Approach to profitability analysis and results

The CC's approach to profitability

1. This appendix sets out the CC's approach to measuring the profitability of ROSCOs and the results of our analysis. In deciding on our approach to measuring profitability we considered our guidelines, the evidence presented by the parties and the commercial practices of the ROSCOs when they price and evaluate leases. ROSCOs' operations fall into two areas: capital leasing and maintenance.[1] This section considers our approach to capital leasing profitability. Our work on maintenance profitability is set out in Appendix 6.8.

2. Normally we would use ROCE to measure profitability, based on accounting returns.[2] However, because ROSCOs operate asset-intensive businesses, accounting returns are very sensitive to the accounting depreciation applied to those assets, which may not reflect their economic value. We also noted that as an asset ages, its NBV declines and where the rental remains constant this will lead to an increase in ROCE, which may not accurately reflect the economic profitability of the asset.

3. However, the ROSCOs' operating cash flows (principally rental income and funding costs) can be more easily determined and forecast than in other industries. We also noted that the ROSCOs used cash-flow-based measures (either IRR or margin over funding rate) as a key indicator in their own assessments of lease profitability. We therefore considered that an approach to measuring profitability based primarily on cash flows rather than accounting profits would be appropriate in this instance.

4. However, we did not discount evidence based on ROCE presented to us. We used a simple, whole company ROCE analysis as a high level cross-check to our results and to estimate the effects of maintenance returns on ROSCO profitability. This ROCE analysis is set out at Appendix 6.8.

5. We also considered the period over which to assess profitability. Three factors appeared important to us in deciding this period. First, the relative immaturity of the rolling stock leasing market, which has only been in operation since 1996; second, the observation that most MOLA stock has only been subject to one opportunity for prices to change at a re-lease; and third, the long life of rolling stock assets. Given these factors, our preference was to assess profitability from the time of privatization. However, we recognized that there were specific risks surrounding privatization which would affect returns.

6. Profitability analysis based on cash flows can either be performed over the lifetime of a business (or in this case, a set of assets), or over a truncated period. In theory, the use of a longer period of analysis allows the variability of profits over economic cycles to be measured, although we noted that this advantage would not apply in this instance because of the long life of rolling stock and the relatively short period since privatization. The advantage of using a truncated period is that it provides results for the exact period over which we are assessing competition, and also avoids the need for assumptions over future cash flows. However, in a truncated analysis, a terminal value of assets needs to be estimated. The difficulties we faced in determining a reasonable estimate of current values for MOLA trains are set out in Appendix 6.5.

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[1] We noted that there are some shared costs between these areas.
[2] *CC3*, paragraph 3.82.

We noted that the results produced by a truncated analysis imply that the assets could be sold at the end of the period of analysis to produce the terminal value cash inflow. We did not believe that such a sale would be feasible in the rolling stock leasing market environment, and so considered that results derived from a truncated analysis would prove inappropriate for our purposes.

7. We therefore considered an approach based on whole-life cash flows from around the period of privatization to be preferable to approaches based on a truncated period, as had been submitted by Porterbrook and HSBC. We decided to measure lifetime profitability based on an opening asset value, historic cash flows and an assumption that current lease rentals and capital costs would remain constant in money terms for the remainder of each asset's life.[3] The asset value at the end of the useful life was assumed to be zero. A useful life would need to be assumed for rolling stock, but we considered that our results would be less sensitive to error in this assumption than to the terminal value in a truncated analysis.

8. For assets built since privatization we used the purchase price and initial lease rental. For ex-British Rail fleets we were not able to obtain accurate construction cost data, and there were no available leasing cash flows before the ROSCOs were formed. This had important implications for the opening asset value, which are discussed below. For those fleets we therefore estimated a remaining lifetime profitability from privatization until the end of their useful economic lives.

9. We next considered the level of detail our analysis should take. Because our assessment of competition looks at the re-leasing of fleets at these points, we sought to examine profitability by fleet, and where a fleet was leased to more than one TOC then the profitability of each lease would be examined. However, we performed our ROCE analysis at a ROSCO level, and considered profitability evidence from parties that was at a ROSCO or a MOLA/post-MOLA fleet level.

10. Our proposed approach to profitability was therefore to attempt to determine estimated lifetime returns, expressed either as a margin over the cost of capital or as an IRR which could be compared with the relevant cost of capital. The margin represents the difference between the overall rate of return on the lessor's investment (in effect the rate of interest on a loan that would be repaid by the lease cash flows) and the actual funding rate.

11. We recognized that, owing to the long life of rolling stock and the relative immaturity of the industry, we would be unable to show that any excessive levels of profits were persistent. We also recognized that, to the extent that we found high profits in used rolling stock based on historic investment, these profits might be explained by the relatively low valuation of these investments compared to the costs which might be faced by a prospective market entrant, and so they may not necessarily indicate problems with competition.

12. These two factors meant that we were not able to determine whether excess profits were being made. However, we noted that profitability issues were given a high profile in the ORR's decision to refer the investigation. The DfT produced an analysis of profitability which showed that, in its view, excess returns were being made on MOLA stock. The ROSCOs also submitted separately detailed analyses which showed profits to be close to the estimated cost of capital. We therefore decided it was worthwhile to attempt to estimate the relative profitability of MOLA and non-MOLA fleets in order to understand and assess these analyses.

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[3]To the extent that changes in lease rentals follow changes in costs, the margin will be unaffected.

13. The benchmark we used to compare returns was the WACC of a hypothetical, 'typical' ROSCO. For post-MOLA stock on its first lease, the WACC was taken at the time of construction. For MOLA assets, the WACC was taken as a weighted average of the WACC at privatization and at the time of subsequent re-leases.

14. Because of the significant capital allowances available to owners of rolling stock, we sought to calculate returns which took account of cash flows relating to tax.

15. We recognized that estimating whole-life margins would not show us the profitability of a fleet over a particular lease period, nor would it show us how margins on particular fleets changed when they were re-leased. Our analysis would therefore not show whether there were profitable opportunities in the rolling stock leasing market that were or were not competed away, either by companies within the market or a new entrant. However, we did expect our analysis to show us whether the ROSCOs were making returns in excess of the cost of capital, whether profitability differed on average between MOLA and post-MOLA rolling stock, and the range of margins between fleets.

Judgements and assumptions

Asset values

16. Our approach to analysing profitability involved making a number of judgements and assumptions. Although we consider that these judgements are reasonable and based on the best available information, we recognize that they may limit the weight that we can place on our results as one piece of evidence among several in our competitive analysis.

17. One of our most significant judgements concerned opening asset values. Our work in this area is set out in more detail in Appendix 6.5. We found it difficult to obtain an accurate value which not only excluded the discount caused by the risks surrounding privatization and the privatization process itself, but also excluded the possibility of any anticipated excess profits being capitalized in the asset value, which would lead to circularity in our analysis.

18. We considered two opening valuations for MOLA stock in our analysis of margins. The first was the purchase values of the ROSCOs when they were first sold after privatization. The second was a value 15 per cent lower than these purchase prices, which we arrived at on the basis of evidence from a National Audit Office report, and a contemporaneous Depreciated Replacement Cost (DRC) valuation from Angel. We applied this 15 per cent revaluation evenly across fleets.

19. Our analysis also assumed that rentals would continue to be constant in nominal terms over the remaining life of the assets. In practice, there is a possibility that rentals might change, but we preferred to address this by considering what an appropriate margin to reflect the risk of these changes might be.

The financial consequences of risk

20. We considered how we would account for the financial consequences of risk in interpreting our results. The risks faced by the ROSCOs can be divided into two categories. The first is market risks, which an investor in a ROSCO cannot eliminate by holding a diverse portfolio of assets. The return required for these risks is captured in the beta variable in the WACC.

21. The second category of risk is those which can be eliminated by diversification. While an investor might not require a specific return for these risks, they are real risks with financial consequences which will affect a ROSCO's returns. The value of these risks is usually captured in the rental charged by a ROSCO. For example, if there is a risk that a new train might spend a certain period during its life off-lease, then the expected cost of this risk (probability multiplied by outcome) will be reflected in the lease rental charged by the ROSCO.

22. We attempted to quantify a reasonable value for margin that would cover these risks. This process involved significant judgements and uncertainties for the following reasons:

(a) We were not able to observe the 'whole life' costs and returns for any fleet.

(b) The nature of residual value risk for ROSCOs is that the probability of a risk event (eg rolling stock going off-lease) is low, but the financial consequences are large.

(c) The immaturity of the industry meant that there was little historic evidence on which to make an estimation of the probabilities of such events. Furthermore, risks vary between fleets and over time.

23. We noted that ROSCOs were unable to quantify this risk, preferring to use commercial judgement when determining whether a lease price would cover the risks. We also noted that there was no market in residual value risk for passenger rolling stock, unlike in other leasing industries.

24. While accepting that levels and types of risks would inevitably change over time, we examined past events where risks had crystallized to see whether this would tell us anything about the reward required for risk over the whole life of rolling stock assets. We considered impairments to asset values made by the ROSCOs, reductions and extensions to useful economic life, and unplanned capital expenditure on fleets which was not rentalized. The results of our work are set out in Appendix 6.7.

25. For the reasons above, and despite the work we performed on risk, we did not consider that we would be able to quantify accurately the effect of these specific risks on the prices charged by the ROSCOs, nor on the resulting profit that would be earned if these risks did not crystallize. For this reason, we were unable to determine whether profits on individual fleets were substantially in excess of the cost of capital.

26. Notwithstanding the difficulties involved in estimating the financial effects of risk, we considered that our analysis might provide indications of fleets with particularly high or low margins, and would also allow us to compare MOLA and post-MOLA returns. We also considered that the average margins on post-MOLA, which we found were derived from competitively determined prices, could be used as a benchmark for MOLA margins.

Parties' comments on our approach

27. HSBC said that it had 'serious concerns' as to the approach taken by the CC. It said that the CC's methodology was 'inadequate for assessing whether or not ROSCOs have earned returns in excess of competitive levels', and that 'the margin analysis undertaken provides only a snapshot measure of profitability at the time of acquisition and does not provide meaningful evidence of competitive outcomes at re-letting'.

28. HSBC put forward a number of explanations why the realized return on the original investment (as estimated by the CC) might differ from the cost of capital. These include an increase in new rolling stock prices, management of the utility of an older fleet through refurbishment and a reduction in risk as expected risk out-turns in 1997 did not fully materialize, and the outcome of competitive processes.

29. We considered these points carefully. We acknowledged the limitations of our analysis but considered that our approach was appropriate given the asset valuation issues set out above and in Appendix 6.5. We considered the explanations set out by HSBC in our interpretation of the results. We also noted that profitability results, even when derived accurately, cannot prove the extent of effective competition. Furthermore, we noted that the extent and persistence of observed profits in excess of WACC needed to be considered.

30. Angel said that a lifetime IRR approach was the correct one. It also said that 'if the CC were to analyse profitability on a fleet-by-fleet basis, it is important to interpret the results of that analysis in conjunction with other competitive factors for each specific fleet (ie that the profitability results should not be viewed in isolation)'. We noted that Angel also submitted an econometric analysis which failed to find a statistically significant relationship between their measure of competition and forward-looking IRRs of individual lease contracts (having controlled for the age of the rolling stock).[4]

31. We noted these comments, and considered the competitive factors for each specific fleet in Appendix 4.3.

32. The DfT broadly agreed with our general methodology in calculating profitability. However, it expressed concern over a number of aspects of this assessment, in particular over the way in which some of the key variables (such as asset values and cost of capital) were determined by the CC, which it considered to be too generous towards the ROSCOs, and over the way in which the results have been interpreted by the CC. The DfT emphasized, in particular, that changes in the ROSCOs' costs of capital should be reflected in lease rentals at the point of re-leasing.

33. The DfT also maintained that the CC had the information it needed in relation to ROSCO profitability and was able to use this to quantify the consumer detriment resulting from the AEC identified. The DfT disagreed with the CC's approach to calculation of consumer detriment.

[4]Oxera *Further analysis of competition in the rolling stock leasing market*, 2 June 2008.