasingly so, by the fortunes of the commercial businesses, and as commercial businesses have grown, this gearing effect has increased. It extends the arena for regulatory influence into important areas of investment, such as surface transport and access, and extends the scope for regulatory failure to these investments (either by encouraging socially unprofitable investments which can be offset through higher airport charges, by dampening the returns on those investments, or by influencing both investment selection and efficiency).

2.3 The CAA has a strong presumption against extending the scope of regulation to activities where airports do not have monopoly power, such that ex ante economic regulation is warranted. This section discusses the main arguments which can be raised as to why it is appropriate to extend regulation to these activities, and provides the CAA’s initial reaction to those arguments.

Argument 1: Designated airports do have market power in relation to commercial activities

2.4 It is argued that designated airports do have market power in relation to activities which fall outside the definition of airport charges to be regulated under the Airports Act. The single till ensures that the airports do not make large accounting profits in relation to these activities.

12 The CAA Approach to Economic Regulation and Work Programme for the Airport Reviews, October 2000, p. V.

13 The Office of the Rail Regulator (ORR) set Railtrack’s charges on the basis of a ‘single till’ where all of Railtrack’s non-franchised income (i.e. from freight and property) are taken into account when setting the passenger access charges.
2.5 Unregulated activities can be divided into three broad categories:

- services and facilities which do not fall under the umbrella of regulated charges but which are nevertheless essential for users to provide services from the airport (e.g. space for check-in desks) and can only be provided economically by one supplier;

- services and facilities provided to airlines which are not essential or which are competitively provided (e.g. business lounges, ground handling services);

- other services and facilities provided to consumers or other service providers (e.g. retailing, provision of office space, car parks and hotels).

2.6 Unregulated facilities which are essential for users to provide services at an airport and which are solely provided by the airport are little different, in principle, from activities which are covered by regulated airport charges. The CAA therefore agrees that there may be a case for extending regulation to these activities, although the single till is only one means of doing so. All that the single till does is to ensure that the profits will eventually be taken into account or clawed back. It does not in itself prevent airports from setting charges for these activities at the profit-maximising level or from reaping unexpected short term gains from these activities.

2.7 The main debate concerns the second two categories outlined above. These activities are, by definition, not essential for users to provide services from the airport, or are provided subject to competition. They are distinct from the basic sole provider activity of designated airports, which is the provision of essential infrastructure for providing and utilising air transport services. These categories, in contrast, provide facilities or services which either replicate services and facilities which are provided outside airports (such as retailing activities), are not essential for providing or using air transport services (for example airline business lounges, food outlets), or which are subject to some degree of competition or are otherwise directed purely at passengers (for example long-term car parks) such that reducing aeronautical charges to compensate for high profits fails to compensate directly those who may lose out. The prima facie case for subjecting these categories to ex ante economic regulation, beyond the protection provided by competition law, is weak. Even if it were shown that there was a case for regulation, the single till is highly unlikely to be the best approach, and may not have any benefits at all.

2.8 The main argument which is raised is that these activities might earn high profits because the airports have a degree of market power in relation to them. The CAA would agree that an airport might, under specific circumstances, have a degree of market power with respect to some of these activities, e.g. short-term car parks. There might however be different reasons why an airport is able to earn high accounting profits from its commercial landside activities, the possible abuse of a dominant position being just one of them. An airport might be able to
derive high profits from its duty-free sales because it was granted exclusive permission to operate these tax exempt activities. While there is some competition from the airlines’ in-flight duty-free sales, and from the airport at the other end of passenger journeys, this competition is limited. It would also be possible for an airport to earn economic profits, in a competitive market, due to superior performance in attracting passenger retail activities.

2.9 Market power is usually associated with restricting output to achieve higher prices. An airport would then, for example, hold back building additional car parking facilities although available space would allow it to do so, and although the users’ willingness to pay for additional facilities would justify such an investment. Any such artificial restriction of space for the purpose of commercial operations is however not obvious at the regulated airports. The incentives appear to point into the opposite direction to develop the maximum amount of available space for commercial services. Indeed this has been one of the major criticisms of airport conduct in the past.

2.10 Under these circumstances, high accounting profits from commercial airport activities are not necessarily the result of abusive behaviour. They can equally result from the fact that space at or close to the airport is in short supply but highly valued and in strong demand. Scarcity rents are a result of this imbalance (which may also be reflected in a high valuation of land or space) which are by no means different to those economic rents achievable at other highly valued locations. This is mirrored by the fact that BAA compares its retail prices at its London airports with those observable at High Street locations. Both include a premium achievable at those favourable locations. Consequently, any assessment of whether the prices for commercial goods and the rents for the corresponding premises are abusive has to take these location rents into account. The argument is similar for space for car parking, airport offices, on-airport hotels, and many other commercial activities.

2.11 Even if the airports did have some market power in commercial activities, that would not in itself justify regulation. Some degree of market power exists in many markets to a greater or lesser degree but economic regulation has not been introduced. For example, economic regulation is not applied to motorway service stations, out of town shopping centres and supermarkets, or landlords with property on Oxford Street. Instead, competition law has been seen as adequate to deal with potential abuses of market dominance. In the case of airports, this is supplemented by Section 41 of the Airports Act, and the prospect of a public interest finding by the Competition Commission.

2.12 Finally, it is important to recognise that the single till does not in itself prevent the airport from setting high prices or demanding high rents for commercial activities even if it had market power. Alfred Kahn stated in his 1991 evidence for the US/ UK arbitration concerning Heathrow user charges:

“It is no more consistent with economic efficiency or fairness if prices for restaurant meals, duty-free-sales, car parking or other commercial services at
airports are set at excessive levels, than if airlines were subjected to excessive charges for aviation services. Moreover the inefficiency resulting from the former monopolistic prices would not be mitigated, but compounded if the excess revenues were used to hold other airport charges below the level of marginal cost.\textsuperscript{14}

2.13 While these prices might be necessary to ration demand for constrained and highly valued commercial development, the single till merely transfers the profits from this to lower the regulated charges. Even if the objective is to ensure that market power in commercial activities is not exploited, the single till is not the best means of achieving it. The structure of prices for aeronautical and commercial airport services which results from a single till is probably not the most efficient one.

2.14 If a case were made for economic regulation, direct regulation of those activities or an overall price cap would be the more obvious candidates to adopt, not simply the appropriation of the returns to subsidise airport charges. Neither of these alternatives would however be without its own problems\textsuperscript{15}. Their main implication would probably only be:

“really just shuffling the rents without solving the basic problem of resource allocation. Instead of airport charges being held at artificially low levels, rents would be held at below market clearing levels in order to allow the airport charging market to clear. This implies exactly the same problem of resource mis-allocation, except that now the retail outlets lucky enough to have the ‘grandfather rights’ to occupy terminal space now experience much higher profits ...”\textsuperscript{16}

2.15 The CAA is not convinced that airports have substantial market power in relation to commercial activities such that economic regulation is warranted. Moreover, even if it were established that such market power existed, the single till would not be the preferred solution.

\textbf{Argument 2: Commercial revenues are derived from the airlines’ passengers}

2.16 The second argument is that it is the airlines which provide the passengers at an airport, and that they should therefore also benefit from profits generated by passengers buying in airport retail outlets or using airport car parks. At one level this is a distributional or equity argument. The CAA has already indicated its view

\textsuperscript{14} Kahn A,1991, \textit{op. cit.}, p. 20, paragraph 46.

\textsuperscript{15} Some of these options are discussed in Burns, P., 1994, \textit{Discriminatory Pricing and Accounting Method in the UK Regulated Industries}, CRI Research Report, pp. 208-10; Jones, I./Viehoff, I., 1993, \textit{The Economics of Airport Slots}, n/e/r/a \textit{Topics} 10, p. 16 (available at \texttt{www.nera.com}); and Starkie, D./Yarrow, G., 2000, \textit{The Single-Till Approach to the Price Regulation of Airports}, paper commissioned by the CAA Economic Regulation Group (available at \texttt{www.caerq.co.uk}).

\textsuperscript{16} Burns, P., 1994, \textit{op. cit.}, p. 209.
that allocation of rents should not be, in the first instance, the key driver of the price cap.

2.17 One efficiency argument against this view is that since the airport is the entity which promotes and develops the commercial activities, the single till has the effect of an additional tax on profits which serves to dampen the airports incentives to develop it efficiently or effectively. Transferring the rents to airlines (which is the impact at congested airports) does not give airlines any incentives to develop the commercial activities because they are not in a position to do so.

**Argument 3: The single till ensures that the price of the airport ‘product’ is kept to competitive levels**

2.18 Although the Airports Act only directly applies to airport charges, it can be argued that the bundle of services being provided by an airport, including commercial services, amount to a single ‘airport product’. According to this argument, consumers care only about the total costs of using the airport, including the component of their ticket price attributable to airport charges to airlines, the costs of car parks and other forms of surface access, the cost of meals and drinks in the terminals, and the retail prices in the airport shops. Consumers are indifferent if retail prices are high, if the result is that airport charges are low. By analogy, consumers are unlikely to care if a pair of shoes is priced at £10 for the pair, £10 for the left shoe with the right shoe free, or £10 for the right shoe if the left shoe were free. Clearly, as a matter of empirical observation, airport customers are not likely to view the airport product as a single bundle, and the CAA does not consider that this is a strong argument in favour of the single till.

2.19 A variant of the argument states that the objective of economic regulation is to mimic a competitive market. In a competitive market for airports, the total bundle of prices at an airport would be kept at levels which would only permit a normal return on capital. If returns were higher than this, entry should occur up to the point at which returns were returned to normal. This would apply to all of the services being provided, not just the aeronautical services. It is therefore legitimate to regulate the prices of all products which generate an economic rent, locational or otherwise, since in a truly competitive market locational rents would be eroded, or would be counterbalanced with lower returns on aeronautical activities.

2.20 There are some problems with this argument. First, the characterisation of a ‘competitive’ market is very crude. Given the cost structure of airports and the diverse services which they provide, and even if there were no planning restrictions on airport expansion, it is unlikely that the provision of airport services would be perfectly competitive. Price competition on airport charges may not be so intense as to compete away all locational rents. Moreover, given that capacity constraints are the key issue for the industry, this characterisation assumes that scarcity rents which follow from planning restrictions should
necessarily be clawed back by the regulatory regime. This has not occurred in the case of supermarkets, which also benefit from planning constraints, or in other markets where scarcity rents exist, and may compromise economic efficiency.

2.21 Second, most of the economic rents accruing from commercial activities relate directly to passengers, not to airlines. Retailing, food and drink, and surface access are obvious examples. But the single till does not have the effect of reducing prices in the shops, for food, or for surface access. Instead it uses those rents to reduce aeronautical charges. At congested airports this is unlikely to be passed back to passengers through lower ticket prices, but will primarily generate rents for airlines and may comprise economic efficiency. This is because airfares are determined by available airline capacity, which is restricted by capacity constraints not airports. Even at non-congested airports, the degree of complementarity between commercial activities and aeronautical activities is unlikely to be close enough that using rents from commercial activities to reduce aeronautical charges is an effective way of protecting passengers.

**Argument 4: Removing the single till will generate windfall gains for airport shareholders**

2.22 The CAA said in its position paper that its approach to airport regulation will focus on monopoly behaviour which is likely to reduce economic efficiency rather than the distribution of non-monopoly rents. The CAA nevertheless recognises that a regulatory framework needs to be sustained over time. The impact of a move from a single till to a dual till on the level of airport charges depends on the amount of economic profits generated in the airports' commercial areas which are taken into account under a single till but which would be left aside under a dual till. If for example space for commercial operations within the perimeter is severely constrained but highly valued by the demand, the corresponding scarcity rents would, under a dual till, fall to the airport. As a consequence, airport charges and the overall level of profits might both increase. High economic profits could put pressure on the regulator to intervene, to clawback those profits at the next quinquennial review or to impose tighter price constraints. This may counteract the long term stability of a dual till approach.

2.23 If, on the other hand, a dual till would increase an airport’s incentives to invest appropriately in new facilities, the scarcity rents would in the long run decrease (subject to exogenous constraints, such as restrictions on planning permission). Even if planning restrictions constrained new investment, a move to a dual till would probably also increase pricing efficiency at congested airports because the difference between the prevailing and the market-clearing level of airport charges

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would become smaller. This would then be accompanied by a non-transitory transfer of scarcity rents from the airlines to the airports. This redistribution would be a by-product of an increase in economic efficiency and, as such, the CAA is in a neutral position as to the question to which party the scarcity rents should fall.

2.24 However, as the MMC stated in the 1996 BAA review,

“to abandon the single-till approach and to base charges on costs of supplying airport facilities would allow BAA to make very large profits on its commercial activities, since we do not have the power to introduce any windfall tax on such profits”

This continues to be the situation. The CAA welcomes views on how the problem could be addressed, consistent with the objectives of the review and existing legislation.

**Argument 5: The single till is simple to administer and therefore reduces regulatory intervention, rather than increasing it**

2.25 One advantage of the single till is that it is relatively straightforward to administer since it does not require a complex cost allocation between the aeronautical and commercial activities. Some forms of cost allocation required under a dual till might be complex, difficult to administer. They may require detailed policing of the cost allocation frontier by the regulator, and may draw the regulator into detailed oversight of elements of airport business because future cost allocations would be the driver of airport revenues. On the other hand, airport regulation becomes more light-handed because the CAA would no longer gather information about the airports’ commercial activities for the review process.

2.26 The CAA recognises that this is a legitimate concern. To address the concern the CAA has commissioned advice from Europe Economics and Mazars Neville Russell on the feasibility of implementing a dual till. This work will identify the scale of common costs between the regulated airports’ aeronautical and commercial activities which are often seen as a major concern in policing robust cost allocation schemes.

**Conclusion**

2.27 This section discussed the high level arguments for and against the single till. The CAA’s view is that the high level arguments in favour of the single till are not compelling. The basic presumption is that economic regulation should apply only to the core monopoly functions that an airport provides and should not be extended to cover other activities.

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18 MMC 4, op. cit. paragraph 2.22
The case in favour of the single till then appears to rest on a demonstration that it has clear and unambiguous benefits in terms of economic efficiency, through promoting the best use of resources and the best investment incentives. This is discussed in the next section.

Do respondents agree that this section raises all of the high level arguments for and against the single till? Do respondents agree with the CAA’s analysis of the arguments?
3. Does the single till enhance economic efficiency?

3.1 While the CAA has a high level presumption that economic regulation should not be wider than necessary, it is important to consider the effect of the single till and the dual till on economic efficiency. Continuing to extend the scope of economic regulation could be justified where it led to a demonstrable improvement in the economic efficiency, the best use of resources and the best incentives to make the right investments over time. The areas where the single till might have an effect can usefully be categorised into the following:

- Making the best use of aeronautical facilities;
- Incentives to devote space to aeronautical and commercial activities;
- Investment incentives.

This section considers whether the single or dual till would perform better against the three categories above. Before that the section discusses the more generic argument that demand complementarities could result in the single till performing well against a criterion of economic efficiency.

**Demand complementarities and economic efficiency**

3.2 There is little argument that there are some complementarities in demand between an airport’s aeronautical business, and its commercial business. If more passengers use an airport, commercial revenues (and commercial costs) are likely to be higher. If these complementarities were very close, they could provide an efficiency argument in favour of a single till approach to price setting (where the single till was set in relation to activities which displayed such complementarities). Examples of competitive markets where this occurs might include supermarkets which provide free car parks to attract customers, or the owner of a shopping centre which sets lower charges to anchor clients if that means that other users would be willing to pay more. Extending it to regulation, the argument runs that aeronautical prices should be set such that output increases to the point where the incremental revenue derived from an additional passenger or flight across aeronautical activities and commercial activities, equals the incremental costs of serving the additional passenger or flight.

3.3 This argument is echoed by the Australian consultancy NECG, which argued that “the single till is not necessarily inefficient if the revenues generated from

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19 'Incremental revenue' here relates solely to the additional revenue derived from that passenger, not the incremental revenue deriving across all passengers.
aeronautical charges are less than the incremental costs of those services. It is argued that the test for cross-subsidisation between the two areas should take this interdependency and the extra revenue for commercial activities into account, or that cross-subsidies, as defined in the usual sense, do not necessarily need to be of regulatory concern.

3.4 The argument can be extended to a consideration of dynamic efficiency. Ultimately, the argument runs, it is efficient for capacity to be increased to the point where the incremental revenues derived from the marginal passenger equal the incremental cost of the additional capacity. If prices are set only on the basis of the direct costs of the aeronautical business, and if the price cap acts as a constraint on the airport (i.e. if left to itself the airport would choose a higher monopoly price, and correspondingly lower output), then valuable additions to capacity and outputs might not occur.

3.5 As a theoretical proposition, and where demand complementarities are indeed very close, this is the strongest efficiency argument in favour of the single till. However, there are a number of counter arguments.

3.6 First, demand complementarities may not be as strong as is indicated above. While increasing passenger numbers is likely to have the knock on effect of increasing demand for retail activities, surface access, hotel space or other commercial activities, they are unlikely to be perfectly complementary. Passengers’ price elasticities for different kinds of airport services vary widely, in the aggregate as well as among different types of travellers. It is therefore significant how the individual services are priced (as opposed to simply equating aggregate revenues to aggregate costs). “Economic efficiency therefore requires that these various services, along with airport services proper, be priced separately and severally...” As long as the different airport services are not perfect or very close complements, the interdependencies in demand are not a convincing reason to treat an airport’s commercial services in the same way as the core aeronautical services.

3.7 Second, the argument is strongest where changes in aeronautical prices have a significant effect on aeronautical demand. But at congested airports the impact is likely to be very small, or even positive (an increase in aeronautical charges might increase demand if scarce capacity is better used). At uncongested airports it is an empirical question. Also, if the airport is able to price differentiate, the impact will be less. Thus the argument would not seem to apply at congested airports. These points are discussed further in the next section.


3.8 Third, the argument is based on the presumption that price (or the direct incremental revenue of the additional unit of output) should reflect marginal costs, which, when there are complementarities, arguably include the net revenues and costs of commercial activities. But if this is the objective, then other economic costs should also be taken into account - the opportunity costs of scarce capacity at congested airports, for example. The CAA is required to set a cap on airport charges, and has indicated that it will not set be attempting to take market clearing prices into account as its primary objective in so doing. Taking commercial revenues into account, but not other socially important costs, is arguably somewhat arbitrary.

3.9 Fourth, the argument assumes that the accounting profits of the commercial business reflect the full economic costs of the commercial business. They may not. Land and facilities around airports have a location value which could be counted in costing those facilities.22 There are two counter arguments. First, that this could be incorporated within a single till approach merely by properly valuing the commercial assets. Second, the ‘proper’ valuation of these assets has been a contentious issue in previous reviews, and has not previously been taken to mean the full opportunity costs of commercial facilities (and by implication the locational or other rents).

3.10 Finally, the airport itself has incentives to set aeronautical prices to reflect demand complementarities. Where complementarities are important (i.e. where reduction in airport charges would result in a substantial increase in passenger numbers, which would in turn increase commercial profits) the airport will have strong incentives to set low aeronautical charges in any case (particularly if they are able to price differentiate effectively). Therefore any potential loss of economic efficiency is likely to be substantially reduced, and needs to be set against the presumption that scope of economic regulation should not be unnecessarily wide unless the efficiency arguments in favour are compelling.

**Making the best use of resources - does the single till result in more efficient pricing of aeronautical activities?**

3.11 A change from a single till to a dual till approach would make little difference with respect to the level of airport charges if returns on commercial activities did not encompass some economic rents. However, if UK designated airports achieve high profitability in these areas, a move to a dual till would lead ceteris paribus to an increase in permitted airport charges. This would have different effects at capacity-constrained and non-constrained airports.

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22 See, for example, NERA, A critique of the NECG paper examining the dual till approach: A report for the Sydney Airports Corporation, August 2000, pp12-14.
The effect at capacity-constrained airports

3.12 Generally, airport charges provide efficient signals for the use of capacity if they reflect the economic costs of providing the services. While the economic costs of long term development depend on the location of the airport itself, they are in the short term low or zero if there is available airport capacity. Under these circumstances, an additional aircraft operation does not exclude or hinder other airline demand to operate at the site. Such costs are, however, very significant at capacity-constrained airports because there is direct rivalry in the use of available space and slots. Every airline operation then automatically excludes an alternative use of the airport facilities at the same time. It is the value of this foregone operations which determines the opportunity costs. While they are neither directly included in the financial costs of an airline or the airport, they are part of the willingness to pay for airport access. Consequently, they determine what the market-clearing price at the airport would be.

3.13 Under a dual till, an increase of airport charges to a level that remained below market-clearing levels would still imply that demand was sufficient to fill all available slots at the airport. It is unlikely that the application of a dual till approach would lead to airport charges at a level that would cause carriers to give up slots which would not be picked up and used by other carriers. A dual till would therefore cause a redistribution of scarcity rents from the airlines to the airport. At the margin, it could however also lead to a more efficient use of those slots which were given up and re-allocated. As David Starkie notes:

“there is an argument that some increase in charges would probably improve the situation even if it were not large enough to actually clear the market. This arises from the importance of the structure of charges regardless of whether the average level of charge clears the market. .. An increase in charges will .. induce .. different substitutions among the sub-markets (there will be a greater reduction of demand where price sensitivities are higher). .. For example, if low value users are priced out, there will be more capacity available for high value users. Thus, although the overall allocation will tend to be inefficient, there will at least have been some movement in the desired direction”

3.14 In his 1991 evidence for the US/UK arbitration concerning Heathrow airport user charges, Alfred Kahn points out that:

“if demand is increased sufficiently - or is already so encouraged by prices below market-clearing levels - as to produce crowding out, scarce airport facilities will probably have to be rationed ... by administrative means, such as

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grandfathering which strongly favours incumbent airlines, weakens inter-airline competition, and is economically inefficient.”

3.15 During the last review of Manchester Airport, the MMC stated that:
“higher charges at many airports, most noticeably Heathrow, would in practice have very little effect on demand, given that airport charges account for a very small proportion of air fares and can be significantly below the value to the airlines of the facilities used.”

3.16 NECG also criticised the fact that the:
[single till] “approach can prevent airports from setting prices for aeronautical services that will ameliorate the congestion problems” is “not a compelling argument against the single till” because “adopting either a single till or a dual till will have very little impact on this constraint.”

3.17 It is therefore in the first instance an empirical question of whether and to what extent a dual till would lead to a better use of given airport resources. The effect a dual till would have on air fares may be different to the effect on airlines. The reason for this is that, compared with a single till, the airlines at congested airports would not pass the increase in airport charges on to passengers. Under a single till, such airlines already set airfares according to the willingness to pay for flying out of these congested airports given the available number of flights, which is usually much higher than the associated costs for airlines to operate there. Competitive pressure to bring the fares down is limited by the fact that other carriers are constrained in their ability to get slots and offer comparable alternative services. Therefore, airlines already determine the level and structure of airfares by targeting the passengers’ individual willingness to pay. This fundamental would not change under a dual till (unless capacity is itself increased). An increase in airport charges would therefore in the first instance reduce the scarcity rent, which the airlines are able to achieve and which are reflected in the corresponding slot value (if an efficient slot market existed). Alfred Kahn summarises:

“Airline fares in and out of airports whose capacity is rationed by decree tend therefore to be higher than fares where the necessary inputs – landings, takeoffs and access to terminals – are not rationed. In these circumstances a reduction of charges to carriers .. will not reduce the prices they charge; these will to continue to reflect the scarcity value of the underpriced access to the heavily used airport that they enjoy.”

26 MMC5, Manchester A irport plc.,– A report on the economic regulation of Manchester A irport plc., Monopolies and Merger Commission 1997, paragraph 2.15.
28 Compare Kahn, A., 1991, op dt., p. 21 (paragraph 47) and Sydney Airport, 2000, op. dt., p. 63.
29 Kahn, A, 1991, op dt, p.21 paragraph 47.
"The contention therefore that since the international travellers who pay the fares out of which the airlines recover the traffic charges at Heathrow are also the ones who generate the revenue at duty-free shops, it is they who should in fairness receive the refunds of assertedly excessive aggregate airport revenues in the form of reduced traffic charges commits a simple economic error. It fails to recognise that the level of traffic charges at Heathrow merely determines the distribution of pure economic rents between BAA and the airlines, and reductions in them will not change the prices that travellers pay for air services."

**Effects at Uncongested Airports**

3.18 At uncongested airports, the impact of a dual till on allocative efficiency is less clear. If the airport is operating at a size where economies of scale and scope exist, and therefore where average costs are above marginal costs, a move to a dual till carried through by the airport could drive away demand which would in principle be willing to cover its marginal costs. If an airport cannot (or is not allowed to) price differentiate between different users, or recover revenues from non-aeronautical activities, there will be a corresponding loss in allocative efficiency. This has been stated explicitly in the recent pricing proposal by Sydney Airport:

"When marginal costs are falling, there may be a logic in attempting to recover a greater portion of total revenues from non-aeronautical services, to encourage increased use of an aeronautical facility."

3.19 At a high-level, this argument therefore addresses the question of which services should be taken into account when calculating the optimal pricing structure over a range of different services, even when there are no complementarities in the demand for aeronautical and commercial services. Under a dual till, mark-ups on the marginal costs of an additional passenger or aircraft would be necessary to achieve a commercial return on airside activities with economies of scale.

3.20 Under a single till, the scope of services on which mark-ups on marginal costs could be charged would increase. It has been shown that the more services are

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31 This assumes that the price cap set acts as a binding constraint on the airports charges. If the airport sets prices at levels below the price cap the cap itself becomes superfluous. This might occur either if the effect of demand complementarities were such that pricing aeronautical facilities below costs was profitable, or if the airport was able to efficiently price differentiate, and set low prices to those categories of user with a lower willingness to pay for access.

32 Sydney Airport, 2000, op. cit..

33 Contrary to the discussion about demand complementarities, the cross-elasticity of demand between aeronautical and commercial services is not crucial for this argument. Vice versa, economies of scale are the driver for this "Ramsey pricing" argument while demand complementarities can also exist with constant returns to scale at the aeronautical site.
included into the basket for calculating optimal prices, the more efficient the outcome will be. "Consumer welfare will by definition improve .. when a new product is added to the Ramsey optimisation formula." Mark-ups on the costs of commercial airport services could for example cause a smaller loss in welfare than on aeronautical services if the corresponding demand were less elastic. There would be no welfare loss at all if rents resulting from scarce and highly valued space at the commercial site of an airport would be used to bring charges for aeronautical services at uncongested airports closer to marginal costs.

3.21 This line of reasoning would ultimately lead to the conclusion that the entire economy should become part of the public sector which then optimises the pricing structure. The informational constraints of the regulator are however neglected within such an approach, as are the advantages of decentralised decision-making. The paradox inherent in the argument is that “deregulation must be fourth-best or worse”. The approach also fails to address dynamic investment incentives in a system with a more narrow focus on the various activities of an airport.

3.22 It might also be the case that uncongested airports also operate under constant or even decreasing returns to scale and therefore rising marginal costs. The empirical validation of strong operational economies of scale and scope beyond a relatively small airport size has been difficult. This might indicate that the size of an allocative efficiency loss caused by a move to a dual till would, if it existed at all, be relatively small.

3.23 The size of the allocative efficiency loss will also depend on the elasticities of demand for aeronautical services at uncongested airports. Contrary to the situation at congested airports, airlines may pass part of the change in airport

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36 Damus, S., 1984, op. ct., p. 60.

charges on to passengers. If demand is relatively inelastic reducing charges may have only a limited effect in increasing use of the airport. If it is elastic (i.e. a reduction in airport charges would result in a substantial increase in use of the airport) then there may be more significant benefits. Even if demand from some users is relatively elastic, if airports can differentiate their pricing, and set lower prices for that category of user, the loss of use of the airport would be minimised.

3.24 There are empirical issues to be resolved here, but it is not clear that the single till results in substantial benefits at non-congested airports, while at congested airports it has the effect of reducing the incentives for the best use of scarce facilities.

**The Impact on the Allocation of Available Space**

3.25 A dual till might change the incentives of an airport to use available space, for example at an existing terminal, for aeronautical versus commercial purposes because there is a corresponding change in the relative profitability of aeronautical and non-aeronautical activities and services. Regulation of aeronautical charges, but not commercial activities, may result in a bias in favour of using space for commercial activities because the rents are greater. While this could be a problem in principle, it is not clear whether the single till or the dual till performs better in this regard.

**Reasons why the single till might reduce the resource allocation to commercial facilities**

3.26 The effect of the single till over time is to use the accounting profits generated by commercial activities to reduce aeronautical charges. This reduces the long run profitability of commercial activities, and therefore reduces the resource allocation towards commercial facilities. This argument is correct in principle, but it does not eliminate any focus on commercial activities. Within each five year price control period the airport is free to make whatever profits it can from its commercial activities since these are not directly regulated. While commercial activities may not make as high profits as they could under a dual till, the difference may not be very great. In the past some airlines have been critical of the proportion of the available space used for commercial as opposed to aeronautical activities. More generally, there is little evidence that airports have not been making strong efforts to grow their commercial businesses under the single till.

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38 The rate of return which is achievable with an alternative investment or use of the facility is also called the 'opportunity costs'.
**Reasons why the dual till might increase the resource allocation towards commercial facilities**

3.27 If the single till has the effect of reducing aeronautical charges, then it has the effect of reducing the incremental return on aeronautical facilities within the price control period, compared to commercial facilities. The effect of this is likely to be to reinforce the effect noted above, and to reinforce the bias towards commercial use of terminals. Under a dual till the incremental return on aeronautical facilities would be increased, with the effect that incentives in the medium term would be to increase the resources devoted to aeronautical activities. This would be reinforced if service quality is properly taken into account by the airport.

3.28 The effect of moving to a dual till on incentives to allocate space between aeronautical and commercial activities is ambiguous. The effectiveness of incentives to provide service quality are likely to be significant. If moving to a dual till were likely to be detrimental in biasing the airport’s incentives towards commercial activities, it is possible that the form of application of the dual till could act as a remedy. For example, areas of space in terminals which could be allocated either way could be costed for the aeronautical till at their opportunity cost (i.e. the profit foregone by not using them for commercial activities).

**Investment Incentives**

3.29 Compared with a single till, the incentives to invest might change under a dual till. This might affect the level of investment, as well as the division of investment between aeronautical and commercial activities.

**Investment incentives under the current framework**

3.30 Under the single till approach and with the price cap reflecting an appropriate rate of return on the overall regulatory asset base (RAB), new investment is included into the RAB and remunerated with the airport’s estimated cost of capital.

3.31 An airport’s incentive to undertake new investment is then determined by a comparison of return which the regulator allows and the airport’s true cost of capital. It is well known that this can have incentives to invest excessively if the allowed return is above the true cost of capital. One the other hand, it pays for the airport to alter investment behaviour once the price cap has been set. A simple reduction in investment might enable the airport to increase its return, at least in the short term. The airport also has an incentive to switch capital expenditure to those projects which earn a higher return.

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3.32 If commercial revenues and costs are not included in the price cap, there might be an extension of the corresponding commercial planning horizon. Investment incentives under a single till appear to favour short-term commercial investment projects. It has also been argued "that the dual till approach is likely to result in a greater level of dynamic efficiency through encouraging commercially viable investment in non-regulated services."  

3.33 More appropriate incentives to develop commercial activities would be beneficial if the airport was not capacity-restricted, that is if the developments would not hinder the development of aeronautical facilities. However, the single till has been criticised for offering too high an incentive to develop commercial non-aeronautical developments, especially at the congested airports of Heathrow and Gatwick.  

3.34 While it would be difficult for the regulator to assess the efficient balance between aeronautical and non-aeronautical activities, a move to a dual till would change the opportunity costs of the development of either part of the airport business:  

- On the one hand, the rate of return on aeronautical investment might increase under a dual till;  
- On the other hand, the rate of return on non-aeronautical investment might increase as well.  

3.35 Thus it is ambiguous how the relative opportunity costs and benefits would change and hence how the relative use of constrained airport space would change.  

3.36 However, the incentives to invest at an unconstrained site are also influenced by any demand complementarity between aeronautical and commercial services. As the return on both sides would increase, this would give increased incentives to invest in aeronautical facilities to increase passenger throughput.  

3.37 On the other hand, the regulator would within the traditional rate-of-return based price cap approach determine the asset base and would subsequently derive revenue requirements which enable the airport to earn a reasonable rate of return on the assets included in the base. Under both the single till and the dual till, new investment in aeronautical facilities would automatically be included in projections of how the asset base would change during the next regulatory period. Assuming no difference in regulatory risk, the approaches therefore appear to have no difference as to how new capital for aeronautical purpose is remunerated. Any difference in incentives to invest would stem from the change in investment incentives for non-regulated commercial developments.  

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3.38 Of course, many investments will support both aeronautical and commercial activities (for example new terminals). More generally, investments which result in greater passenger numbers will generate additional commercial revenues. Long run returns on these investments will be increased under a dual till, since the commercial part of the return will not longer be clawed back. Thus incentives to invest in increasing capacity are likely to be greater under a dual till than under a single till.

Cost of Capital Estimation

3.39 The single till requires the regulator to assess the airport company’s cost of capital on a much broader range of activities than a dual till. The risk for regulatory failure is therefore lower under a dual till approach which would also free the regulator from the need to take the different kinds of the airport companies’ activities (and associated different risks) into account. Clearly, however, estimating the cost of capital for the aeronautical activities is not straightforward.

Conclusions on economic efficiency and the single till

3.40 The effect of the single till versus the dual till on economic efficiency is not clear cut as a theoretical principle, and there are various empirical questions which would need to be resolved in order to come to a firm conclusion. The case against the single till is stronger where airports are congested, where the single till has the effect of aggravating the imbalance of supply and demand and therefore the mis-use of capacity at those airports. It can also be argued that incentives to increase passenger numbers would be stronger under a dual till since the aggregate return on investments would be increased. At uncongested airports the case in favour of the single till is stronger, but not clear cut. This potentially raises the question of whether the same principle should be applied at each designated airport.

3.41 Subject to responses to this paper, the CAA’s view is that the next steps are to investigate in more detail precisely how a dual till could or should be implemented, the effect this would have on the aeronautical charge cap, and to assess the empirical issues raised in relation to the arguments in this section.

Does the discussion above encapsulate the key questions which need to be addressed in determining whether the single till or the dual till enhances economic efficiency? What are respondents views on the CAA’s initial analysis, and on the empirical questions raised?
4. Implementation of a Dual till

Criteria for the definition of different tills

4.1 Under the single till approach it is necessary to distinguish between the airport activities that are covered by the till, and those that are not. While this is relatively easy for most parts of an airport, the scope of the single till is in some way arbitrary. This is because airport-related activities and other non-airport related activities of the regulated company cannot always be clearly separated. For example the till for BAA plc. includes the costs and revenues of Heathrow Express, but not those of its commercial hotels, which have been moved out of the till following their transfer to the subsidiary, BAA Lynton. Another related example is that Manchester’s single till does currently include the airport’s consulting and ground handling activities. Additionally, while BAA’s international engagements in the US and Australia are not covered in the till, the costs and revenues of Manchester Airport’s international activities are.

4.2 Under a dual till approach it is necessary to define the activities that the regulated till would cover, principally to determine which costs and revenues should be taken into account when setting the price cap for the airport charges. Defining the different tills could be carried out according to the approaches outlined below.

‘Airports Act Approach’

4.3 Section 36 of the Airports Act defines airport charges that can be regulated by a price cap as “(a) charges levied on operator of aircraft in connection with the landing, parking or taking off of aircraft at the airport (including charges that are to any extent determined by reference to the number of passengers on board the aircraft, ...; and (b) charges levied on aircraft passengers in connection with their arrival at, or departure from, the airport by air”. It would be possible to define a regulatory till which directly based on this. As a consequence, neither the revenues nor the costs associated with any other airport activity would be taken into account by the CAA when determining the level of airport charges. The ‘aeronautical till’ would therefore be relatively narrow.

4.4 Such a definition would ignore activities which are clearly related to an airport’s core activity. For example, check-in desks and the charges paid by ground handling companies are not part of the price cap. Under a dual till approach, an airport would then have the incentive to circumvent regulation through the monopolistic setting of the charges for these non-regulated, but nevertheless...
essential, core activities. However, the incentives for an airport to charge monopoly prices to ground handlers (e.g. for the use of the apron) and for airlines (e.g. for the use check-in desks) could be constrained by regulatory scrutiny under section 41 of the Airports Act or under competition law. It can also be noted that incentives to circumvent the price cap in this way exist under a single till.

‘Monopolistic Bottleneck Approach’

4.5 A ‘bottleneck approach’ would systematically identify those core airport activities which:

• are necessary for the operation of airlines; but

• cannot be economically duplicated, produced at another airport or outside the airport perimeter.

4.6 These criteria were taken by the Australian Consumer and Competition Commission (ACCC) when deciding which airport activities should be declared, and therefore subject to price control or surveillance.

4.7 The criteria are stronger than the usual test for market power under competition law. The higher hurdle would be justifiable by the argument that ex ante regulation should only cover robustly identified airport services which are essential input facilities for airlines. ‘Essential’ means that the use of the corresponding airport service is not only convenient for airport users but a necessary condition for civil aviation functions to operate at the airport.

4.8 The criterion of economic duplication questions whether there is a possibility to provide the service under consideration:

• on the airport site itself. If it were, for example, possible for third parties to duplicate a facility, the derived airport service would consequently not constitute a bottleneck. Whether this possibility exists depends on whether there are entry and exit barriers, e.g. economies of scale in combination with sunk costs, and whether space and planning constraints would allow such a third party investment.

It would, for example, be possible to duplicate an airport’s ground handling services or a maintenance or freight hangar. Access to the corresponding airport site can nevertheless be an essential facility for offering these services. Competing ground handlers need access to the airside apron space and to an airport’s baggage handling facilities. To build another freight hangar, a

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competitor would also need to have access to an appropriate site within the perimeter.

- **at an off-airport location.** It might for example have a locational advantage to operate cargo and catering facilities at the airport itself. However, off-airport sites could be economic substitutes to provide these services so that strict ‘bottleneck’ do not exist. Off-airport providers would have to have land- and airside access to the airport to deliver their goods and services so that the corresponding access charges would be covered by the definition of core essential airport facilities.

- **at another airport:** Aircraft maintenance, for example, is necessary for airline operations. The carriers are however in principle able to chose among different airports when deciding where to undertake periodic routine checks. Contrary to this kind of heavy maintenance, light maintenance for the day-to-day operation of aircraft cannot be substituted and must therefore be possible at every airport. If this distinction were valid, light maintenance facilities and space ought to be covered by the regulated till while heavy maintenance (e.g. A/ B/ C aircraft checks) should be left outside.

4.9 Access to the airport facilities plays an important role in the assessment of bottlenecks. It is essential for the providers of aeronautical services to have airside access, for example to the apron to deliver refuelling, catering as well as ground handling services. At the landside, different competing transport modes (trains, underground, private and rental cars, buses, taxis) exist so that none of them in itself appears to qualify for being an essential facility. However, it is common to all these transport modes that they need to offload and pick up passengers and goods at the airport. Landside access is therefore likely to be essential to the operation of aeronautical services. An airport that is unregulated in these areas might be able to raise all access charges (e.g. for the use of train stations and vehicle access facilities) up to a level which would include the achievable monopoly rent.

4.10 Table 2 summarises the results which were derived by the ACCC.
Table 2: Identification of bottleneck facilities of airports

<table>
<thead>
<tr>
<th>Airside facilities (runways, taxiways, apron etc.)</th>
<th>Is the airport facility or service necessary for airline operations?</th>
<th>Can the airport facility or service be duplicated under economic criteria?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger processing areas (Check-in desks, customs, lounges etc.)</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Administrative office space</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Commercial facilities</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Catering Facilities</td>
<td>depends on site-specific circumstances</td>
<td>Yes</td>
</tr>
<tr>
<td>Refuelling facilities</td>
<td>Yes</td>
<td>Depends on site-specific circumstances</td>
</tr>
<tr>
<td>Space for refuelling and other ground handling service</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Cargo terminal facilities</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Facilities for light maintenance</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Facilities for heavy maintenance</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Facilities for landside vehicle access</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Waste disposal facilities</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Source: ACCC, 1998, op. cit. p. IX

4.11 The approach makes use of the criteria developed for the identification of ‘essential facilities’, which has been broadly used in regulation and competition policy to regulate access conditions, mainly in the context of a vertically integrated monopolist that both possesses the upstream infrastructure and offers services in the related downstream market.

4.12 The approach would enable the CAA to ring-fence the monopolistic bottleneck areas of the airport with respect to its core activities. The scope of the regulatory till would be larger than the regulated activities because the costs and revenues of monopolistic services which are not covered by the price cap would be taken into account when setting the cap.

4.13 The approach would not neglect potential market power in other ‘non-aeronautical’ commercial airport activities but would implicitly assume that,

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because the related services are neither essential facilities for airlines to operate at the airport nor for passengers to depart and arrive, any abuse of dominance in those areas would best be tackled with under public interest findings, cases under section 41 of the Airports Act 1986 or under the Competition Act 1998. An imposed requirement to publish relevant financial data could ease the process of price monitoring, similar to the conditions which currently exist with respect to 'specified activities'.

'Market Power Approach'

4.14 A 'market power approach' would define the relevant economic markets for different airport activities and would then subsequently assess case by case whether there are substitution possibilities and, correspondingly, whether an airport has a dominant position in these markets. This approach would be based upon the methodology used in standard competition policy investigations of an abuse of a dominant position.

4.15 The degree of market power in a defined market may however depend on site-specific elements and characteristics and therefore could change if demand patterns or the possibilities to access the airport from the landside change. For example, an airport with a high degree of transfer traffic and poor accessibility by different modes of public transport may have some market power for food and drinks retailing and car parking, but if the traffic mix at that airport subsequently changed or public transport connections were improved, the level of market power with respect to these services would fall. In this case, the definition of the regulatory till would have to reflect these changes. It is the CAA's current view that the case for robust market power regarding an airport's landside commercial services appears to be weak, so ex post control of abusive conduct (under section 41, public interest issues or the Competition Act) seems to be more appropriate.

'Accounting Approach'

4.16 As a last option, it would be possible to define the regulatory till from a pragmatic accounting point of view. It would broadly follow the principles set out by one of the above, but would offer a pragmatic interpretation of those principles. This could for example start with an investigation of airport accounts which would try to identify those areas and services that are burdened with a high share of common costs. As these areas are most likely to be vulnerable to opposite and discretionary views on how the overheads should be allocated, they would as a whole be inside or outside of the regulated till. This would reduce disputes about appropriate cost allocation schemes, and increase the stability of the separated accounts over time. If the common costs were only a small percentage of the total costs, this could, for example lead to a regulatory till which would cover only the incremental costs or the stand-alone costs of the aeronautical services.
The problem of cost allocation

Cost allocation under a single till and a dual till

4.17 Cost allocation is already an issue under the single till with respect to BAA because the costs of its corporate activities have to be allocated between the three airports’ activities covered by the single till, BAA’s other commercial activities and the corporate support for the other non-regulated UK airports. With a move to a dual till and a corresponding separation of commercial and aeronautical activities, the problem of cost allocation would nevertheless become much broader in scope, because an airport would have incentives to strategically shift costs into the regulated basket and revenues out of it. This would enable the airport to achieve a higher price cap if it were based on projected revenue requirements to calculate an appropriate rate of return. As a consequence, the effectiveness of the price cap would be weakened.

4.18 The allocation of costs would be relatively easy if there were no economies of scope between the activities of the separate tills. It would then only be necessary to define the tills and to properly assign the direct costs of the corresponding activities to the different tills. For example, the costs for constructing and maintaining a runway are costs which can be directly attributed to the aeronautical till and the costs associated with advertising retail activities could be directly allocated to the commercial till.

Ring fencing and cost allocation

4.19 A dual till and cost allocation framework should only be imposed when the benefits of a corresponding framework more than outweigh the costs associated with adopting the regulatory change. These costs especially include enforcement and compliance costs.

4.20 Once the criteria for separating the two tills have been defined, there is a need to implement the framework. While costs that are directly incurred by a specific activity are relatively easy to assign, in practice the scope for direct cost allocation might be limited because of economies of scope between the different activities and facilities. Consequently most activities will incur a share of the airport’s common costs. In the case of BAA, the corporate overhead costs must also be allocated to the company’s different airports.

4.21 For the separation of the two tills, there is a range of options. At one extreme, the CAA could make a statement of the high-level objectives that it seeks to achieve, and put the duty on to the regulated airports to show compliance with these objectives and derived accounting principles. Any allocation of common costs put forward by the regulated airports would then be approved with discretion subject to whether the accounting methodology seems to be reasonable. At the other extreme, the CAA could lay down a highly detailed and prescriptive set of guidelines and accounting principles.
Both approaches have advantages and disadvantages. A ‘high-level approach’ would be less intrusive but would leave more latitude to the airports in defining direct and common costs and to allocate the latter to their benefit. A high-level approach may also leave the airports with uncertainty whether the chosen approach to cost definition and allocation is deemed reasonable. A ‘specific rules’ approach would be more effective and create more certainty. It may however also be more inflexible, and it may therefore be necessary to revise and change the rules periodically. This may put the sustainability of the approach at a risk.

In practice, a mix of the two approaches with combined elements is likely to be the best approach. This could, for example, consist in activity-focused guidelines with a mechanism whereby the airports could seek to alter the ring-fencing and allocation guidelines during the periodic reviews by convincing the Authority of their superiority.

Possible approaches to cost allocation

There is general support that costs should be allocated directly whenever possible. This leads to the identification of incremental (or avoidable) costs of a specific activity or facility. In addition, common costs can probably be identified which are either specific to the aeronautical activities or to the commercial activities as a whole. For example, the costs for passenger announcements and way-finding cannot be attributed to a specific activity, but are clearly related to an airport’s core business.

Incremental costs of aeronautical or non-aeronautical activities provide the lower ceiling for the associated costs. If these costs are covered by the corresponding revenues, no part of the airport business bears more than its stand alone costs that would be caused if either

- the airport would hypothetically be constructed without any non-aeronautical facilities and operations, or
- the ‘commercial’ facilities would be operated on their own.

With direct costs being allocated and incremental costs therefore identified, the task becomes to allocate the common costs. While this process will necessarily be arbitrary, at least to some degree, two types of approaches are possible:

- accounting based approaches allocate common costs with respect to a predefined rule. A fully distributed cost approach (FDC) would allocate common costs in proportion to physical output levels (e.g. space, passengers). Other approaches of prorating the common costs can be used, like the share of directly attributable costs. This may involve some circularity since prices, revenues or output levels are used to determine the allocation which is in turn used to set prices. Conditions of demand (for example demand elasticities of
different services) are usually not taken into account. This is why FDC may lead to economically inefficient prices;

- economic approaches tend not to recommend a specific rule for cost allocation within the range of incremental costs and stand-alone costs. Between those two boundaries, they argue in favour of a market-based approach to common cost allocation which takes the different elasticities of demand into account. The implementation of such a Ramsey-type cost allocation would be very difficult because there would be a need for the regulator to know how passengers and airlines change their demand behaviour with different relative prices. There are, however, similarities with a more pragmatic accounting-based approach asking what mark-ups are possible in different areas and under different circumstances to achieve the recovery of common costs.

**Monitoring and compliance**

4.27 For an accounting cost-based dual till to be effective over time, the regulatory framework would have to provide a framework for an effective compliance programme that can be monitored and assessed. Therefore the approach will need to address what accounting and non-accounting information is required for auditing an airport regulated on a dual till basis.

**Next steps on how a dual till might be implemented**

4.28 The CAA has commissioned Europe Economics and Mazars Neville Russell to advise it on how a dual till approach could and should be implemented. This advice will encompass the definition of the aeronautical till, approaches to cost allocation, the question of policing the boundary of any ring fence, monitoring and compliance, and the sustainability of the approach over time. The consultants' report will also provide an overview of how other UK regulators (e.g. OFGEM, OFTEL) have coped with the issue of cost allocation between regulated and non-regulated parts of the companies which they regulate.

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