

Margins and risk

Introduction

1. This appendix describes our analysis of the margins¹ on capital leases for each of the three ROSCOs for each of the fleets currently on lease and earning revenue.
2. Our approach to analysing profitability is set out in Appendix 6.4. We decided to measure whole-life (or in the case of MOLA stock, remaining-life) profitability of fleets, preferably expressed as a margin over WACC.
3. We asked the ROSCOs for margin information on their fleets. For post-MOLA, all three ROSCOS were able to provide us with whole-life margins based on contracted and expected cash flows over the entire life of the asset, which was generally assumed to be 30 years. However, we were unable to obtain comparable data for MOLA stock.
4. One ROSCO (Porterbrook) provided us with remaining-life post-tax margins for its MOLA stock from the date it was acquired by its current owner. Another ROSCO (HSBC) provided us with pre-tax margins for its MOLA stock from the date the ROSCO was acquired by its current owner. A third ROSCO (Angel) was unable to provide data on margins for its MOLA stock but instead provided IRRs for the shorter period of the current lease.
5. The asset value used as the basis for the margins or IRRs was based on the fair value allocated to the assets when the ROSCO was acquired. These values were therefore equivalent to the purchase price described in Appendix 6.5. We have

¹The margin or IRR over the funding rate, depending on context.

applied the sensitivities described in Appendix 6.5 to enable us to consider the impact of a lower asset value on the margins.

6. We are still evaluating the impact of taxation on the relative comparison of MOLA and post-MOLA margins. We recognize that MOLA assets bear a higher effective tax rate than post-MOLA because lower capital allowances were available. For this reason we are seeking to compare post-tax margins. The ROSCOs profitability submissions include consideration of the impact of taxation. However, there are very significant differences between the ROSCOs concerning their assessment of the relative impact of taxation on both post-MOLA and MOLA profitability. For this reason, at this stage our analysis has been based on a 30 per cent tax rate applied to both post-MOLA and MOLA.
7. We have set out in Appendix 6.8 our analysis of overall ROCE which forms a sense check of our findings from this analysis of margins.

CC adjustments

8. We made adjustments to the margin and IRR data provided by the ROSCOs to enable us to assess their profitability. Each ROSCO provided a different dataset, so we first set out the adjustments that we have made for all three ROSCOs and then comment separately on the differences for each ROSCO.

Common adjustments

9. In addition to the margin data, each ROSCO also provided us with the average funding rate used in the derivation of the margin, which represented an internal funding rate.

10. We adjusted the margin to take into account the actual cost of debt at the time of privatization and re-lease. Our calculations of this cost of debt are set out in Appendix 6.6. For post-MOLA stock, we took the cost of debt to be that prevailing at the time of first lease. For MOLA assets, we took the cost of debt to be an average of the cost of debt at privatization and at re-lease. This average was weighted by the number of years between privatization and re-lease, and the number of years between re-lease and the end of the stock's useful economic life.
11. We also noted that margin data provided assumed 100 per cent debt funding. We therefore adjusted the margin to reflect the higher WACC which would arise from our chosen capital structure of 25 per cent equity and 75 per cent debt. Our calculations on the post-tax cost of equity showed that it was approximately 2 per cent higher than the post-tax cost of debt. With the gearing level above, this represented a downwards adjustment of 0.5 per cent to the margin.
12. The assumption of 75 per cent debt funding rather than 100 per cent (to allow for a reward to equity) leads to the loss of tax relief on the 25 per cent of debt that is no longer available as a taxable deduction. We therefore needed to account for the tax payable on the cash flows which would reward equity which varies between leases depending on the cost of equity. We first adjusted our post-tax cost of equity on to a pre-tax basis and then applied an assumed 30 per cent tax rate, as follows:
$$(\text{post-tax cost of equity}/0.7)*30\%*25\%$$
13. The range of adjustments to the margins was between 0.8 and 1.1 per cent.
14. We noted that the margins submitted to us did not take overheads into account. We therefore adjusted the margins to take into account an allocation of overheads to

capital leases. The adjustment resulted in a 0.3 per cent reduction in margins for all leases. Our methodology in arriving at this 0.3 per cent is set out in Annex 1.

HSBC-specific adjustments

15. HSBC originally submitted pre-tax margins and therefore the tax cash flows relating to the corporation tax payable on the margin had not been taken into account. In other words, the margin is considered tax deductible in the lease analysis. Accordingly, we reduced the margin after all the adjustments described above by 30 per cent to reflect these tax cash flows.
16. HSBC recently submitted margin data that had been adjusted to a post-taxation basis. We will be considering these post-tax margins in greater detail as we evaluate the impact of taxation.

Porterbrook adjustments

17. Porterbrook originally submitted post-tax margins and therefore there were no additional specific adjustments concerning taxation.
18. The Porterbrook margin data was, however, adjusted to eliminate the revaluation at the time of the Abbey acquisition. This adjustment was made to represent the Porterbrook data based on the purchase price at the time of the earlier Stagecoach acquisition.

Angel adjustments

19. Angel originally submitted pre-tax margins for post-MOLA stock. Accordingly, we reduced the margin after all the adjustments described above by 30 per cent to reflect these tax cash flows.

20. Angel did not calculate margins for MOLA stock. It calculated IRRs for the remaining period of the current lease. These IRRs were presented on a pre-tax basis, and so we wanted to compare these to the pre-tax cost of capital.
21. In our calculation of a benchmark, we included an allowance of 0.3 per cent for overheads. Our methodology in arriving at this 0.3 per cent is set out in Annex 1.
22. Angel submitted an analysis which estimated a single, long-term effective tax rate for its activities of between [X] and [X] per cent based on a stylized lease. It also submitted assumptions that set out different gearing levels and tax rates for MOLA and post-MOLA fleets. It said that the gearing on MOLA stock was [X] per cent debt and the effective tax rate was [X] per cent. For post-MOLA, the gearing was [X] per cent debt (similar to the 75 per cent used by the CC) and the effective tax rate was [X] per cent.²
23. While we believe that our gearing of 75 per cent debt was the appropriate one to use for both MOLA and post-MOLA fleets, we were unsure how to interpret the big difference in tax rates between MOLA and post-MOLA stock. For our provisional findings report we therefore continue to apply the marginal 30 per cent tax rate as set out above, but note that if we had used the different tax rates set out by Angel in its submission we would see a smaller difference on a post-tax basis between MOLA and post-MOLA stock.

ROSCOs margins

24. In this section we examine the margin data (and IRRs) submitted to us by the ROSCOs. We start with post-MOLA for all ROSCOs and we then consider MOLA

²Angel said that the assumed effective tax rates for the ex-British-Rail and post-MOLA rolling stock, however, were informed by the actual relationship observed between pre-tax and post-tax whole-lifetime IRRs, derived from actual data (as reported in the Oxera profitability report). The gearing levels attributed to the two businesses in doing this were estimated by Oxera using a set of logical assumptions and observations about debt structure.

separately for each ROSCO. In each section we first consider a simple average and then follow this with a weighted average.

Post-MOLA leases

25. For the purposes of our analysis we have defined post-MOLA as rolling stock that is new since privatization. In Figure 1 we present the whole-life margins for all three ROSCOs for post-MOLA assets by reference to the age of the asset. The margin data is presented after our adjustments.

FIGURE 1

ROSCOs' combined range of post-MOLA vehicles

[REDACTED]

Source: CC analysis of data provided by HSBC Rail and Porterbrook.

Notes:

1. Porterbrook's Class 57 has been submitted as four years old. However, we understand that this class is actually a significant refurbishment of Class 47 (built in 1963–68). Due to the uncertainty of the data, it is not included in our analysis. However, we note that it is a very small fleet and therefore not significant.
2. Angel margins have been calculated by the CC from IRRs submitted by Angel.

26. We note that leases covering post-MOLA rolling stock form a relatively tight range of whole-life margins with two exceptions, and that there is no particular pattern visible from the distribution of the data points. We take the approximate range to be between the highest and lowest points of 2 to –3.5 per cent but have excluded the outlying points of 2.6 per cent [REDACTED] and –6.0 per cent [REDACTED].
27. The simple average for post-MOLA margins (excluding the two outliers) is –0.82 per cent. The average for Angel is [REDACTED] per cent, the average for HSBC is [REDACTED] per cent and the average for Porterbrook is [REDACTED] per cent.

28. We note that the investment in new assets is generally the cost of acquisition of the asset. For Porterbrook, however, there are a few exceptions, where there has been a revaluation at the time of the Abbey acquisition in 2000.³ [✂]
29. In Figure 2 we re-present the data points from Figure 1 in the form of bubbles. The relative size of each bubble represents the relative scale of each margin point expressed as the number of vehicles.

FIGURE 2

ROSCOs' relative scale of 0- to 10-year vehicle leases

[✂]

Source: CC analysis of data provided by HSBC Rail and Porterbrook.

30. From a visual analysis of Figure 2, there appears to be no specific relationship between fleet size and margin.
31. Our analysis appears to imply that in some cases post-MOLA may not be economically profitable. Some of the submissions from the ROSCOs (set out in Appendix 6.3) imply that the effective taxation rate on post-MOLA may be below the 30 per cent statutory rate, which we have used in our analysis. A lower effective rate would have the effect of increasing the perceived post-MOLA profitability.
32. The analysis may also imply that the ROSCOs presume that specific risk is minimal.

HSBC margins

33. The margins for HSBC stock are set out in Figure 3. Three sets of data are presented: the blue points represent the data submitted to us by HSBC based on purchase price, the green points are the data after the CC adjustments set out

³[✂]

above, and the red points represent the CC-adjusted margin after a 15 per cent downward revaluation in the opening asset value as described in Appendix 6.5.

FIGURE 3

HSBC rail leases, margins over time

[REDACTED]

Source: CC analysis of data provided by HSBC Rail.

34. Figure 3 shows that MOLA stock margins are generally [REDACTED] than post-MOLA stock on HSBC's unadjusted margins. Our adjustments have the effect of [REDACTED].
35. We note that the HSBC average of margins for post-MOLA (after CC adjustments) is [REDACTED] per cent. The average MOLA margin (after CC adjustments) is [REDACTED] per cent and after the revaluation deduction this increases to [REDACTED] per cent. On a weighted average basis this latter point is slightly [REDACTED] at [REDACTED] per cent.
36. In Figure 4 we re-present the data points from Figure 3 in the form of bubbles. The relative size of each bubble represents the relative scale of each margin point expressed as the number of vehicles.

FIGURE 4

HSBC all stock, adjusted margins (weighted)

[REDACTED]

Source: CC analysis of data provided by HSBC.

Note: post-MOLA bubbles are based on adjusted margin and MOLA bubbles are based on adjusted margin after 15 per cent revaluation deduction.

37. Figure 4 also shows that there is no clear relationship between fleet size and margin.
38. Our analysis of the HSBC data appears to imply that MOLA margins are on average [REDACTED] than post-MOLA based on CC adjusted data and [REDACTED] after the revaluation

deduction. [REDACTED] The scale of the difference between the MOLA and post-MOLA margins is also significantly affected by the revaluation sensitivity.

39. Some of the submissions from the ROSCOs (Appendix 6.3) also imply that the taxation rate on MOLA may be above the 30 per cent statutory rate, which we have used in our analysis. A higher rate would have the effect of reducing the perceived MOLA profitability.
40. We have already commented that the effective post-MOLA tax rate may be below 30 per cent. As the MOLA rate may also be higher than 30 per cent, the combination of the taxation effect would be to reduce the difference in the margins between the MOLA and post-MOLA fleets.
41. We also note that there are a number of MOLA leases earning revenue where a margin was not calculated by HSBC. These are situations where the assets are past their useful economic life (UEL) and are therefore fully depreciated, but remain on lease. As there is no cost base for these assets, most of the revenues would be additional margin.⁴ [REDACTED]⁵

Porterbrook margins

42. The margins for Porterbrook are set out in Figure 5. Four sets of data are presented: the blue points represent the data submitted to us by Porterbrook, the green points are the data after the CC adjustments set out above, the red points represent the CC-adjusted margins after a 30 per cent downward revaluation in the opening asset value to approximate the Abbey revaluation effect (Appendix 6.5) and the yellow points represent a further 15 per cent downward revaluation in the opening asset value also as described in Appendix 6.5. The 30 per cent Abbey adjustment is

⁴[REDACTED]
⁵[REDACTED]

intended to present the Porterbrook data as at the time of the Stagecoach acquisition, which therefore represents depreciated purchase price.

FIGURE 5

Porterbrook leases, margins over time

[REDACTED]

Source: CC analysis of data provided by Porterbrook.

43. The Porterbrook average range of margins for post-MOLA, after CC adjustments, is [REDACTED] per cent. The average MOLA margin (after CC adjustments) is [REDACTED] per cent and after the Abbey revaluation deduction this increases to [REDACTED] per cent and increases again to [REDACTED] per cent after the general revaluation deduction. On a weighted average basis, these adjusted points are slightly [REDACTED] at [REDACTED] and [REDACTED] per cent respectively.
44. In Figure 6 we re-present the data points from Figure 5 in the form of bubbles. The relative size of each bubble represents the relative scale of each margin point expressed as the number of vehicles.

FIGURE 6

Porterbrook all stock, adjusted margins (weighted)

[REDACTED]

Source: CC analysis of data provided by Porterbrook.

Note: Post-MOLA bubbles are based on adjusted margins and MOLA bubbles are based on margin after combined 45 per cent revaluation deduction.

45. Figure 6 shows that there appears to be no relationship between margin and fleet size.
46. Our analysis of the Porterbrook data appears to imply that MOLA margins are on average [REDACTED] than post-MOLA based on CC-adjusted data, [REDACTED] after the Abbey revaluation deduction and [REDACTED] after the general revaluation deduction. [REDACTED] The scale

of the difference between the MOLA and post-MOLA margins is also significantly affected by the revaluation sensitivity.

47. Porterbrook's submissions are based on post-tax data and therefore the margins on the MOLA and post-MOLA fleets appear to be comparable.
48. There are a number of significant post-MOLA fleets with £[redacted] million revenue where the data is not included in our tabular analysis. [redacted] Our unadjusted average post-MOLA margins are between [redacted] per cent (weighted average) and [redacted] per cent (simple average) and if we include these in our tabular analysis it would have the effect of reducing the post-MOLA average profitability.
49. We also note that there are a number of MOLA leases earning revenue where a margin was not calculated by Porterbrook. These are situations where the assets are past their UEL and are therefore fully depreciated, but remain on lease. As there is no cost base for these assets, most of the revenues would be additional margin. The annualized revenue for these assets is small compared with total revenue and is not likely to be significant.

Angel post-MOLA margins and IRRs

50. The Angel data represents contractual current lease IRRs for the MOLA stock, and whole-life IRRs for recent post-MOLA acquisitions, on a pre-tax basis.
51. Angel told us that 'for the MOLA fleets, IRRs are calculated by discounting both "real" and "accounting" cash flows over the contracted lease life including: opening accounting NBV⁶ and goodwill;⁷ any new investment; the lease cash flows; the

⁶Depreciated purchase price, straight line.

⁷Goodwill depreciated on a straight-line basis to the earliest of 2014 or the asset's UEL.

projected end NBV and goodwill based on straight-line depreciation'. Angel described this as 'a simplistic mix of accounting and cash flow concepts'.

52. Figure 7 sets out a comparison of some of the post-MOLA leases where Angel has supplied both margin and IRR data.

FIGURE 7

Comparison of selected Angel post-MOLA margins and IRRs

[REDACTED]

Source: CC analysis of data provided by Angel.

Note: [REDACTED].

53. Our analysis of Angel's post-MOLA stock indicates that they generate a range of unadjusted whole-life margins of approximately [REDACTED] per cent and the matching range of IRRs is [REDACTED] per cent. The adjusted average margin for post-MOLA is [REDACTED] per cent. Angel submitted an analysis showing the difference between the IRRs and the margins, illustrated in the following calculations for the [REDACTED] fleet (circled in the figure):

[REDACTED]%—margin

[REDACTED]%—interest funding rate

[REDACTED]%—sum of margin and interest funding rate

[REDACTED]%—tax benefit

[REDACTED]%—pre-tax IRR

54. Angel believed that it was impossible to directly compare margins and IRRs, as it needed to be done on an asset-specific basis because the impact of tax might be different for each lease.

Angel IRR profile for MOLA stock

55. Figure 8 sets out a comparison of Angel's submitted IRRs for its MOLA and post-MOLA fleets with a profile of how a specific lifetime IRR is represented as a series of truncated IRRs over a 30-year asset life.

56. We noted Angel's comment that '... in a market where rentals are generally assume[d] to remain flat over the life of the asset, IRRs ... will always show much higher returns for the asset when it is old than when it is new'. We note that this effect is in part due to the asset base declining over time following straight-line depreciation.
57. Angel submitted a profile which shows how they expect truncated IRRs to behave for a constant lifetime IRR and cash flow. We have used this profile to calculate a benchmark based on our estimate of the cost of capital (7.0 per cent) with the overhead adjustment of 0.3 per cent.
58. In Figure 8 the horizontal line is the whole-life 7.3 per cent IRR. The boxes show the calculated expected truncated IRR for that period using the 7.3 per cent whole-life IRR. Angel's IRR data can therefore be compared with the truncated profile.

FIGURE 8

Approximate comparison of actual IRRs

[✂]

Source: CC analysis.

Note: [✂]

59. Figure 8 shows that post-MOLA whole-life IRRs [✂].
60. From Figure 8, we cannot tell accurately the extent to which the truncated MOLA IRRs lie above or below the expected truncated IRR bars. We can see that [✂]. We are unable to calculate any average return for MOLA stock.
61. Some of the submissions from the ROSCOs also imply that the effective taxation rate on MOLA may be above the 30 per cent statutory rate, which we have used in our

analysis. A higher rate would have the effect of reducing the perceived MOLA profitability.

62. We have already commented that the post-MOLA effective tax rate may be below 30 per cent. As the effective MOLA rate may also be higher than 30 per cent, the combination of the taxation effect would be to reduce the difference in the margins between the MOLA and post-MOLA fleets.
63. We also note that Angel's IRRs are based on purchase price including goodwill. The general revaluation deduction sensitivity (15 per cent) would have the effect of increasing the MOLA IRRs and this effect would be even greater if the goodwill was also excluded from the asset base.

Risk and its reflection in margin

64. In this section we consider some specific risks. In Appendix 6.4 we have explained how we are interpreting the effect of risk in our evaluation of margins. We note that these are 30-year assets, and that privatization occurred in 1996, so there is no available information on a whole-life out-turn. Our analysis can only present a current view of the risks that have materialized since privatization. In doing so, we understand that there may have been fluctuations in expectations of risk over the intervening time period, both positive and negative, and that this past is not necessarily a guide to the future.
65. Our analysis also includes consideration of the age of the asset and the current lifetime margin. These factors will have some bearing on the significance of any risk.

Reductions and extensions of useful economic life

66. The ROSCOs submitted data on fleets where UELs had either been reduced or extended. For currently operational stock we saw both extensions [✂] and reductions (a variety of fleets of different classes) of up to six years. For non-operational stock there were also reductions and extensions—these consisted mainly of slam-door stock.
67. We noted that the presence of fleets which had had their lives increased and reduced meant that the risk of a fleet having its UEL reduced was balanced by the upside potential of UEL increases.

Impairment of assets

68. We next consider the fleets which have had impairments. Accounting impairments reflect the materialization of anticipated reductions in future cash flows triggered by known events. These reductions cause the NBV of the assets to be higher than the value of the discounted cash flows. An impairment is then recorded to reduce the NBV of the assets to the value of the discounted cash flows.
69. Therefore we might expect to find that assets where impairment is recorded are also examples of leases with low margins. There will also be other examples where the ROSCOs have experienced unanticipated rental reductions or void periods where an impairment has not been required because the discounted cash flows remain in excess of the NBV of the assets.
70. The presence and value of an impairment on a certain fleet is evidence of a crystallization of residual value risk. However, we noted that because impairments were made for accounting purposes and were required to be prudent in line with accounting principles, the value of an impairment may overstate the financial

consequence of residual value risk. The value of the impairment would also depend on the accounting policies of the owning ROSCO. We also noted that if impaired stock was re-leased, the impairment was often reduced or reversed.

71. The ROSCOs submitted information on impairments, as set out in Table 1.

TABLE 1 Impairment charges

ROSCO	Class	Number of vehicles	Franchise	Total impairment (2007) '£000	Time period	Age
✂						

Source: Parties' response to market questionnaire and CC analysis; Re-letting reviews from each of the ROSCOs.

72. Impairments have been made on specific fleets which have either been displaced and are off-lease, or where there was an expectation that displacement (eg by new rolling stock) would occur in the future.

73. We also estimated impairment as a percentage of the NBV of the ROSCOs assets. The results are shown in Table 2.

TABLE 2 Impairment as percentage of NBV

ROSCO	Impairment (2007) £m	Average NBV (2007) £m	Impairment as % of NBV %
✂			
Total	[✂]	[✂]	1.4

Source: Parties' response to market questionnaire and CC analysis; re-letting reviews from each of the ROSCOs and responses to financial questionnaires.

74. Where impairments are made, the financial effect is significant for the annual accounts and also for the individual fleets because the impairment reflects an expected reduction in anticipated loss of revenues over a number of years. The table shows that the effect is much less significant as a percentage of NBV. The value of current impairments in 2007 as a percentage of total NBV for 2007 range from [REDACTED] per cent, with an average of 1.4 per cent.
75. The NBVs include revaluations, therefore the impairment percentage to NBV would increase if the revaluation effect were excluded and the impairment were based on the original historic cost of the asset. The effect would be more significant for Porterbrook because the asset base will include the two revaluations made by Stagecoach and Abbey.
76. In margin terms the impairment could come from a reduction in the rental stream, leading to a lower lifetime margin. If an asset were off-lease, the loss of revenue would also lead to a lower lifetime margin, and in this case there would also be additional costs for off-lease storage. Therefore our analysis of margins will already include the expected adverse margin impact leading to these impairments.⁸

Non-rentalized refurbishment expenditure

77. We also considered capital expenditure undertaken at re-lease⁹ by the ROSCOs which was not recovered through higher leasing charges. Unrecovered expenditure is typically undertaken by ROSCOs to improve the quality of older fleets and make them more attractive to TOCs. The expenditure is therefore mitigating the consequences of residual value risk, although it is also a reflection of the scale of that risk.

⁸[REDACTED]

⁹HSBC expressed its concern that we had not included unrecovered expenditure undertaken during a lease. While we accept that this expenditure may also provide evidence of risk, we do not consider that its exclusion from our analysis affects our findings on risk.

78. The ROSCOs submitted data on unrecovered capital expenditure at re-lease, and this is set out in Table 3.

TABLE 3 Refurbishments as percentage of NBV, 2002 to 2007

ROSCO	Refurbishment unrecovered £m	Average MOLA NBV (2007) £m	Refurbishment unrecovered as % of MOLA NBV %	EBIT 2002–2007 £m	Refurbishment unrecovered as % of EBIT %
()			 		
Total					

Source: Parties' response to market questionnaire and CC analysis; responses to financial questionnaires.

Notes:

1. As discussed in Appendix 6.5, Porterbrook NBV may be overstated.
2. Refurbishment unrecovered figures are based on total expenditure greater than £2 million.
3. These figures do not include unrecovered refurbishment expenditure undertaken during a leasing period.

79. The table shows that the three ROSCOs spent £[] million on unrecovered capital expenditure between 2002 and 2007. This represented [] per cent of the NBV of assets, or [] per cent of total profits before tax for the period. The unrecovered expenditure will have been capitalized and therefore is already reflected in the margins we have analysed.

Summary

80. The presence of impairments and unrecovered capital expenditure by ROSCOs demonstrates that there have been negative financial consequences of residual value risk faced by ROSCOs in the past. We note that the unrecovered refurbishment and the rental stream effects of the impairments are generally already reflected in the margins we are analysing. The evidence of both extensions and reductions in UEL suggests that the financial consequences arising from these changes may be positive or negative.

81. Therefore there appears to be some justification for lease rentals to reflect a margin above WACC to cover these specific risks. However, we are unable to quantify the

size of margin from this work, and we note that different fleets may possess different risk characteristics. However, the analysis of post-MOLA margins and the comparison of post-MOLA to MOLA would suggest that the allowance for these risks would be relatively small.

Overheads

1. The ROSCOs incur overhead costs which relate to either capital or maintenance activities or are common to both. We wanted to estimate the proportion of overheads that should be allocated to capital leasing activities in order to take these costs into account in our margin analysis. The ROSCOs do not routinely allocate overheads between capital and maintenance.
2. We considered the evidence on overhead recovery, and noted the wide disparity in the ROSCOs' estimates of the proportion of overheads that should be applied to capital leasing. We did not believe that it was appropriate to allocate overheads entirely to capital leasing as there were undoubtedly overhead costs which could be identified and allocated to maintenance activities. We therefore estimated the effect of overheads on whole-life margin, by considering the margin required to recover overhead costs.
3. We considered a range of scenarios which resulted in a range between the lowest annual margin recovery of 0.1 per cent to the highest of 0.5 per cent. We therefore assessed whole-life margins after they had been adjusted for a factor of 0.3 per cent to represent the allocation of overhead. We considered that this is unlikely to understate the appropriate allocation of costs given the small difference between this estimate and the top and bottom of the range.