CHAPTER 8

Capital expenditure

Capital expenditure

8.1. BAA estimates that about 30 per cent of capital expenditure from 1976–77 to 1983–84 was on commercial activities. The estimates are given in Table 8.1.

TABLE 8.1 **Estimated analysis of capital additions***

			£ million
	Traffic	*Commercial*	*Total*
1976–77	20·26	10·87	31·13
1977–78	43·51	21·23	64·74
1978–79	13·78	5·94	19·72
1979–80	28·49	12·19	40·67
1980–81	48·43	16·88	65·31
1981–82	31·11	16·93	48·04
1982–83	53·19	21·75	74·94
1983–84	37·77	14·04	51·81
Total (out-turn price)	276·54	119·84	396·36

Source: BAA.

*Excluding Head Office and assets not yet brought into use such as Heathrow Terminal 4.

Investment in commercial activities averaged about £15 million per annum at out-turn prices over the last eight years, and £21 million at 1983–84 prices. About one-third of this expenditure represents an allocation of common costs (for example heating and air conditioning plant, and main services such as roads, drainage and telephones). Some of these costs are unlikely to vary in proportion to the space provided for commercial activities. Rented accommodation accounts for about two-thirds of the assets allocated to commercial activities, the balance being accounted for by concessions.

8.2. From information provided by BAA about investment projects completed in 1982–83, it is estimated that investment in property projects accounted for about half of commercial investment completed in that year, and investment in projects relating specifically to concessions for less than one-fifth. The remaining expenditure was in large combined projects, for example the Gatwick Satellite, which provided expansion of both traffic and associated commercial facilities. Major terminal developments account for a more significant part of current investment. In 1984–85 expenditure on Heathrow Terminal 4 and Gatwick North Terminal amounted to about 70 per cent of BAA investment expenditure; investment in the commercial element of such major terminal developments at present accounts for most investment in commercial facilities.

Procedures for dealing with capital expenditure proposals

8.3. BAA states that, as a nationalised industry, it has regard to Government guidelines on the undertaking of financial appraisals, and in particular to advice received from the sponsoring department (the Department of Transport) which normally concerns itself only with appraisals covering major capital expenditure. Projects of over £15 million at Heathrow and Gatwick and £5 million elsewhere are submitted formally for approval to the Department, which in turn seeks Treasury consent for expenditure over £50 million. In order to ensure the achievement of an overall rate of return of 5 per cent as required by Cmnd 7131,[1] the Government seeks an initial estimated return of 7 per cent as a 'margin for risk and appraisal optimism'. Departments have also requested that appraisals of major projects show the effect of excluding duty-free revenues, on the grounds that this may be an anomaly in the market, rather than an economic benefit of air travel. The Department of Transport has also recently begun to examine the appraisal of a sample of smaller capital projects.

8.4. Within BAA, the level at which capital projects are approved depends principally on project size. Projects of over £5 million require full Board approval. Below that level, the power to approve capital expenditure is delegated to the Managing Director. He in turn allows an Airport Director discretion to deal with capital projects of up to £1 million, and an Airport Director also has powers to delegate.

8.5. BAA policy is to require a financial appraisal for all airport works in excess of £30,000, the limit having recently been lowered from £100,000. Cash flow forecasts are required and appropriate discount rates are applied, although prior to 1985 there was no official appraisal manual, but the Authority followed the official Treasury guidelines. For projects required on grounds other than financial viability—primarily safety, security and passenger service—the other grounds of approval are reported.

8.6. In 1978, in response to Cmnd 7131, BAA adopted three main discount rates, all based on the Government requirement to achieve a 5 per cent return on all new investment. The 5 per cent rate was to be used for comparing best techniques for obtaining a given output, as indicated in the White Paper. For profit-making investments, the base cost of capital was increased to allow for risk and appraisal optimism, and to provide a margin to cover non-revenue earning investments; a rate of 10 per cent was to be used for traffic-related and 8 per cent for 'safer' property-related projects. Recent revisions in the guidelines for project assessment and in the use of test discount rates are discussed in paragraphs 8.15 to 8.17.

Case studies of investment in commercial facilities

8.7. We examined the appraisals of investments in 26 specific commercial facilities, ranging in size from £40,000 to £4 million. The net present value, or in some cases the internal rate of return, was quantified for 17 of them. In four cases the investment was undertaken even though the rate of return was below the prevailing test discount rate. Two projects at Gatwick—the early phases of the cargo development and the £2 million North Roof office block—and the

[1]Cmnd 7131, 'The Nationalised Industries', March 1978.

provision of a transit shed at Stansted were justified by the need to provide facilities in order to attract traffic to these airports. For the fourth project—expansion of the Gatwick multi-storey car park in 1978—the rate of return would have exceeded the test discount rate had the project been deferred, but early expansion was justified by a projected underspend on capital budget, and the probability of restrictions on capital expenditure in later years.

8.8. No formal appraisal appears to have been undertaken for the remaining nine projects. Three of these, however, were justified by the rapid payback expected. In one case, the Authority was guaranteed additional annual income equivalent to the amount of capital expenditure incurred; but in another—the expansion of the Gatwick duty-free shop—the rate of payback was exaggerated by BAA.[1] Of the remaining six cases, one catering project was justified by the requirement to improve service, and two car park schemes—at Edinburgh and Stansted—by the general obligation to provide facilities. In the case of two projects—provision of improved bonded store facilities at Heathrow Terminal 3 and at Glasgow—the benefits were regarded as unquantifiable, though some assessment had been undertaken of a similar scheme. The justification for the final project—a buffet in the domestic arrivals area at Heathrow Terminal 1—cannot be traced; subsequent assessment suggests a rate of above 10 per cent.

8.9. Only a minority of appraisals contained sensitivity analyses, or discussion of a range of alternative options.

'Combined' projects

8.10. We examined the appraisal of investment in six 'combined' projects, primarily traffic facilities, but also including associated commercial facilities. The projects range from a £660,000 investment in passenger facilities at Aberdeen to the £200 million development of the Gatwick North Terminal: some 20 per cent of the latter is attributable to commercial facilities.

8.11. All six projects were subject to formal investment appraisal. Appraisals of the larger projects also incorporated extensive sensitivity analysis, or direct risk analysis using a computerised 'Monte Carlo' method[2]. The return on the major schemes—the Gatwick North Terminal, and Terminal 4 at Heathrow—was estimated at somewhat less than the 10 per cent normally required by the Authority of traffic-related investments; but BAA believed that the sensitivity and risk analyses undertaken showed a sufficient probability that the rate of return would exceed the 5 per cent required by the Government. The appraisals generally presented only a limited range of options; BAA told us that, in consequence of the system of public inquiry into its planning applications, these options were mainly concerned with phasing. Our interest in these projects, however, has primarily concerned the appraisal of those aspects of the investment relating to the provision of commercial facilities.

8.12. The returns on five of the projects are highly dependent, at projected levels of traffic income, on the generation of commercial revenues; but the projects were only appraised as a whole, with no separate appraisal of individual

[1]We have since been told that payback was in fact completed in 18 months.

[2]This method calculates the outcomes of the investment appraisal for a large number of cases (typically 1,000) by sampling values for the key assumptions.

commercial elements, or of options for providing commercial facilities. In the sixth case, the expansion of passenger facilities at Aberdeen, the return on the investment in concessions fell short of the return required but was justified on service grounds. Provision of space for commercial activities in the design of new terminal facilities is based initially on BAA's planning guidelines (see paragraph 5.25 *et seq*), adjusted to take advantage of the potential for increased commercial revenues. BAA also told us that the options for provision of commercial facilities in recent projects have been constrained by the nature of the sites available.

8.13. The three most recent major developments at the South-East airports provide additional commercial facilities, compared with existing terminal buildings. The increases in commercial revenues assumed in the appraisals of these developments varied:

(*a*) The appraisal of the Heathrow Terminal 4 development in 1981 assumed a 25 per cent increase in duty- and tax-free income per passenger above 1980–81 levels, resulting from the provision of better facilities, with no real increase from other concession activities.

(*b*) The appraisal of the North Terminal development at Gatwick in 1983 was based on average South-East concession income per passenger. This represented a small increase on average income at Gatwick on the assumption that traffic using the terminal would consist of existing Heathrow services and some present Gatwick scheduled passengers. Despite the provision of a significantly larger duty- and tax-free shop, in relation to the traffic volume to be handled, than in the existing terminal, no allowance was made for further increasing the potential level of commercial income. BAA now believes this assumption was conservative.

(*c*) The recent appraisal of the proposed redevelopment of Terminal 3 at Heathrow assumed a 30 per cent increase in duty- and tax-free income per IDP, and an 18 per cent increase in other concession income per passenger. It was assumed, for example, that provision of a larger duty- and tax-free shop would increase the range of goods to be sold and increase penetration of the market for tax-free sales by 50 per cent; but it was acknowledged that this assumption was somewhat subjective.

The assumptions of increased income in the two Heathrow projects reflect BAA's belief that shortage of space in the existing Heathrow terminals is a constraint on the maximisation of commercial income. Gatwick's South Terminal was not at that time considered to suffer from this constraint to the same extent.

8.14. BAA subsequently estimated the marginal costs (including the opportunity cost of capital) and revenues of providing commercial facilities at Heathrow Terminal 4 and the Gatwick North Terminal, as part of a collaborative study of landing charges with a number of international airlines. This information is summarised in Table 8.2. These estimates would appear to confirm that investment in the commercial facilities of these projects, in particular in duty- and tax-free facilities, is likely to be profitable, but no appraisal has been carried out of the return on investment in specific facilities other than duty-free shops.

TABLE 8.2 **Estimated costs and revenues per international passenger of provision of commercial facilities (March 1983 prices)**

£

	Heathrow Terminal 4			*Gatwick North Terminal*		
	Duty-free	*Other commercial*	*Total*	*Duty-free*	*Other commercial*	*Total*
Costs per passenger	0·11	1·08	1·19	0·11	1·21	1·32
Revenues per passenger	1·54	1·64	3·18	1·27	1·32	2·59
Net revenue per passenger	1·43	0·56	1·99	1·16	0·11	1·27

Source: BAA.

Revised guidelines on project appraisal

8.15. BAA has recently reviewed its methods for financial appraisal. New 'Policy Guidelines on Project Assessment' were approved by the Board in April 1985; in addition a financial Appraisal Manual has been prepared giving details of a standard approach for use throughout BAA. Among the main features of the guidelines are:

(*a*) A more flexible use of test discount rates is to be adopted, to provide for varied levels of risk. Eight different types of project are described, with six different discount rates ranging from 5 per cent for 'fixed contracts with guarantees' to 20 per cent for 'highly speculative one-off projects'.

(*b*) It is BAA policy that all airport works above £30,000 (previously £100,000) should be subject to formal financial appraisal, and that remaining small projects should also require justification, though possibly using less rigorous approaches.

(*c*) Financial departments should undertake back-checks to review the appropriateness and success of forecasting and other methods used in past appraisals.

(*d*) Project appraisals require a sensitivity analysis to evaluate how robust are the overall results of the appraisal, and to indicate which assumptions are the most important in determining the result. Additionally, it is intended that direct risk analysis be carried out on all future major projects, using the base cost of capital (5 per cent), and financial appraisals be carried out for alternative options.

(*e*) For service projects from which no profits are sought, it is acknowledged that standard financial appraisals cannot be applied in full; but appraisals should be performed of alternative methods of achieving a particular service standard; or an evaluation undertaken of the cost and financial impact of the project. In certain cases (largely traffic investments such as provision of a taxiway turnoff) preliminary cost benefit analysis should be undertaken.

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8.16. On two specific areas of commercial investment:

(*a*) It is recommended in the guidelines that property projects should generally not be carried out if market rents fall short of 'economic' rents, ie the rents necessary to earn an adequate return on the investment.

(*b*) The treatment of catering projects is acknowledged to be difficult. BAA regards a basic catering provision as an essential passenger service and the Board has laid down that a profit margin of 1 to 2 per cent, although insufficient to provide the required return on new investment, is adequate for service-related projects. BAA is discussing a definition of essential catering facilities, to be appraised as passenger service projects, with optional projects meeting normal criteria (usually a 10 per cent return).

8.17. In order to monitor the application of these guidelines, copies of the financial appraisals for all projects approved under Directors' delegated powers are to be submitted to Head Office. Airport Directors are also to monitor the application of the guidelines to projects between £30,000 and £100,000.

Back-checks

8.18. There has not previously been a systematic programme of back-checks on investment decisions, although a number of back-checks have been carried out on particular projects. The Finance Economics branch at Head Office has recently set itself a target of completing six back-checks per year of sizeable projects. The Finance Department at Heathrow also carries out a substantial number of back-checks.

Arrangements for monitoring of investment expenditure

8.19. Consolidated quarterly returns are prepared for the Managing Director showing all new capital projects authorised at values between £100,000 and £5 million, all uncompleted capital projects showing original authorised costs and forecast out-turn (at constant prices), and all capital projects completed in the quarter showing original authorised costs and forecast out-turn (at constant prices).

8.20. If the forecast out-turn for any project varies by more than ± 10 per cent of the authorised cost, the report must be accompanied by an explanation of the forecast variance. Board approval is required for increases in excess of £500,000 above the cost of projects approved by the Board. It should be noted, however, that the authorised cost includes an allowance of 5 to 10 per cent for contingencies. For smaller projects, therefore, a total variance of up to +20 per cent is allowed before the reasons for cost increases have to be reported.

Conclusions

8.21. Our examination of the appraisal of a number of investment projects indicates that the majority of investments have been subject to formal investment appraisal. The recent adoption of revised guidelines for project assessment should, however, lead to some improvement in the techniques of investment appraisal, particularly as applied to smaller projects.

8.22. In particular, the standard of investment appraisal should benefit from a wider quantification of available options; from a greater use of sensitivity analysis; from a more systematic assessment of non-financial benefits; and from a regular programme of back-checks as proposed in the revised guidelines.

8.23. No separate appraisal is carried out of the commercial content of the major 'combined' investments. BAA argued that options for provision of commercial facilities have been constrained by the nature of the sites available. We believe this argument can be overstated. Where there are options for the provision of commercial facilities in these major developments, these options also should be subjected to a formal economic appraisal.