

Parties' submissions on profitability

Introduction

1. In this appendix we summarize each of the parties' submissions on profitability. There is a separate section for each party. We start with the DfT and the ORR and then consider each of the ROSCOs: Angel, HSBC and Porterbrook. We also comment on the main points arising from our analysis of each of the parties' submissions and in the final section we compare the parties' calculated returns for post-MOLA and MOLA.
2. In each section our primary focus is on that party's main submissions on profitability. Where these submissions have replaced earlier documents we have commented on that fact but have not included an analysis of the document that was superseded. We have noted the parties' submissions on benchmarks including cost of capital. Our analysis of their submissions on cost of capital is set out in Appendix 6.6.
3. We start with the DfT's submissions to the ORR. The ROSCOs all commented on the DfT's submissions and the DfT in turn submitted a further paper to the ORR rebutting these concerns. We consider this correspondence.
4. The parties have written to us, either supplementing their main arguments or commenting on our approach. We have considered all these submissions. However, we have not commented in detail when the points have already been covered in our analysis of their main submissions. Where appropriate, the comments which relate to our approach to profitability, cost of capital or asset values are Appendices 6.4, 6.6 and 6.5 respectively.

Overview of the DfT's profitability approach and findings

Introduction

5. The DfT's main submission¹ to us included reference to its original submission to the ORR² which set out its views on profitability. The DfT also submitted a paper commenting on the ORR's WACC, a paper on developments subsequent to its submission to the ORR and a paper to the ORR in defence of its approach.
6. The DfT's submission said that:

... The [DfT's] investigation, which focused on the leasing of rolling stock that was vested in the ROSCOs before they were privatised in 1996 ('MOLA' rolling stock) found evidence of an overcharge estimated to amount to between £34m and £177m per annum, equating to excess costs of between £764m and £1.9bn to the consumer [in present value terms using a 6 per cent discount rate] over the remaining economic life of the MOLA stock ...

¹DfT submission to the CC's call for evidence, 12 June 2007.

²DfT submission to the ORR dated 28 June 2006.

Approach

7. The DfT calculated the pre-tax IRR as at the end of 2005, and also at the point of most recent purchase (see paragraph 11) to assess how the IRR had changed between then and 2005, for the MOLA stock owned by the ROSCOs. It was assumed that capital rentals would continue at current levels to the end of the asset's life, and the DfT considered three asset valuation bases.³
8. The DfT assumed that the ROSCOs broke even on non-capital rentals (ie maintenance). However, it did not carry out any analysis on the profitability of the non-capital rentals on the grounds of insufficient data.
9. The DfT said that the asset value was the most important component of the IRR.⁴ Because there was no readily observable proxy for this value, three bases were used to provide an opening value for the MOLA stock at 2005: depreciated privatization price, depreciated purchase price and depreciated replacement cost.
10. Depreciated privatization price is the original value of the MOLA fleet at privatization which is then depreciated to 2005 on an annuity basis. The DfT's privatization values (proceeds) are the values of the consideration received from the purchasers of the ROSCOs at privatization, as set out in the NAO report.⁵
11. Depreciated purchase price is the value of the MOLA fleet for each ROSCO when it was most recently purchased (1997 for Angel and HSBC, 2000 for Porterbrook), again depreciated to 2005 on an annuity basis. The DfT's purchase value for Angel is the value of the RBS consideration; the values for HSBC and Porterbrook appear to be the accounting fair value of the rolling stock assets. The DfT said that it was assumed at privatization (when initial rentals were set) that a competitive market would develop to set the rentals for subsequent lease periods. If the ROSCO owners valued the businesses at purchase on a DCF basis and assumed that rentals for subsequent lease periods would continue at the same levels as those set at privatization, that would have the effect of capitalizing future monopoly profits.
12. DRC was considered to be the economically correct asset value that would be derived from a competitive market. The DfT submitted a report from GoIndustry Henry Butcher^{6,7} which considered the market value of classes of rolling stock.⁸ For a sample fleet, the cost of an equivalent new unit as at November 2005 was taken as a starting point, and then adjusted for a number of factors.
13. The Henry Butcher valuation assumed a 'day one' depreciation rate of 25 per cent for a train. The rationale is that there will be a difference between a purchaser's preference for a new asset fulfilling its exact specifications and a nearly-new asset with the same useful life. The valuation report said that trains were complex assets, designed and equipped to fulfil a specific task, so it was not possible for a train to offer a universal application and this would affect its resale value. The 25 per cent was a midpoint within the likely spectrum of possibilities. The DfT submitted a graph

³The DfT also assumed (a) annual overhead expenses at 3 per cent of capital rentals, (b) no capital allowances and (c) a mid-life refurbishment of £100,000 per unit.

⁴Although asset life can also be a significant variable, its importance in an IRR calculation is diminished because the financial effects of changing an asset's estimated life occur at the end of the period under consideration and so tend to be heavily discounted.

⁵NAO report on *Privatization of the Rolling Stock Leasing Companies*, 5 March 1998.

⁶GoIndustry Henry Butcher is a firm of industrial asset valuers.

⁷UK Passenger Train Valuation prepared for the DfT, November 2005.

⁸The valuation method uses the principles defined by The Royal Institute of Chartered Surveyors (RICS).

comparing the Class 159 depreciation profile with the equivalent profile for four other transport-related assets⁹ which all showed a large reduction in value on day one.

14. For all three ROSCOs, as at 2005 the depreciated privatization price was £1,463 million and the depreciated purchase price was £2,630 million. The DRC was calculated for a sample of seven fleets, the privatization value was £175.3 million, the purchase price was £408.1 million and the DRC was £210.9 million for the seven fleets. The DfT's DRC submission is closer to the privatization value than to the purchase value. The privatization value is at around a 17 per cent discount to the DRC value. One important factor in the DRC valuation was the 25 per cent day one depreciation.

Benchmark returns

15. The DfT considered new rolling stock as being a market with similar (although not identical) risk profiles and credit characteristics and used the observed returns as a direct comparator to MOLA stock returns. The DfT identified the surplus implicit in the pricing for ten new rolling stock leases 'procured competitively' since 2000, covering 35 per cent by value of new rolling stock procurement since privatization.
16. The IRR range was 5.11 to 6.64 per cent on a pre-capital-allowances basis and 7.43 to 9.69 per cent on a post-capital-allowances basis. The surplus was established by deducting the risk-free rate (RFR) prevailing at the time when the first down payment was made on the new fleet from the IRR. The RFR was based on ten-year gilt rates of 8.2 per cent at privatization which fell by 3.9 per cent to an average of 4.3 per cent for 2005.¹⁰ The weighted average surplus IRR on the new rolling stock leases ranged from 0.92 per cent on a pre-capital-allowances basis to 3.39 per cent on a post-capital-allowances basis and from this the DfT used a range of 1 to 3 per cent.
17. The DfT estimated the surplus in the IRRs of each ROSCO based on the latest purchase price on the assumption that current rentals were the same as those at the purchase dates and continue at the same level. The DfT's paper commenting on the ORR's position provided a pre-tax, nominal WACC range of 5.6 to 7.1 per cent (central scenario 6.3 per cent) with a RFR range of 4.0 to 5.0 per cent. These surpluses also matched the range derived from the new rolling stock.

Findings of the DfT analysis

18. The results of the DfT profitability analysis using the three different valuations are set out in Table 1.

⁹Bus, coach, road tractor and trailer.

¹⁰The DfT noted that the rate had increased to 4.6 per cent by the date of its report.

TABLE 1 DfT calculation of excess returns on MOLA stock

Asset valuation basis	Surplus based on current lease rentals as at 2005 %
Depreciated privatization price	11.2–22.2
Depreciated purchase price	4.0–5.6
Depreciated replacement cost (sample fleet only)	7.5–21.1
'Competitive' surplus range	1–3

Source: DfT submission to ORR, paragraph 1.21.

19. The table shows that the surplus returns on all three valuation bases are in excess of the surplus the DfT said that it would expect to be made in a 'competitive' market (ie by reference to the DfT's estimate of the ROSCOs' cost of capital). There is a large difference between the top and bottom of the range.
20. The DfT compared current lease rentals with the rentals that would be charged to produce a return in the 'competitive' range of 1 to 3 per cent to calculate potential customer detriment, both on an annual basis and as a present value of the total detriment relating to MOLA stock, discounted at 6 per cent. It is not clear why a 6 per cent value was chosen. These figures are set out in Table 2.

TABLE 2 The DfT's calculation of customer detriment under different valuation bases

Valuation basis	Value of annual rental in excess of competitive market		NPV @ 6% £m
	£m	%	
Depreciated privatization price	157–177	80–100	1,700–1,900
Depreciated purchase price	34–70	11–25	375–764
Depreciated replacement cost	-*	113–146	-

Source: DfT submission to the ORR, paragraph 1.24.

*Detriment values for the depreciated replacement cost basis cannot be calculated as the valuation was based on a sample fleet only.

21. The DfT also commented that the reduction in interest rates since privatization, improved understanding of actual risk and transfer of mandatory modification risks to the Government would all suggest a reduction in lease rentals would be expected when MOLA rolling stock was re-leased. In contrast, the DfT calculated that the MOLA rentals had increased by an average of 2.6 per cent during the renewals over the previous two to three years in spite of these developments.
22. The DfT commented that there had been a reduction in the cost of capital since privatization due to the reduction in the RFR and the risk premium demanded by investors. In a competitive market the DfT would have expected these reductions to be reflected in reductions in the MOLA rentals at the point of re-lease.
23. The DfT said that displaced MOLA rolling stock, with rare exceptions, was usually deployed elsewhere at an attractive rate, that there was a tight balance between supply and demand, growth was forecast, and therefore there was no significant residual value risk.
24. In its response to our Emerging Thinking, the DfT provided a worked example to illustrate that, in isolation of other changes, the change in interest rates since privatization should have resulted in a lease rental reduction for a hypothetical MOLA asset of around 11.5 to 14.5 per cent if margins had remained constant.

25. The DfT's submission also set out how the IRR would change if capital allowances were available. The illustration is based on a pre-capital-allowances IRR of 6 per cent, which increases to 8.6 per cent when the benefit of capital allowances is taken into effect. This implies a tax benefit of 43 per cent. The ROSCOs told us that their rental prices were set on the basis that any capital allowances or tax losses in the case of HSBC were group relieved and that the benefit was reflected in the lease rental.

CC comment

26. The DfT's calculations of the surplus range are heavily dependent upon the assumption concerning asset values, which we explore in greater detail in Appendix 6.5.
27. The DfT acknowledged that there were risks at privatization which would have affected that value and that the discount from the NAO value could represent these risks. We regard the NAO report as being persuasive and therefore have not included the privatization value in our assessment of profitability.¹¹
28. We have concerns over the reliability of DRC calculations in general because there is no second-hand market for used rolling stock,¹² although we have performed an opening DRC valuation using alternative evidence. The DRC calculations therefore start with post-MOLA comparators and it is difficult to assess the differences in utility between MOLA and post-MOLA fleets. There is also a specific concern over the 25 per cent 'day one' depreciation charge used in the DfT's analysis. It is practically impossible to tell whether the figure should be higher or lower than 25 per cent, or even whether there should be any 'day one' depreciation. We consider it surprising that the depreciated replacement cost is so close to the privatization value, given the DfT's comments on political risk affecting the privatization price. We believe that these issues point to a problem with the Henry Butcher depreciated replacement cost methodology. We have therefore not considered this DRC value further in our assessment of profitability.
29. We agreed with the DfT's concern that there is a risk of circularity concerning the purchase price values. We therefore considered this asset value in our assessment of profitability but we also applied a sensitivity to reflect a lower asset value which we believe addresses this issue.
30. We also note that the DfT's calculation of detriment on this asset base is significantly smaller than that calculated on the other two asset bases. We have some concerns over the calculation methodology concerning the benchmark comparator, how this changes over time, the comparison between ROSCOs and the taxation basis.
31. We agree with the appropriateness of the DfT's comparison with a benchmark based on observed returns on post-MOLA stock. The DfT's benchmark surplus is determined by reference to an RFR. We believe that the appropriate comparison is to the WACC, based on a suitable gearing profile, on the grounds that the ROSCOs will require a return on equity in addition to covering the interest cost.
32. The DfT commented on the 3.9 per cent fall in interest rates over the period between privatization and 2005. We consider that the fall in interest rates will be one of a number of factors that might lead to rental changes at the point of re-lease. Other factors include the price of alternative stock and changes to residual value risk.

¹¹Our analysis of the NAO's valuation is set out in Appendix 6.4.

¹²These concerns are set out in Appendix 6.4.

33. The DfT's calculations of purchase price values were based on the RBS purchase of Angel, the HSBC purchase of Eversholt and the Abbey purchase of Porterbrook. The Abbey purchase of Porterbrook was in 2000, approximately three to four years after the purchases of the other two ROSCOs, and represented a relatively higher asset value. The value for Angel was based on purchase price and not asset value, as for the other two ROSCOs.
34. The DfT included the effect of taxation by calculating the surplus returns on its new rolling stock sample on a pre-tax basis (0.92 per cent) and after adjustment for capital allowances (3.39 per cent). This has the effect of increasing the returns because there is a cash-flow benefit from the capital allowances. MOLA assets do not receive the same benefit from full capital allowances as they had been substantially written down for tax prior to privatization. Therefore we believe that any comparison between MOLA and post-MOLA has to include consideration of the tax position. Our work on taxation is set out in Appendix 6.7. We note that the DfT's calculations do not reflect the full taxation position.
35. For all of the reasons above we are not able to agree fully with the DfT's calculation of the surplus on the purchase price basis. However, we have included this asset value in our assessment of profitability as well as a sensitivity to reflect a lower asset value. We have also considered the impact of the Porterbrook acquisition in 2000, and also the impact of taxation.¹³

Overview of the ORR profitability approach and findings

Introduction

36. The ORR said¹⁴ that:

... the ROSCOs returns appear to be substantially above benchmark ranges when calculated on a depreciated privatization price/vesting value basis; but the gap between the ROSCOs' returns and benchmark returns is significantly smaller when assets are valued on a depreciated purchase price/revalued assets basis.

Approach

37. The ORR 'focused primarily on the level of profits earned by the ROSCOs in leasing MOLA stock, with returns on non-MOLA stock sometimes referred to as a comparator ...'.¹⁵ The ORR reviewed and commented on the DfT's IRR analysis and calculated its own ROCE for 2003 to 2005 and return on sales¹⁶ using publicly available accounting data and further data supplied by the ROSCOs. The ORR did not expressly comment on the profitability of maintenance services.
38. The ORR's calculation of ROCE was based on two asset valuation bases: the vesting value (the cost of the assets at privatization) and the revalued amount (the

¹³Our work on taxation is set out in Appendix 6.7.

¹⁴*The leasing of rolling stock for franchised passenger services—ORR's reasons for making a market investigation reference to the Competition Commission*, 26 April 2007.

¹⁵*Ibid*, Annex C, paragraph 12.

¹⁶It considered that it was 'not useful' to set out its analysis of return on sales. This appears to be because depreciation accounts for a majority of ROSCOs' costs when calculating return on sales.

value of the MOLA assets as then currently recorded in the accounts of the ROSCOs).¹⁷

39. The ORR noted that the ROCE based on vesting values was in the range of [X] per cent¹⁸ for the period 2003 to 2005. [X]
40. The ORR estimated that for the ROCE based on revalued assets the range was [X] per cent¹⁹ for the period 2003 to 2005. [X] The ORR noted that its ROCE findings were 'qualitatively fairly similar to the ones obtained by the DfT using IRR analyses'.²⁰

Comparison with benchmark

41. The ORR considered that a nominal pre-tax range of 6 to 8 per cent represented an appropriate benchmark and that 'the other benchmarking methods used by the DfT which included comparisons with rates of return earned on new rolling stock, are useful in establishing a benchmark range'.²¹
42. In interpreting its results, the ORR also commented that it seemed likely that the asset values implied by privatization prices were, as argued by the ROSCOs, depressed at privatization by a number of factors, including perceptions of the risks faced by the ROSCOs and the extent of competition between buyers, suggesting that caution should be exercised when interpreting these results.
43. In relation to asset valuation methods, the ORR said that 'a replacement cost methodology may prove to be the most relevant basis for assessing profit levels. But ... we do not consider that we are in a position to provide a definitive opinion'.²²
44. The ORR commented that the ROSCOs were unanimous on two issues: first, criticizing the formulation that the DfT used to arrive at its DRC estimates; and second, arguing against the use of asset values calculated on a depreciated privatization price methodology. The ORR said that it had some sympathy with 'the criticisms of the DfT's methodology (DRC) put forward by the ROSCOs'.
45. The ORR also said that the DfT's analysis compared the value paid by the ROSCOs for their entire businesses with capital rentals, 'when non-capital rentals have been and continue to be an important source of income for the ROSCOs'. It also considered that the DfT's forecasts might be conservative because of the omission of the rentals 'associated with slam door stock that was taken out of service before 2006'.

CC comment

46. The ORR specifically considered an uplift to privatization values based on the first day trading of Network Rail. We cover this comparator in Appendix 6.5. We noted that there are concerns over the comparability to Network Rail, and that the NAO report pointed to a potentially more significant discount.

¹⁷ORR referral document, Annex C, paragraph 18.

¹⁸Ibid, Annex C, Figure 11.

¹⁹Ibid, Annex C, Figure 11.

²⁰Ibid, Annex C, paragraph 44.

²¹Ibid, Annex D, paragraph 49.

²²Ibid, Annex C, paragraph 80.

47. We noted that the ORR shares the ROSCOs' concerns over the DfT's DRC calculations. The ORR said that it had 'some sympathy with the criticisms of the DfT's methodology put forward by the ROSCOs'.²³ The ORR also said:

Our current view is that MEA [Modern Equivalent Asset] values are likely to provide the best means of valuing the ROSCOs MOLA assets. ... We have not carried out a sufficiently detailed review of the depreciated replacement cost analysis carried out by the DfT to enable us to reach a view as to whether this represents the most appropriate means by which to arrive at MEA values.²⁴

48. We considered that ROCE calculations will have the effect of showing higher returns for older assets because the asset base declines over time as a result of depreciation. This would be a potential issue for comparisons between MOLA and post-MOLA. As a result, calculations based on whole-life cash flows are likely to provide more reliable evidence.
49. The ORR commented that the DfT's analysis might be conservative because the capital rental stream was compared with the purchase price for the business as a whole which would have also included a non-capital (maintenance) rental stream. We considered this point in more detail in our assessment of maintenance profitability. However, two ROSCOs—[REDACTED]—commented that maintenance profits were a relatively small proportion of whole company profitability, and we therefore consider that this is not a significant issue for our analysis.

Overview of Angel's profitability approach and findings

Introduction

50. Angel's initial submission²⁵ included an IRR analysis and a ROCE analysis which were superseded by two papers from Oxera concerning Angel's whole-life profitability. Angel also submitted arguments against the DfT's approach in a letter to the ORR.
51. Angel's submission is based on whole lifetime aggregate profitability for rolling stock activities, including maintenance, based on three asset values and three re-leasing scenarios. The IRR range is from [REDACTED] to [REDACTED] per cent. Angel's cost of capital submission also benchmarks a more detailed analysis of the data ranges considering forward-looking as well as whole lifetime ranges. This expanded range is [REDACTED] to [REDACTED] per cent.²⁶ This submission also proposes a deduction to the IRRs on the flat rental re-lease scenario—a [REDACTED] per cent downwards adjustment to the IRRs on a whole-life basis and [REDACTED] per cent on a forward-looking basis.
52. Angel considered two WACC ranges for two financial structures; the midpoint range is [REDACTED] to [REDACTED] per cent. Oxera commented that 'The results indicate that the forward-looking and the whole-lifetime profitability of Angel Trains' GB rolling stock are in line with the estimated cost of capital'.

²³Ibid, Annex C, paragraph 86.

²⁴Ibid, Annex C, paragraph 50.

²⁵Angel Trains initial submission, 25 May 2007.

²⁶The variant RAB annuity has a lower point of [REDACTED] per cent. It is in the expanded table but not in the main table of results.

Angel's initial submission—ROCE

53. Angel's ROCE analysis disputed the findings of the ORR. It was based on historic accounting information for the rolling stock activities in total for the period 2003 to 2005 with an average for the three years, as well as future projections on a range of re-leasing scenarios. The historic ROCE ranged from [£] to [£] per cent over the three years, with an average of [£] per cent, and the forward-looking range was [£] to [£] per cent. Angel argued that this was not indicative of excess profits by reference to its benchmark.

Oxera/Angel profitability document

54. Angel's main profitability submissions were based on the whole lifetime aggregate IRRs for rolling stock activities, which included maintenance activities, starting from RBS's purchase of Angel in 1997.²⁷ The IRR period was also split into forward-looking (2007–37) and backward-looking (1997–2007) components.
55. Oxera generally presented IRRs on a pre-tax basis in the report on the grounds that the analysis focused at the operating level and was therefore free from interactions with the tax system and financing. However, it used post-tax IRRs in its comparison between MOLA and newer stock. Oxera commented that MOLA assets provided a source of taxable income, whereas post-MOLA initially generated tax losses which generated a cash inflow through the availability of group relief, and therefore post-tax profitability may provide 'more accurate comparative results between ex BR and new rolling stock assets'.
56. The IRRs were presented on three different bases for asset values for MOLA stock. These were the price paid by RBS at the acquisition of Angel (RAB), the depreciated replacement cost (DRC) of the MOLA fleet estimated by Henry Butcher in 1998,²⁸ and a more recent estimate of DRC provided by Angel to Oxera (2007). The original 1998 valuations were rolled forward and the 2007 value were rolled back, to produce the whole-life IRRs. The rollback was based on straight-line depreciation. However, Oxera also considered a fourth variant for asset values based on purchase price rolled forward using annuity-based depreciation. Table 3 shows the assumptions for asset values.

TABLE 3 Opening asset values of Angel rolling stock

	£ million			
	Purchase price using straight-line depreciation	Purchase price using annuity depreciation	1998 DRC	2007 DRC
Opening asset value at December 1997	955	955	[£]	[£]
Opening asset value at December 2006	[£]	[£]	[£]	[£]

Source: Oxera report, Table 3.11, p29.

Note: Figures are after deduction of working capital, £[£] at December 1997 and £[£] at 2006.

57. Table 3 shows that there is a significant difference between the valuations. The purchase price is higher than the equivalent asset value based on DRC in part because the purchase price also reflects goodwill. The Oxera report included a table showing the rollback of the 2007 DRC for MOLA assets. The rollback of the MOLA stock 2007 DRC from 2006 to 1997 led to an increase in value from £[£] in 2006 to

²⁷[£]

²⁸This valuation was performed by Henry Butcher to determine a fair value for Angel's rolling stock assets at the time of acquisition by RBS. It has no connection with the Henry Butcher valuation undertaken for the DfT.

£[x] in 1997 and this earlier value was higher than both purchase price and the 1998 DRC at the same date.

58. Three scenarios were presented reflecting different assumptions on the rental income at re-leasing. The ‘flat re-leasing rental’ assumed that rents remain at the same level to the end of the assets’ lives. The ‘reference re-leasing rental’ estimated a ‘new train equivalent’ rental, adjusting the expected rent on a new train for the age and condition of the rolling stock. The ‘weighted average re-leasing rental’ reflected the risk of stock going off-lease or being re-leased at a lower rental.
59. The Oxera cost of capital report presented a benchmark pre-tax cost of capital (WACC) of [x] to [x] per cent on the current financial structure and [x] to [x] per cent on the target financial structure. We have commented on these benchmarks in Appendix 6.6.

The results

60. Table 4 sets out the whole lifetime IRRs from the combination of scenarios for asset lives and for re-lease rent scenarios.

TABLE 4 Whole lifetime aggregate profitability, 1997 to 2007 (pre-tax nominal IRR asset values)

Re-leasing assumptions	per cent		
	RAB approach	DRC 1998	DRC 2007
Flat re-leasing	[x]	[x]	[x]
Reference re-leasing	[x]	[x]	[x]
Weighted average re-leasing	[x]	[x]	[x]

Source: Oxera Report, 27 September 2007, Table 1

61. The flat re-leasing rental leads to the highest IRR. However, there is only a [x] to [x] per cent difference between this assumption and the weighted average re-lease assumption. The 1998 DRC leads to the highest IRR and there is a more significant [x] to [x] per cent difference between this assumption and the 2007 DRC.
62. The overall profitability estimates produce IRRs above the benchmark cost of capital ranges (using an arithmetic mid-point) on the RAB and 1998 DRC valuation basis (both are variants of purchase price) and are either at, or below, the benchmark on the 2007 DRC valuation basis. The Oxera cost of capital report also set out an adjustment of [x] per cent to the whole-life flat rental IRRs for the downside risks.²⁹ Angel said that only IRRs estimated using the weighted average releasing rental adjusted for downside risk were comparable with the cost of capital.
63. Table 5 compares the forward looking pre-tax IRRs with the historic equivalents. For simplicity we have restricted this comparison to the flat re-lease rental scenario. The average re-lease scenarios are all [x] per cent lower than the flat rentals and the weighted average re-lease scenario are all [x] per cent lower than the flat rental.

²⁹The forward-looking adjustment is higher at [x] per cent.

TABLE 5 Comparison of backward and forward looking profitability

	<i>per cent</i>	
	<i>Flat re-releasing</i>	<i>Historic</i>
Purchase price with straight-line depreciation	[X]	[X]
Purchase price with annuity depreciation	[X]	[X]
1998 DRC	[X]	[X]
2007 DRC	[X]	[X]

Source: Oxera Report, 27 September 2007, Tables 3.12 and 3.13.

64. Table 5 shows that there is a greater range on the backward-looking segment ([X] per cent) compared with the forward-looking segment ([X] per cent) and that the backward-looking segment is a significant factor in the whole-life ranges of [X] per cent.
65. Oxera also split out a subsection of the historic period IRRs covering 2002 to 2006 to reflect the period covered by our financial information request. Profitability in the period 2002 to 2006 was lower under all valuation bases than for the longer 1997 to 2006 period. No explanation is offered for this impact in the report. Angel said that there were significant cash outflows over this period, reflecting Angel's investments in the new rolling stock. Cash inflows from these investments will be generated over the longer term than the period considered in this profitability scenario. This partly explains the difference between returns over the period from 1997 to 2006 and 2002 to 2006.
66. The analysis showed that future profitability levels are estimated to be lower than in the past on three asset bases. The exception is the 2007 DRC valuation, where future profitability is estimated to be higher than in the past. The scale of these differences is significant, excluding the 2007 DRC. The historic profits are [X] to [X] per cent higher than the future projections, and this would increase to [X] to [X] per cent on the weighted average re-lease scenario.

MOLA and non-MOLA profitability

67. The Oxera report also compared the relative profitability of the MOLA and post-MOLA fleets on a post-tax basis. In Table 6 we set out the forward- and backward-looking ranges as well as the whole-life IRRs on the basis of the flat re-lease scenario. On the whole-life basis, the reference re-lease MOLA IRRS would be lower by [X] per cent and on the weighted average re-lease scenario post-MOLA would be lower by [X] per cent and MOLA would be lower by [X] per cent.

TABLE 6 Comparison of ex-British-Rail and post-MOLA ranges

Valuation method	Whole life flat re lease	Future flat re lease	per cent
			Historic
<i>Purchase price with straight-line depreciation</i>			
Ex British Rail	[X]	[X]	[X]
post-MOLA	[X]	[X]	[X]
<i>Purchase price with annuity depreciation</i>			
Ex British Rail	[X]	[X]	[X]
post-MOLA	[X]	[X]	[X]
<i>1998 DRC</i>			
Ex British Rail	[X]	[X]	[X]
post-MOLA	[X]	[X]	[X]
<i>2007 DRC</i>			
Ex British Rail	[X]	[X]	[X]
post-MOLA	[X]	[X]	[X]

Source: Oxera Report, 27 September 2007, Tables 5.27, 5.28, 5.29.

68. Table 6 shows that the whole-life profitability of post-MOLA appears to be [X] the WACC range of [X]. The pattern in the table also shows that the historic profitability of post-MOLA appears to be higher than the future projections. The historic MOLA returns are higher than the future projections on the purchase price basis, whereas the historic returns are less than the future returns on the two DRC bases.
69. The Oxera report also included an analysis of pre-tax profitability for the MOLA and post-MOLA fleets. For post-MOLA, the post-tax IRRs were about [X] per cent [X] than the pre-taxation IRRs. The report said that this was because there was a tax benefit from group relief receipts from the surrender of early years tax losses. In contrast, for MOLA the post-tax IRRs were about [X] per cent lower than the pre-tax IRRs because of the tax burden. The report said that at privatization the tax base in the assets was below the book value, therefore the effective tax rate on MOLA assets would be higher than [X] per cent. A subsequent letter from Angel estimated that the effective tax rate is [X] per cent for MOLA and [X] per cent for post-MOLA.

Maintenance

70. The OXERA report did not calculate IRRs for maintenance activities as the non-capital part of Angel's business was assumed not to have any tangible assets.

Comparative residual value risk

71. In its first report Oxera also attempted to model the residual value risk faced by Angel in its rolling stock business. This analysis was then refined in the Oxera cost of capital report where Oxera commented that:

the empirical sample of risk events since RBSG's [RBS Group] acquisition of Angel Trains and since the privatization might not be representative, and therefore historical data might not be appropriate for assessing future risks. The effect is exacerbated by the nature of residual value risk, which is characterised by the low probability of a risk event occurring and a significant impact if it does occur. ... Angel Trains' expected returns are skewed downwards relative to the flat rental. Therefore the IRR based on the flat rental needs to be adjusted for the probability of realisation of the downside scenario.

72. Angel's analysis presented results based on scenarios. On the whole-life basis there were nine data points; six of these were above the midpoint averages of both WACC structures. On the expanded range including forward-looking projections there were 18 data points, and 11 and 9 were above the midpoint of the current financial structure WACC and the target structure WACC respectively. All the data points (whole life and forward looking) based on the IRRs on the 1998 DRC (purchase price) were [redacted] the WACCs.
73. When the effect of the [redacted] per cent (whole-life) or [redacted] per cent (forward-looking) risk adjustment for the rental re-lease scenario is included, out of 18 data points there were only six and two points above the respective mid-point WACCs.

Angel's comments on the DfT's approach

74. Angel expressed concern with the financial analysis conducted by the DfT with regard to the asset base value, the Henry Butcher DRC calculations, and the cash-flow assumptions.
75. Angel said that the privatization price was too low a base given the findings of the NAO report and the need to consider the context of the privatization.
76. Oxera acknowledged the risk of circularity in the values based on purchase price, but commented that that would not necessarily be the case, if the market was expected to be competitive. Oxera also commented that the circularity risk could be reduced by using DRC, and that there were indications that the purchase price was close to DRC. Angel commented that the appropriate way to value the assets was the 'value to the owner' principle, and that the normal market basis of valuation for a leasing company would be the net present value of future income streams.
77. Angel also said that the purchase price was still low given the significant political risk that remained at the time of sale to the ROSCOs. At the time of the purchase there were still uncertainties about the new industry, the re-leasing of short-term privatized leases, the re-franchising processes, potential open access operations and the investment needs for new rolling stock. It noted that the following events had occurred since privatization: the failure of Railtrack, failures on delivery of west coast main line and swings in the regulatory and franchising processes.
78. Angel expressed concern about the DfT's annuity depreciation profile, in terms of whether the benefit of capital allowances or the cost of corporation tax had been included. It also noted that post-MOLA leasing rates had been taken as the competitive benchmark, but were not comparable because the MOLA rentals had fewer allowances and would therefore be less valuable on a post-tax basis. Angel also commented that for the MOLA assets the allowance pool at privatization approximated to less than one-quarter of the equivalent value of allowances available to new trains.
79. Angel also said that an assumption of flat rentals, without reflecting the re-leasing risk, would overstate any potential detriment. It also doubted whether the DfT had adjusted (shortened) the useful economic life for recent legislation changes and technically problematic fleets and that the DfT had underestimated the size of mid-life refurbishment cost by as much as £74,400 per vehicle.

Henry Butcher DRC calculations

80. Angel commented that Henry Butcher also acted for RBS valuing the fleet on its acquisition of Angel in 1997. There were two valuations, a pre-completion valuation on a portfolio basis and a subsequent fleet-by-fleet valuation. Angel commented that the RBS valuation was also on a DRC basis and that the most critical difference to the valuation for the DfT was the absence of the 'day one' adjustment³⁰ which Angel did not consider was justified.

Issues with the ORR approach

81. Angel did not agree with the ORR's use of ROCE as a useful method of profitability assessment as it considered that a better methodology would be a forward-looking assessment using IRR.

CC comment

82. Angel's analysis is based on a range of asset values which we consider in detail in Appendix 6.5. Here, we comment on two specific matters concerning Angel's range of asset values.
83. The 2007 DRC value when rolled back to the RBS acquisition date in 1997 is higher than the two purchase price values at that time and therefore does not appear to meet the concept of deprival value (as described in Appendix 6.5) and accordingly we have placed less weight on this in our analysis than other values. We also noted that this asset value led to some apparent anomalies in the data patterns.
84. The two purchase price values are the RAB value and the 1998 DRC. The RAB value is the RBS purchase price plus the outstanding debt (from the prior securitization). RBS recorded £352 million of goodwill which is one of the reasons why the RAB value is higher than the 1998 DRC asset value. However, Angel told us that there were issues with the 1998 DRC concerning the availability of suitable new rolling stock comparators and that the DRC value was low compared with the DCF valuation.
85. We commented that there could be other reasons for the goodwill, such as assumptions for profits on maintenance activities where there is no capital base, or expectations of future business. No goodwill was recorded at the time when the other two ROSCOs were acquired around the same time.
86. The Oxera report shows that MOLA IRRs are generally [redacted] than those for post-MOLA (excluding the 2007 DRC) on both a whole-life basis (by around [redacted] per cent) and a forward-looking basis (by around [redacted] per cent). The historic pattern is less clear-cut, but on average there is a [redacted] of [redacted] per cent.
87. We noted that the whole-life post-MOLA returns of [redacted] per cent were [redacted] than Angel's WACC range.
88. We observed that (excluding the 2007 DRC) the MOLA IRRs [redacted] Angel's WACC range on the historic basis, but that there was a mixed pattern on a forward-looking basis.

³⁰The DfT's DRC submission includes a 25 per cent day one downward adjustment.

89. We agreed with the concepts behind Angel's overall approach which was based on whole-life IRRs and post-tax comparisons between MOLA and post-MOLA. We have noted some concerns over the detailed data in the analysis.
90. We observed that on a forward-looking basis the [X] per cent correlation deduction to the flat re-lease rental scenario is equivalent to the difference between the flat rental scenario and the weighted average re-lease scenario. However, the forward difference between the flat rental scenario and the weighted average re-lease scenario was [X] per cent for the MOLA stock and [X] per cent for the post-MOLA stock.
91. There was a general pattern that forward-looking profitability is lower than historic profitability (excluding the 2007 DRC). A similar pattern was observed for the post-MOLA stock where forward profits are [X] per cent lower than historic equivalents. However, for MOLA stock there is a different pattern on the two DRC value bases where forward profitability is higher than post-MOLA.
92. Angel's analysis points to the tax effects as being significant, both in that the post-MOLA post-tax IRR is about [X] per cent higher than the pre-tax equivalent, and in that the effective MOLA tax rate is between [X] per cent. Our work on taxation also found that there were significant differences between MOLA and post-MOLA effective tax rates, although we did not consider these differences to be as significant as Angel suggested. The Information Memorandum at privatization referred to £227 million of tax allowable expenditure for Angel and this represents around 36 per cent of the £630 million historic NBV of assets at privatization.
93. We agree that maintenance returns could not be reliably benchmarked because there was no asset base.

Overview of HSBC's profitability approach and findings

Introduction

94. HSBC's main submissions on profitability consisted of three papers by Frontier Economics (Frontier) which covered HSBC's profitability for the period 2002 to 2006.³¹ HSBC also submitted reports by Steer Davies Gleave which covered re-leasing risks and utility differences between fleets. Frontier's paper on competition in rolling stock leasing includes a section on competitive pricing and competition assessment.³² CC staff met with representatives of HSBC, Frontier and Norton Rose on 4 June 2007 to discuss the financial aspects of HSBC's submission as well as Frontier's May 2007 profitability report. On 12 December 2007 we met to discuss Frontier's updated November 2007 profitability report.
95. HSBC submitted arguments against the DfT's approach in a letter to the ORR.
96. HSBC wrote to us setting out its concerns over our approach. Following this, CC staff met with HSBC and Frontier on 12 May 2008 when Frontier presented a paper setting out the impact of some of its concerns. Subsequently HSBC wrote to us again with its concerns on 6 June 2008.

³¹These include: 'HSBC Rail profitability 2002–2006', November 2007; 'Analysis of HSBC Rail profitability', May 2007; and 'The cost of capital for rolling stock leasing—A paper prepared for HSBC Rail', May 2007.

³²Frontier Economics 'Competition in rolling stock leasing', April 2008.

97. HSBC's submission is based on a DRC ROCE calculation for the capital rental activity and maintenance which shows an average return on the capital rental business over the period 2002 to 2006 of [redacted] per cent (after adjusting for the returns generated by life-expired assets) which is [redacted].

98. HSBC commented that:

[redacted] The evidence strongly indicates that HSBC Rail has not engaged in excessive pricing. The analysis is based on returns on depreciated replacement cost and the conclusions from the results are not sensitive to the assumed economic life (30 years or 35 years) analysing the portfolio into MOLA and non-MOLA fleets or the inclusion of maintenance profits. The depreciation profile used in the analysis is consistent with the analysis by SDG into how the utility and performance of fleets varies with fleet age.

Approach and findings

99. Frontier said that 'the IRR is conceptually the correct measure of the profitability of a project'³³ and that its approach to calculate ROCE using depreciated replacement cost results was equivalent to a DRC-based truncated IRR. Frontier calculated a ROCE for the period 2002 to 2007 using a 2006 DRC adjusted using a proxy for new rolling stock inflation to provide a value for each year.³⁴

100. HSBC also said that the period 2002 to 2006 was the appropriate period rather than whole life because the whole-life period would reflect many factors including the changing risk profile and changes to the prices of new trains. HSBC said that the whole portfolio should be considered (rather than individual leases) on the grounds that the portfolio results were much less sensitive to the depreciation profile. In its letter of 6 June 2008, HSBC commented that there was no meaningful difference in profitability between MOLA and post-MOLA, and that both were part of one market.

101. In its response to emerging thinking, HSBC³⁵ commented that:

In particular, HSBC believes that: (i) A DRC approach (as opposed to an accounting value approach), where asset value is determined by indifference pricing principles, is the most meaningful; (ii) Whole life cash flows should properly reflect risks and should be truncated to the recent past rather than extending into the historical past and that the appropriate asset value should be an appropriately calculated DRC.

102. In its April 2008 paper on competition, Frontier³⁶ said that the competitive outcome corresponded to a DRC calculation on the grounds that 'the situation where the current value of assets is less than the replacement cost is not consistent with a world where new assets are being acquired'. The SDG utility analysis, as described in the main profitability submission, provides evidence to support the assumptions surrounding the utility profile which is applied in calculating the DRC values.

³³HSBC commented that IRR was conceptually the correct measure providing it was based on a DRC measure of the value of the asset. In addition, Frontier said that a truncated IRR was equivalent to a ROCE. Consequently its DRC ROCE calculations are equivalent to DRC-based truncated IRRs and as such are an appropriate basis on which to assess the pricing and profitability of HSBC's assets.

³⁴Frontier also submitted DRC calculations for specific fleets.

³⁵HSBC response to Emerging Thinking, 21 January 2008.

³⁶Frontier, 'Competition in rolling stock leasing', April 2008.

103. HSBC's letter also reiterated the use of DRC in the context of competition: 'Unless there was an excess supply of used rolling stock, the competitive rental of used rolling stock would be equal to the rental on new rolling stock adjusted for differences in the value of the rolling stock to the TOC'. HSBC also commented that 'there is no reason why an economic asset valuation should not exceed the asset value at acquisition'.

104. The result of Frontier's DRC ROCE calculation is set out Table 7.

TABLE 7 Frontier's DRC calculations capital income (pre-tax nominal)

	<i>per cent</i>					
	2002	2003	2004	2005	2006	Average
MOLA	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Non-MOLA	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Aggregate	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Source: Frontier Economics, 'HSBC Rail Profitability: 2002–2006'. November 2007 Table 9.

In Table 8 Frontier calculated DRC ROCE for HSBC excluding for income generated from life-expired assets. HSBC said that it considered these figures the central estimate of DRC ROCE for HSBC.

TABLE 8 Frontier's DRC calculations excluding assets with zero capital value*

	<i>per cent</i>					
	2002	2003	2004	2005	2006	Average
MOLA	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Non-MOLA	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Aggregate	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Source: Frontier Economics, 'HSBC Rail profitability: 2002–2006', November 2007, Table 10.

105. Frontier estimated a range for pre-tax nominal cost of capital for the period 2002 to 2006 of [REDACTED] per cent.

106. Frontier commented that 'the returns are very similar between MOLA and non MOLA and in neither case are returns excessive relative to the cost of capital'. Frontier also commented that 'this provides no evidence of excessive pricing ... is also consistent with effective competition for passenger rolling stock [REDACTED]'.

Methodology

107. Frontier started by calculating an accounting ROCE. This was calculated as earnings before interest and tax (EBIT) sourced from HSBC Rail's management accounts divided by the NBV of the rolling stock assets.³⁷ The NBV was adjusted to exclude assets in the course of construction; it assumed 30 years' economic life for MOLA assets and applied actuarial depreciation rather than straight line. In addition, deferred tax was deducted to leave a principal employed (PE) balance. Using an actuarial depreciation profile then gave a constant return on principal employed and a stable ROCE over the life of the asset which would be close to the IRR.

³⁷Equivalent to depreciated purchase price.

108. Frontier compared its ROCE calculations to a pre-tax nominal cost of capital. It commented that the deferred tax adjustment and the actuarial depreciation profile produced a measure of ROCE that was comparable to the cost of capital.
109. Frontier's profitability assessment was based around the DRC ROCE, as the most appropriate measure of profitability for a competition investigation. This was based on the accounting ROCE described above, replacing accounting based PE with an equivalent DRC based PE. The DRC based PE was calculated as follows: the 2006 replacement cost values (for six categories of stock) were discounted by [X] per cent a year to arrive at a replacement cost value at 2002, 2003, 2004 and 2005. The [X] per cent was the mid-point of Frontier's assessment of the inflation trend rate of [X] per cent a year.³⁸ The gross replacement cost value was then adjusted for the age of each of the assets based on a generic actuarial PE profile and the EBIT was then also adjusted to reflect the different depreciation charge which will be affected by the asset base and the utility profile.
110. The utility profile was supported by the report from SDG, which considered the utility of a fleet by reference to comparable new rolling stock of same type. SDG considered the impact of revenue generation, operating costs, light and heavy maintenance and reliability and availability. Frontier expressed the SDG results in the form of the indifference rental on a used train as a percentage of the rental generated on an equivalent new rolling stock.
111. The critical assumption was that utility declines on average at 1.5 per cent a year. This has matched recent increases in new rolling stock inflation (and hence new rolling stock rentals) broadly leading to a fleet generating constant nominal rentals, over its economic life.
112. When compared with Frontier's calculated WACC of [X] per cent, the returns on post-MOLA assets were [X] the cost of capital. The accounting returns of [X] per cent for MOLA were [X] than the DRC main case returns of [X] per cent and were [X] than the WACC. On the accounting basis the MOLA returns were [X] post-MOLA, although this [X] on the DRC main case. In 2002 the MOLA returns are [X] than post-MOLA on the accounting basis and this [X] by 2006. On the DRC main case basis the MOLA returns [X] post-MOLA [X] in 2002 and this [X] by 2006.
113. The most significant difference is between the accounting and DRC main case for the MOLA assets, and this appears to be due to the difference between the accounting and DRC depreciation profiles. To consider this further we looked at the annual change in the PE and the relative change between the DRC net asset value and the accounting equivalent for the MOLA assets.

TABLE 9 Annual change in PE

	<i>£ million</i>				
	<i>Accounting</i>	<i>DRC— main</i>	<i>Annual change</i>		<i>DRC less accounting</i>
			<i>Accounting</i>	<i>DRC— main</i>	
2002	[X]	[X]	[X]	[X]	[X]
2003	[X]	[X]	[X]	[X]	[X]
2004	[X]	[X]	[X]	[X]	[X]
2005	[X]	[X]	[X]	[X]	[X]
2006	[X]	[X]	[X]	[X]	[X]

Source: CC analysis of data provided by HSBC.

³⁸Based on four measures: RPI (excluding mortgages), PPI for transport and other transport and machinery and equipment.

114. The rollback of the 2006 DRC showed that the 2006 asset value of £[redacted] increased to £[redacted] when rolled back to 2002.

Maintenance

115. Frontier submitted a ROCE for maintenance activities. Frontier noted that as it was not possible to observe directly the capital associated with HSBC's maintenance activities, an estimate of economic capital was made. This estimation identified the business risks faced by HSBC, identified a sample of companies faced with similar risks, calculated the amount of capital held by the comparator companies and, using this, inferred a range of values for economic capital for HSBC's maintenance activities.
116. The ROCE for maintenance is set out in Table 10. Frontier estimated a separate cost of capital of [redacted] per cent for maintenance activities, [redacted].

TABLE 10 Frontier's estimated ROCE for maintenance

	<i>per cent</i>				
	2002	2003	2004	2005	2006
Estimated ROCE	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Source: HSBC Rail profitability: 2002–2006, Frontier Economics, November 2007.

117. HSBC said that the decline in maintenance rentals was attributed to the ending of maintenance contracts on a number of life-expired MOLA fleets and the increasing prevalence of dry leases.
118. Frontier also considered maintenance returns on a combined basis with capital rentals. This involved a joint DRC ROCE calculation based on the two previous analyses and Frontier commented that 'the combined returns are not excessive'. It also said: 'the capital rentals business activity is much more significant than the maintenance activity. Over the period maintenance accounts for only [redacted] per cent of combined EBIT ...'.

HSBC's comments on the DfT's approach

119. HSBC said that the privatization asset value was not appropriate and cited the NAO report as evidence. It said that the difference between privatization values and acquisition values could be explained by changes in risk perception between 1996 and early 1997, as was found by the NAO.
120. HSBC also expressed concern over the DfT's arguments concerning purchase values. HSBC argued that there was no belief in the existence of market power, nor were excessive profits capitalized. HSBC commented on risk at the time of purchase and the relative bargaining position of buyer and seller in the transaction.
121. In May 2008 HSBC submitted a paper on ROSCOs and political risk by Roger Ford, which said that there was initially a negative mood politically (arising from privatization), then a positive climate from 1999 until 2002, neutral to hostile sentiment to 2007, softening thereafter but with remaining uncertainty for the MOLA fleet. The analysis was based on a timeline of events, statements of government policy and sentiment, and comments on risk.

122. HSBC outlined four main areas of disagreement with the DfT's DRC asset values. These concerned the 25 per cent day-one depreciation charge, the recovery through lease pricing, the DfT calculation not being an accurate estimation of the DRC and the omission of a number of relevant factors in the calculation.
123. HSBC also disagreed with the DfT's methodology citing an inconsistent approach to depreciation. It argued that the overhead assumption of 3 per cent was inappropriately low, and that the benchmark rate of return was also too low and did not reflect the risks faced.

CC comment

124. We noted that HSBC's analysis was based on a ROCE calculation using a DRC asset value for a truncated period 2002 to 2006. We consider the arguments concerning DRC in detail in Appendix 6.5. Below we comment on HSBC's submissions.
125. We noted the critical assumptions behind the HSBC DRC values—that the appropriate comparator is new rolling stock, that inflation in new rolling stock is 1.5 per cent, and that the utility of an old train relative to a post-MOLA declines with age at the same rate of 1.5 per cent. HSBC (Frontier) said that the asset value was related to the supply and pricing of new rolling stock and therefore that 'the situation where the current value of assets is less than the replacement cost is not consistent with a world where new assets are being acquired'.
126. We were concerned that the DRC value, if rolled back to privatization or the date of the HSBC acquisition, would be likely to result in values that were higher than either the purchase price for the business or the fair value of the assets.
127. We observed that the HSBC ROCE calculations show that the MOLA returns are [redacted] than post-MOLA on all three asset bases. [redacted] On the accounting basis, which is equivalent to depreciated purchase price, [redacted].
128. We observed that the post-MOLA returns of [redacted] per cent were [redacted] than HSBC's WACC range of [redacted] per cent. We comment on HSBC's WACC range in Appendix 6.6. We observed that only the MOLA ROCEs on the accounting basis [redacted] HSBC's WACC range.
129. Regarding taxation, we noted that there was a cash-flow benefit for the post-MOLA assets arising from group relief receipts for losses surrendered whereas the MOLA assets had a higher effective tax rate because the capital allowance pool was less than that available to new trains. We noted that the Information Memorandum at privatization refers to £228 million of tax allowable expenditure for HSBC and this represented around 34 per cent of the £677 million historic NBV of assets at privatization. This is lower than for post-MOLA stock where the whole cost of the train would qualify for capital allowances.
130. We observed that HSBC had benchmarked maintenance returns against a basket of comparator companies. We considered that there is no asset base for maintenance activities but also noted [redacted].

Overview of Porterbrook's profitability approach and findings

131. Porterbrook's submission to the CC dated 4 June 2007 referred to Porterbrook's submission to the ORR dated 28 February 2007³⁹ which included two reports from NERA. Porterbrook also summarized its concerns over our proposed methodology in a letter.
132. Porterbrook calculated the IRR for the remaining life of its assets from the point of the Abbey acquisition. It estimated an IRR (pre-interest and tax) of [redacted] per cent for MOLA and [redacted] per cent for post-MOLA capital rentals. Porterbrook described them as optimistic on the basis that they assume all stock continues to be leased at no significant reduction in nominal rental charges (which it said was better than recent experience) and there was no allowance for RVAR costs. Porterbrook's analysis also included tax-adjusted IRRs for MOLA of [redacted] per cent compared with post-MOLA of [redacted] per cent, to illustrate the impact of capital allowances on the effective profitability of MOLA relative to post-MOLA.
133. Porterbrook said that these calculations were [redacted] the ORR benchmark range of 6 to 8 per cent. Porterbrook said that both the DfT's and the ORR's benchmark rates of return were an understatement of a reasonable return and that a better range would be [redacted] to [redacted] per cent (which was its estimate of the cost of capital).
134. Porterbrook said that it believed clear evidence existed to contradict any assertion of excess profits being earned by ROSCOs. Porterbrook noted the ORR observation that returns on post-MOLA stock were relatively modest. Porterbrook commented that returns on MOLA stock were also lower than returns on post-MOLA stock and that there had been a reduction of [redacted] per cent in real terms of MOLA rentals over the preceding 12 years.

Porterbrook's own profitability analysis

135. Porterbrook's analysis of profitability was described in the NERA review of Annex C of the ORR's consultation document dated 28 February 2007. This showed that the expected return on new stock is higher than that on MOLA when returns are adjusted to reflect the relative impact of tax allowances.
136. Porterbrook (initial submission and NERA) believes that MEA values are the most relevant and that DRC is the most appropriate method of estimating MEA values. There is no market for second-hand passenger rolling stock in the UK, and estimates from other markets would be extremely subjective. Porterbrook said that therefore a truncated IRR, using appropriate asset values, is the only meaningful indicator readily available.
137. Porterbrook acknowledged that DRCs were closely related to the concept of indifference pricing and 'over time lease charges might be expected to converge on indifference prices'. Porterbrook also commented that flat-line pricing was used by Hambros (at privatization), by the NAO (in its assessment of value), was acknowledged by the DfT as an accepted pricing methodology, and was used by Porterbrook as a starting point when pricing new rolling stock and forecasting revenues from existing rolling stock.
138. The NERA analysis estimated the DRC for one fleet, the Class [redacted], to illustrate the main flaw in the DfT's estimates. A subsequent analysis set out more detailed DRC

³⁹Porterbrook initial submission to the CC, 4 June 2007, paragraphs 1.5 and 1.6.

estimates for the Class [X] and Class [X] fleets. The DRC for these fleets was estimated by taking estimates of the cost of an equivalent new asset and adjusting the cost for likely differences in value caused by maintenance and other costs to the TOC. Then a depreciation profile was estimated based on expected changes in maintenance costs, the reduced revenue-earning potential of old trains and real interest costs.

139. The results of NERA's more detailed analysis showed that the 2000 DRC value of the Class [X] was £[X] per vehicle. This was [X] per cent higher than the valuation at the time of the Abbey acquisition and [X] per cent higher than the price of an equivalent new train. For the Class [X] fleet, the DRC value was £[X] per cent higher than the acquisition valuation but [X] per cent lower than the price of an equivalent new train.
140. Porterbrook said that NERA's first DRC estimate for the Class [X] shows that the DRC was likely to be very substantially higher than the depreciated privatization price, very substantially higher than the DfT's estimates of the DRC, and significantly higher than the depreciated purchase price paid by Abbey when it acquired Porterbrook.⁴⁰
141. Porterbrook said that the Abbey purchase price,⁴¹ which was based on a report from Quasar Associates, was the best fleet-wide measure of valuation that was readily available and was a useful reference, although DRC provided a more accurate valuation. Porterbrook's IRR calculations were based on the asset values at the Abbey acquisition, with assumed monthly cash flows up to the end of each asset's expected economic life and [X]. Porterbrook presented these as optimistic for the reasons given in the NERA report and included above.
142. In its response to our emerging thinking, Porterbrook⁴² commented on the appropriate opening asset value for MOLA rolling stock, and noted the robustness of the analysis that Quasar Associates undertook for Abbey to determine its valuation of Porterbrook. In a subsequent letter Porterbrook said that the Quasar analysis probably undervalued Porterbrook's fleet at the time of the transaction and that Quasar assumed that capital rentals would either remain constant or fall in nominal terms (except where a major refurbishment was being contemplated).
143. The IRR of MOLA rolling stock was estimated to be [X] per cent (pre-interest and tax) on this basis. The NERA report also refers to an estimate of the effect of a reduction in re-lease rentals which reduced the IRR by [X] per cent, and an estimate of the impact of an allowance for RVAR which reduced the IRR by [X] per cent.
144. Porterbrook said that these calculations [X] the ORR benchmark range of 6 to 8 per cent though a more appropriate benchmark would be around 11 per cent.
145. Porterbrook then adjusted the IRR calculation to reflect the estimated impact of tax cash flows, by considering rentals less capital allowances, at 30 per cent. This has the effect of reducing the IRR on MOLA rolling stock from [X] to [X] per cent and the post-MOLA IRR from [X] to [X] per cent.

⁴⁰Porterbrook initial submission to the CC, 4 June 2007, paragraph 4.11.

⁴¹Based on a report from Quasar Associates which adopted a deliberately cautious approach.

⁴²Porterbrook response to Emerging Thinking 18 January 2008.

The Quasar Associates report

146. The Quasar analysis was based on comparisons with the rent that would be charged for equivalent new rolling stock, adjusted for the age of the rolling stock, its general re-leasing appeal, expected heavy maintenance costs and the expected economic life of the rolling stock.
147. The report noted that there was full utilization of all but life-expired stock and therefore the key determinant of prices was the rent on equivalent new stock. Quasar assumed a minimum discount of [30] per cent discount to new rolling stock prices, rising to [30] per cent for trains in the last re-lease period before retirement. It assumed that total rents were not substantially increased from current levels and were only above the current fleet levels where major refurbishment was being contemplated. The report included a commentary on the specific discount factors applied to each fleet.

Porterbrook comments on the DfT's approach

148. Porterbrook⁴³ said that the ORR analysis relied too heavily on the 'fundamentally flawed' DfT profitability analysis. It considered two of the DfT's valuation bases, the initial privatization price and the DfT's DRC, to be 'wholly inappropriate'.⁴⁴ Porterbrook also commented that the ORR's estimates were compared with very low benchmark rates of return.
149. Porterbrook⁴⁵ expanded on its assertion that the privatization price was inappropriate. It referred to the NAO report,⁴⁶ where a number of factors depressed the proceeds and commented that a discount could have been even greater than was usual in privatizations.⁴⁷ It quoted external surveys of IPO discounts and said that the ORR's reference to Railtrack was inappropriate because the share price continued to gain value significantly after the opening day. Porterbrook subsequently noted that there was a further 59 per cent increase in the Railtrack share price to May 1997. Porterbrook commented that the 15 per cent uplift on the first day trading of Railtrack (as referred to by ORR) bore no relation to the adverse impact on asset values from the significant political and commercial uncertainty.
150. Porterbrook expressed concern over the CC's use of the NAO report on the grounds that it took place before the Abbey acquisition and therefore did not consider the evidence of the acquisition; that it was carried out for a different purpose ten years ago, and therefore the NAO report was unlikely to be sufficiently robust for the CC to rely on it.
151. Porterbrook also commented that the DRC calculated by the DfT was far too low and thereby overstated its profitability because Henry Butcher's calculation was an assessment of market values which relied on highly subjective judgements. It said that the assumption of 25 per cent day-one depreciation was unsupported. NERA said that a more reasonable depreciation basis would be 2.9 per cent a year straight-line depreciation (or 1/35th of the asset's gross value) and that using this would result in a much higher DRC value.

⁴³Porterbrook initial submission, 4 June 2007.

⁴⁴Ibid, paragraph 1.8.

⁴⁵Ibid, 4 June 2007.

⁴⁶NAO, *Privatisation of the Rolling Stock Leasing Companies*, 5 March 1998.

⁴⁷The NERA report notes that average discounts of 40 per cent are reported in economic literature.

152. Porterbrook said it believed that Henry Butcher calculated market values, not DRC, that this led it to take into account factors which did not impact DRC and that the assumptions did not take account of the impact on TOC revenues and costs.
153. To support this statement, NERA compared the DfT's depreciation profile with two other profiles which it calculated based on adjustments to the straight-line depreciation. These adjustments reflected the reduced attractiveness (ie it assumes older trains earn lower lease revenues) and higher maintenance costs of older trains, resulting in more depreciation charged earlier in the asset's life than under straight line depreciation. These two methods differed from each other in the size of the revenue adjustment; the first included an 'aggressive revenue adjustment' and the second a 'suggested revenue adjustment' based on the Passenger Demand Forecasting Handbook. The results were two depreciation profiles which more closely resembled straight-line depreciation than the DfT's profile.

CC comment

154. We noted that Porterbrook's analysis was based on whole-life IRRs which started from the Abbey acquisition. Porterbrook said that the economic value of the assets could be higher than the Abbey values based on DRC calculations for two fleets. We consider the arguments concerning DRC in detail in Appendix 6.5. We comment on Porterbrook's submissions below.
155. We were concerned that both the Abbey fair values and the DRC value, if rolled back to privatization or the Stagecoach acquisition, were likely to result in values that were higher than either the then purchase price for the business or the fair value of the assets. We also considered that the asset values at the Stagecoach acquisition would provide better evidence as this acquisition occurred closer to privatization and so this reduced the possibility of excess profits being capitalized. We have applied a sensitivity in our analysis to take account of the impact of the revaluation in the asset base at the time of the Abbey acquisition.
156. We observed that the Porterbrook pre-tax IRR calculations showed that the MOLA returns were [X] per cent [X] than post-MOLA. Porterbrook also noted sensitivities for re-leasing risk and RVAR but did not comment on whether these sensitivities would affect MOLA or post-MOLA to the same extent.
157. We noted that the post-MOLA returns of [X] per cent were [X] than Porterbrook's WACC range of [X] per cent. We comment on Porterbrook's WACC range in Appendix 6.6. We also noted that on the MOLA rolling stock IRRs of [X] per cent were [X] Porterbrook's WACC range.
158. Porterbrook's estimate of the tax impact had the effect of reducing the MOLA IRR from [X] to [X] per cent and the IRR on post-MOLA rolling stock from [X] to [X] per cent. These percentage reductions imply an effective tax rate of [X] per cent on MOLA assets and [X] per cent on the post-MOLA assets. We observed that there was a cash-flow benefit for the new rolling stock assets arising from group relief receipts for losses surrendered whereas the MOLA assets bear a higher tax rate because the capital allowance pool was less than that available to new trains. The information memorandum at privatization referred to £176 million of tax-allowable expenditure for Porterbrook, and this represented around 38 per cent of the £467 million historic NBV of assets at privatization.

Comparison of profitability estimates

159. In this section we present a comparison of the profitability estimates of the parties for post-MOLA and MOLA.

Post-MOLA returns

160. In Table 11 we set out a comparison of the parties' profitability submissions on post-MOLA. Angel presented a number of re-lease scenarios and in this table we have presented the data on the highest IRR scenario, the flat re-lease rental.

TABLE 11 Comparison of rates of return for post-MOLA rolling stock

Party	Basis	Return %	Taxation
DFT	IRR from 2005	5.11–6.64	Pre
	IRR from 2005	7.43–9.69	Post
Angel	IRR whole life	[REDACTED]	Pre
	IRR whole life	[REDACTED]	Post
HSBC	2002–2006 Accounting ROCE	[REDACTED]	Pre
Porterbrook	IRRs from pre-interest cash flows and Abbey acquisition asset values	[REDACTED]	Adjusted for relative tax impact
		[REDACTED]	Post

Source: CC analysis, parties' data.

161. Table 11 shows that the ROSCOs' submissions on post-MOLA profitability on a pre-taxation basis show [REDACTED].⁴⁸

MOLA returns

162. The parties' submissions have presented returns for MOLA rolling stock on a number of asset bases. In Table 12 we have compared the rates of return for MOLA rolling stock on the basis of purchase price values which in principle are comparable. The Angel data in the table is again based on the flat re-lease rental scenarios.

⁴⁸[REDACTED]

TABLE 12 Comparison of rates of return for MOLA rolling stock

Party	Purchase asset value	Return %	Taxation
DfT	IRR from 2005	8.0–9.6	Pre
	Angel	[redacted]	
	HSBC	[redacted]	
	Porterbrook	[redacted]	
ORR	ROCE 2003–2005	[redacted]	Pre
Angel	IRR whole-life RAB	[redacted]	Pre
	IRR whole-life 1998 DRC	[redacted]	Pre
	IRR whole-life RAB	[redacted]	Post
	IRR whole-life 1998 DRC	[redacted]	Post
HSBC	2002–2006 Accounting ROCE	[redacted]	Pre
Porterbrook	IRRs from pre-interest cash flows and Abbey acquisition values	[redacted]	Adjusted for relative tax impact

Source: CC analysis, parties' data.

163. The Porterbrook purchase value was based on the Abbey acquisition in 2000, whereas the purchase values for HSBC and Angel are based on earlier dates closer to privatization. We expected to see relatively lower returns for Porterbrook on this basis.
164. We commented in Appendix 6.5 that the Abbey revaluation represented a 30 per cent adjustment to the revalued asset base. If we were to strip out this adjustment to approximate the IRR based on the Stagecoach purchase price, the Porterbrook pre-tax IRR would increase to [redacted] per cent. On this basis, the Porterbrook IRR is [redacted] the HSBC ROCE of [redacted] per cent and [redacted] the Angel RAB basis of [redacted] per cent, although the Angel 1998 DRC basis is [redacted].
165. The Angel pre-tax IRRs are [redacted] per cent [redacted] the DfT estimate when based on the RAB, but are [redacted] per cent [redacted] when based on the 1998 DRC. The DfT's asset value for Angel was based on purchase consideration and therefore is more directly comparable to the RAB asset value. The HSBC ROCE findings are [redacted] per cent [redacted] than the DfT's IRRs. The Porterbrook pre-tax IRRs are [redacted] per cent [redacted] the DfT's estimate and [redacted] per cent [redacted] after considering the impact of the Abbey revaluation.

Comparison of post-MOLA returns with MOLA returns (purchase price)

166. In Table 13 we have compared the parties' own submissions of the returns on post-MOLA compared with the returns on MOLA rolling stock. The MOLA returns are all based on the depreciated purchase price, which was the top end of the DfT's range of asset values. The ROSCOs stated cases for the assessment of profitability all include consideration of asset values that are higher than purchase price and which would therefore show a lower return on MOLA.

TABLE 13 Comparisons of post-MOLA versus MOLA (purchase price)

Party	Tax	IRR, per cent		
		post-MOLA	MOLA	Difference
DfT	Pre	5.11–6.64	8.0–9.6	2.89–3.16
Angel	Post	[redacted]	[redacted]	[redacted]
HSBC (accounting)	Pre	[redacted]	[redacted]	[redacted]
Porterbrook	Pre	[redacted]	[redacted]	[redacted]

Source: CC analysis, parties' data.

167. Table 13 shows that from the ROSCOs' submissions MOLA margins (based on purchase price) are higher than post-MOLA, and that the scale of the difference is close to the DfT's range despite the greater range of differences in the underlying data. However, only the Angel figures take the effects of taxation into account. We also note that the Porterbrook difference would increase [redacted] per cent if we disregard the impact of the Abbey revaluation.