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INVESTMENT INCENTIVES AND AIRPORT REGULATION

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Abstract

Arguments for and against the proposition that price-capped privatised utilities have an incentive to under-invest are examined in the context of airport regulation. The general proposition finds support from generic arguments associated with the hold-up problem and with *ex-post* opportunism. Three counter arguments are then considered: that under-investment imposes additional internal costs on the firm; that the regulated firm can consume its monopoly rent by expanding its asset base; and that it can leverage its market power through seeking excessive investment. Consideration is then given to the empirical evidence focusing on price-capped airports in the UK and Ireland. It is concluded that, on balance, it is probable that the regulated airport companies have inclined towards over-investment.

Introduction

The airport regulator, the CAA, is advised on setting price-caps by the Competition Commission; during the last price-cap review both bodies were reluctant to subject to detailed scrutiny the capital expenditure programme of the four price-capped airports deemed to have substantial market power (London Heathrow, Gatwick, Stansted and Manchester)¹. This reluctance is in part understandable: the relevant Statute, the 1986 Airports Act, requires that the regulator imposes minimum restrictions consistent with its functions and duties, apart from which the CAA believes more than most in regulating with a light touch. But, is such an approach entirely appropriate, statutory constraints notwithstanding; what are the nature of the investment incentives faced by price-capped airport companies and are these likely to lead to too little or too much investment?

Economic Incentives for Under or Over-Investment

Arguments that in general price-capped firms have an incentive to under-invest and 'sweat' assets are usually based on two considerations. The first is a variant of the so-called hold-up problem: infrastructure assets generally have long lives committed to specific purposes, so that there is a risk that regulator(s) might subsequently squeeze prices to an extent that the investment is not fully remunerated.²

¹ For arguments suggesting that, in general, airports might not fully exploit market power and, in so far as they do so, the impact is limited, see Starkie (2002). However, in the case of the London market, market power is accentuated both by BAA's ownership of the three largest airports and by the exceptional nature of Heathrow.

² See Armstrong et.al. (1994), 85-90. The UK airport regulator made an interesting attempt to circumvent this problem at the time of the 2003-05 review by proposing a long-term price path commitment for Heathrow and Gatwick airports. This would have entailed a 20 years commitment on price-caps linked to current capacity and that of Terminal 5, with incentives for new investments. However, the Competition Commission did not support the proposal. (See Hendriks and Andrew, (2004), 114).

The second consideration is that the regulated firm might engage in *ex-post* opportunism by reneging on CAPEX agreed as part of a regulatory settlement thus inflating its return.³ These arguments have loomed large in the theoretical literature and inclined Helm and Thompson (1991), for example, towards the view that privatised utilities will tend to under-invest.

Set against these two arguments that the privatised utilities have an incentive to under-invest, are three counter arguments, two of which take on an added significance when regulators choose not to closely scrutinise CAPEX. First, under-investing, at the same time that prices are pressed down towards competitive levels by the regulator, would mean that supply and demand have to be balanced by mechanisms other than by price alone, often by a diminution in product quality, such as by queuing. But, this will lead to a loss of reputation, the additional burden of managing congestion, disgruntled consumers and probably conflict with the regulator, possibly leading eventually to more intrusive regulation. For management, anything but a quiet life would prevail; thus, under-investment risks imposing significant additional *internal* costs on the firm.

Second, the regulator sets a limiting price, usually every 5 years, with reference to an allowable rate of return on assets and providing the asset-base meets, *overall*, the firm's cost of capital, the firm is able to expand its asset-base without prejudice to its return (although the size and phasing of CAPEX will have to have due regard to various financial ratios). Absent scrutiny of the capital expenditure programme by the regulator, the regulated firm is provided with an opportunity to consume its monopoly rent by expanding its asset-base and by gold plating its investments.⁴ Bear in mind also that managers, when given a choice, usually prefer running large rather than small businesses; size brings status and material rewards. Chief Executives typically by nature are ambitious and large, extensive and expensive assets help to satisfy such ambitions. Such tendencies are frequently channelled into mergers and acquisitions, but in the ex-public sector utilities, opportunities, at least in the UK, of this nature are restricted by regulatory concerns.

Third, it is recognised that in imperfectly competitive markets, firms not infrequently have used as an entry deterring strategy the building-in of excess capacity (for example Dixit, 1980). Although the utilities sector can be characterised by areas of considerable market power, nevertheless, there is often a competitive fringe that can threaten from time to time the core activities of the monopolist. But, (and it is a point generally ignored in the economic regulation literature) the regulated utility is well-placed also to pre-empt such entry by leveraging its market power to expand capacity through an overly generous CAPEX programme, especially when proposed CAPEX is an area treated circumspectly by the regulator. The use by the utilities of such entry deterring strategies has been noted, for example, in the European gas industry (Cornwall, 2004).

Empirical Evidence on Airport Investment

What is the evidence on this general issue in relation to airports? The under-investment/asset sweating proposition would appear to receive strong confirmation from those parts of the London airports system that have been highly congested for a considerable period of time. London Heathrow is the pre-eminent example, but London Gatwick is also reasonably congested; declared runway capacity is constrained at both airports (see Box 1). But, it is debatable whether these capacity constraints represent a deliberate policy by BAA to limit capacity.

The root cause of the limitation on new investment at Heathrow and Gatwick is first and foremost the environmental/planning constraints that make physical expansion at either location exceedingly difficult. The new, very large Terminal 5 at Heathrow, which will do much to alleviate existing terminal constraints, was subject to a planning inquiry record-breaking for its longevity; proposals for extra runway capacity meanwhile are constrained at

3 If the regulated company chose to game the system in this way it would seem more likely that it would seek approval for what was an exaggerated CAPEX; it is not evident that the outcome of the 'game' would be an inefficiently small investment programme.

4 Such an opportunity is exemplified by the Competition Commission's remarks at the last airport price review: "we have not adjusted BAA's forecasts for capital expenditure: even if there is scope for lower costs on some projects, there is in our view likely to be a demand for any cost savings to be spent on additional projects" (Competition Commission, 2002, paragraph 1:14). This has led to suggestions that in these circumstances CPI+/-X is really rate-based regulation but with a formal regulatory lag but this is perhaps too harsh a judgment ignoring for example the important forward looking nature of incentive regulation (see, for example, Beesley and Littlechild, 1989).

Heathrow by the difficulty of meeting European air quality standards and at Gatwick by a legal agreement, which lasts until 2019. Within this constrained framework, BAA's investment programme at the two airports has been, and remains, substantial and at both airports it is currently well ahead of projections that formed the basis of the 2003-08 price-cap.

BOX 1

RUNWAY CAPACITY AND PRICING

Declared runway capacity, in practice, reflects not only runway constraints but capacity limitations that exist in all parts of the airport system (see Turvey, 2000).

Demand in excess of declared capacity is restrained largely by a, generally applicable, runway slot allocation process that follows administrative criteria agreed to by the European Commission (Regulation 95/93). The chief feature of this process is that, in each season's allocation of slots, prior users (in the last equivalent season) are given precedence. There is, however, a trading market wherein airlines buy and sell slots from and to each other, but, because the EC currently opposes the idea of trading, this market is opaque (a grey market).

Because airport charges are not used to balance demand and supply, the economic rents associated with capacity constraints are captured largely by the incumbent airlines and not by the BAA. If the Company was to capture the scarcity rents (e.g. by raising landing charges), these would have to be offset in some way in order to normalise the return on capital. In spite of the regulator pegging the return, BAA should still have an incentive to invest in additional capacity because it is allowed its cost of capital.

If there remains an element of doubt as to whether BAA has tried as hard as it might have done in the past to expand capacity, it is with respect to adding further runways at Heathrow. Helm and Thompson (1991) in support of their argument that privatised utilities have an incentive to under-invest, remarked that BAA saw further runway investment in the south-east as less urgent matter than the regulatory authorities, but they provided no specific evidence on the matter. More recently, the House of Commons Transport Committee (2003) took BAA to task for having told the Terminal 5 inquiry that an extra runway at Heathrow would be unacceptable for environmental reasons; they considered that this was a wilfully misleading statement.

In contrast, London Stansted is viewed as having expanded too rapidly since the late 1980's resulting in a poor commercial return (see Box 2). The current proposal for further early expansion of the airport also lacks a strong commercial case, in spite of which the BAA is zealously pursuing the matter. The adoption by BAA of this somewhat curious commercial policy in relation to Stansted might be explained by two inter-related factors: first, a desire to grow the company, circumventing the more severe planning constraints at Heathrow and Gatwick and second a small but nevertheless significant threat to its market share from other regional airports, in particular from plans to expand Luton airport (which, in the view of the CAA, suffered material harm from the earlier over-expansion of Stansted)⁵.

Manchester Airport is also subject to a price-cap regime in spite of its status as an airport wholly within the public sector. It has had a substantial capital works programme, of nearly £400 million in the current 5 year period, following expenditure of nearly £300 million in the previous period (at 2002/3 prices)⁶. It added a major new terminal in the 1990's (which is now being extended) and opened a second runway in 2001. But, whether the size or timing

⁵ The proposed expansion probably provides an example of an entry deterring strategy, in this case deterring expansion at nearby Luton Airport (see Starkie, 2004).

⁶ In the review period 1998-9 to 2002-3, there was a shortfall of capital investment against the forecast. However, this shortfall occurred after 9/11 and was prompted by the dramatic reduction in aviation activity. Prior to 9/11 capital expenditure had been running ahead of forecast.

of the expenditure undertaken was appropriate is open to question. Although facilities were getting increasingly crowded in the late 1980s, the airport appeared reluctant to test the investment case by adopting peak load pricing, in spite of being encouraged to do so at the time of the first regulatory reviews (see Starkie, 2003 for details).⁷ Indeed, its ambitious capital expenditure programme of the early 1990s was such that the then Director of Economic Regulation at the CAA commented that the airport “was proposing a remarkable investment programme [and] gross capital formation in the last year of the quinquennium was 56% of the forecast turnover, which is a truly astonishing figure”.⁸

BOX 2

CAPRICIOUS CAPEX AND THE SYSTEM APPROACH

The BAA forecast for CAPEX at the time of the 1997/98 – 2001/02 price-cap review included £135m for Stansted (at 2001/02 prices), a figure dwarfed by spending planned for Heathrow in view of proposals at the latter to start construction of Terminal 5. However, BAA ran into difficulties at the Terminal 5 public inquiry, which slowed the project’s progress.

BAA then simply switched a substantial amount of CAPEX intended for Terminal 5 across to the two other airports, with the result that at Stansted during the five year period, investment was 138 per cent above that originally forecast and at Gatwick 24 per cent. This raises the question of why was this additional expenditure not in the original CAPEX programme for the two airports if it was commercially viable? (Given the then relatively low gearing of BAA, any investment that met its cost of capital should not have been squeezed out of the programme by financial constraints).

This switch of CAPEX between airports was facilitated by the ‘system’ approach to BAA’s London airports, whereby the regulated asset-base for all three airports was combined for the purposes of judging an allowable return. This had the effect of enabling BAA to leverage its market power at Heathrow in order to support under-performing assets at Stansted (for further details, see Starkie 2004). Since 2002 the CAA has changed its policy so that each airport is now considered on a stand-alone basis, but BAA is pressing for the adoption of the *status quo ante*.

Finally, in Ireland where price-cap regulation of airports was introduced in 2001, the regulator has been at loggerheads with the state enterprise running Ireland’s three main airports over what he considers an excessive CAPEX programme. This strong difference of opinion was manifest at the time of setting the first price-cap, with the regulator’s reluctance to accept all proposed CAPEX leading to an appeal to the High Court by the airport company which was unsuccessful. Similar issues have prevailed with respect to the most recent price review. A particular concern of the regulator was the fact that the airport company proposed a large CAPEX programme without adequate appraisal or justification.

Conclusions

On balance, taking into account both incentives and empirical evidence, it would appear that the regulated airport companies have probably inclined towards over-investment, rather than under-investment and that a price cap regime has done little to curb the enthusiasm of the public sector in this regard.⁹ This, in turn, begs the question as to whether the benign approach of the UK regulators has been entirely appropriate. It is, nevertheless, an

⁷ The airport has now, post second runway, adopted peak-load pricing.

⁸ It is possible that this also reflected a strategy aimed at pre-empting potentially competing investment, in this instance by Liverpool airport.

⁹ Alan Walters (1978) writing nearly 30 years ago in the context of a then mostly public sector industry, passed comment that virtually all large airport projects, and probably many or most small projects, are mooted many years before they are economically desirable, adding: “airport authorities and government officials would seem to be congenitally committed to laying down new runways too soon and in too large number”.

understandable position because more detailed scrutiny requires that the regulators set their judgment against that of the airport operator in circumstances where there is an imbalance of information and expertise.

The CAA's new approach for the current 2008-13 review proposes that it should act more as a facilitator to enable the regulated companies to engage with airlines and other users in a structured way. Specifically, the CAA has proposed that the business plans for each of the four designated airports should be drawn up following detailed consultations with the airlines and that this approach should precede submission of the plans to the CAA. It is intended that the parties will agree on various key variables including, importantly, capital expenditure. If successful, the approach will move airport regulation in the direction of similar approaches used in a number of other competitive industries (not subject to economic regulation) characterised by large sunk assets where large strategic investments are secured by agreement between a firm and its major suppliers or its downstream customers, the seaport industry for example.

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