

VOLUME RISK II: CREAM-SKIMMING ENTRY – FOR THE UK INLAND MAILS BUSINESS OF CONSIGNIA

Paper 6 of a series of papers prepared by Consignia in June 2002 for Postcomm’s review of the price control for 2003

Summary

This paper considers the implications for the price control review of the volume risk in a liberalised postal sector, where entrants have different obligations to Consignia and can enter market segments with high margins created by low marginal cost related to the uniform tariff.

Any entry into the liberalised market would cause Consignia to lose volume relative to that forecast without entry. If the obligations on entrants were the same as Consignia, the entry would be across all products and, overall, the reduction in Consignia’s cost could be estimated from the loss of volume at the long-run marginal cost. In this case, the appropriate treatment of forecast errors of volume should lead to the hybrid control structure discussed in a separate paper¹.

In practice, there is no obligation on entrants to provide a universal postal service (USP) at a uniform price across the UK. Hence, entrants can choose to enter the niche markets and have an incentive to enter into markets with low entry costs (e.g. market segments with high margins created by low marginal cost related to the uniform tariff). Such entry is referred to as cream-skimming entry. Specific changes to the regulatory framework need to be undertaken to address the issue of cream-skimming entry and these are reviewed in this paper.

In a price control context, cream-skimming entry has two effects:

- i. The reduction in volume from cream-skimming entry leads to a reduction in total cost that is substantially less than the reduction in total cost estimated for the loss of volume at the average long-run marginal cost across all products. Hence, if the level of operating cost in the base-year is adjusted only for changes in volume by reference to such an average of the long-run marginal cost, the allowed revenue would be understated. Consignia considers that an additional revenue allowance, or overlay, within the control should be applied to allow for recovery of the additional costs from cream-skimming entry.
- ii. The reduction in volume from cream-skimming entry leads to the need for a revised and lower forecast level of volume about which changes in cost are less sensitive to changes in out-turn volume than would be implied by volume adjustments valued at the long-run marginal cost. This reflects the low entry costs and changes to Consignia’s costs from cream-skimming entry. Consignia considers that the fixed portion of total revenue within the hybrid control should be increased to about 60 per cent of the total revenue, to address the issue of forecasting error about the revised forecast level of volume used in setting the control.

¹ “*Volume risk I: forecasting errors- for the UK inland mails business of Consignia*”, Consignia, June 2002

In summary, Consignia considers the risks associated with cream skimming entry should be addressed adequately and appropriately in the price control, through adjustments to the level of operating costs and fixed portion of total revenue within the hybrid control.

1. Introduction

Entrants have a choice of entering as a universal service provider (USP), where there is an obligation to provide services at uniform prices for the UK, or as competitors to the USP in niche markets, where there is no such requirement. Consignia considers that, given the choice, entrants will not enter as a USP where their freedom is curbed by the uniform price obligation. Instead, Consignia considers that entrants will enter market segments where profit margins are high. These are created by the combination of the uniform tariff and segments of the market with low marginal cost. Further, Consignia considers that entrants will choose to enter niche markets with low marginal costs for Consignia and high profits for entrants.

Section 2 reviews the optimal structure for the control without cream-skimming entry. A separate paper on volume risk² concludes that Consignia risks are best managed by a hybrid control. In that paper, the proposed hybrid control is one where a portion of revenue, marginally less than the fixed cost portion of total costs, is fixed and independent of volume and the remaining portion of revenue is variable and depends on volume. This provides some protection of revenue and profits if outturn volume falls below, and some incentive to increase volumes above, the forecast volume used in setting the control. The hybrid structure reduces the exposure of Consignia's revenue and profit to changes in volume about the forecast volume used in setting the control at the cost of foregoing higher increased profits if out-turn volumes exceed the forecast volume. In this case, when compared to a hybrid control with the fixed portion of total revenue at 0.3, a pure price control would increase the financial exposure and require an additional revenue allowance of about £0.06 bn per annum³.

Section 3 discusses the optimal structure for the control with cream-skimming entry. Cream-skimming entry has an impact on both the level of costs, in terms of operating costs, and the structure of the hybrid control, in terms of the appropriate fixed portion of total revenue. The impact of cream-skimming entry on the level of operating costs and the hybrid structure depends on the liberalisation proposal. Consignia expects to submit figures on this adjustment to the level of cost and hybrid structure to Postcomm after the liberalisation proposal for use in setting the price control has been confirmed. The effect of the cream-skimming entry is to increase the fixed portion of total revenue in the optimal hybrid structure. For illustration, Consignia sets out the factors involved in deriving an optimal hybrid structure with the fixed portion of total revenue at 0.6. When compared to a hybrid control with the fixed portion of total revenue at 0.6, a pure price control would increase the financial exposure, and require an additional revenue allowance of about £0.12 bn per annum⁴.

The main conclusions of the paper are summarised in section 4.

² See "*Volume risk I: forecasting errors – for the UK inland mails business of Consignia*", Consignia, June 2002.

³ Using the methodology and analysis in Appendix B of "*Volume risk I: forecasting errors for the UK inland mails business of Consignia*", Consignia, June 2002

⁴ See footnote 3

2. The optimal hybrid structure with no cream-skimming entry

The main conclusions from the separate paper⁵ are drawn from the illustrations in Figures 1 and 2. Figure 1 shows the optimal hybrid structure of the revenue curve R for forecast volume Q_1 , fixed cost F and the total cost curve C with a slope equal to the long-run marginal cost. In this case, the fixed revenue as a portion of total revenue for volume Q_1 is marginally less than fixed costs, F , as a portion of total cost. The revenue and cost curves intersect at point A and volume Q_1 to earn a profit π_1 (i.e. the total cost curve includes a measure of allowed profit). The revenue and cost curves are linear and symmetric about point A . Figure 2 shows the profit from the revenue and cost curves such that volume in excess of Q_1 yields marginal increments of profit and volume below Q_1 yields marginal loss of profit.

Figure 1:

The optimal revenue and cost curve without cream-skimming entry at forecast volume Q_1

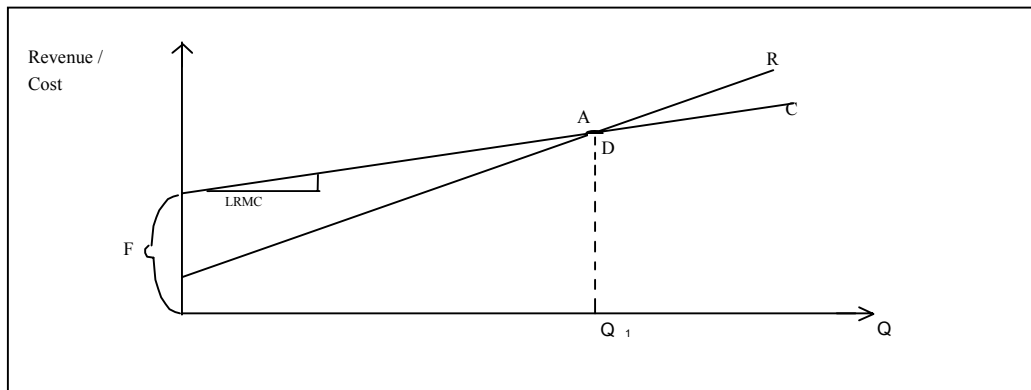
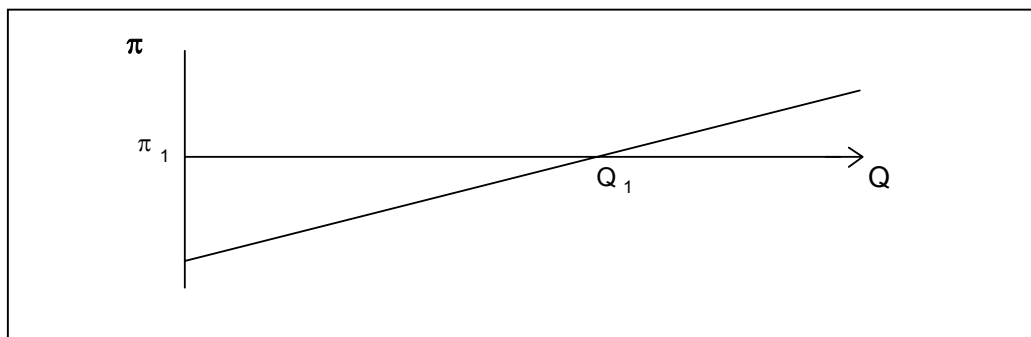


Figure 2:

The optimal profit curve without cream-skimming entry at forecast volume Q_1 .



⁵ “Volume risk I: forecasting errors – for the UK inland mails business of Consignia”, Consignia, June 2002.

3. The impact of cream-skimming entry

3.1 The impact of cream-skimming entry on the level of costs

The impact of cream-skimming entry on the level of costs and profit is illustrated in Figures 3 and 4 respectively. For both figures, the forecast volume Q_2 with entry is formed from a volume forecast without entrants of Q_1 and loss in volume to entrants of $Q_1 - Q_2$.

For illustration, Consignia is at point A on the total cost curve C for volume Q_1 without entry. Since entrants can cream-skim their marginal cost is less than the long-run marginal cost of Consignia for volumes at and below point Q_1 . The marginal cost curve for Consignia from point A for cream-skimming entry is shown as C' . The marginal reduction in cost to Consignia for loss of volume $Q_1 - Q_2$ from cream-skimming entry is shown by the move on the cost curve C' from A to B. For such volume loss, the reduction in cost with cream-skimming entry is less than it would be without cream-skimming entry. Consequently, for the revised forecast volume Q_2 , Consignia's cost at B exceeds the estimate of cost at D on the original total cost curve C. The corresponding reduction in profit from π_1 to π_2 is shown in Figure 4.

Figure 3:

The level of cost at the revised forecast volume Q_2 with loss of volume from cream-skimming entry of $Q_1 - Q_2$.

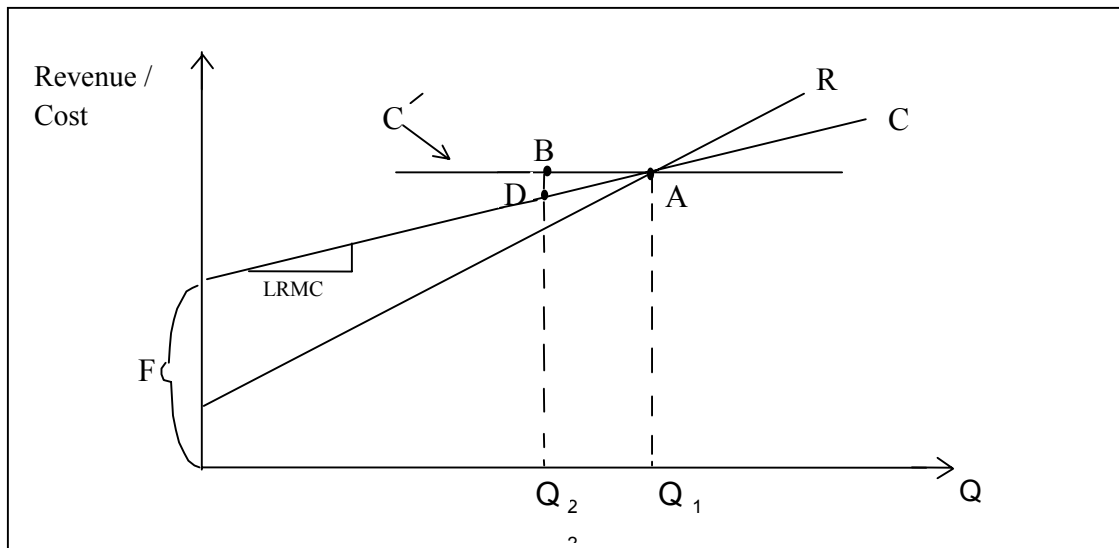
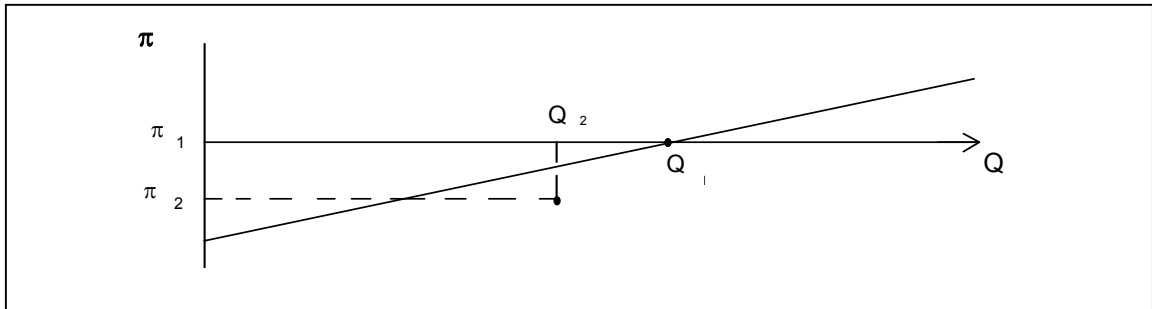


Figure 4:

The level of profit at the revised forecast volume Q_2 with loss of volume from cream-skimming entry of $Q_1 - Q_2$.



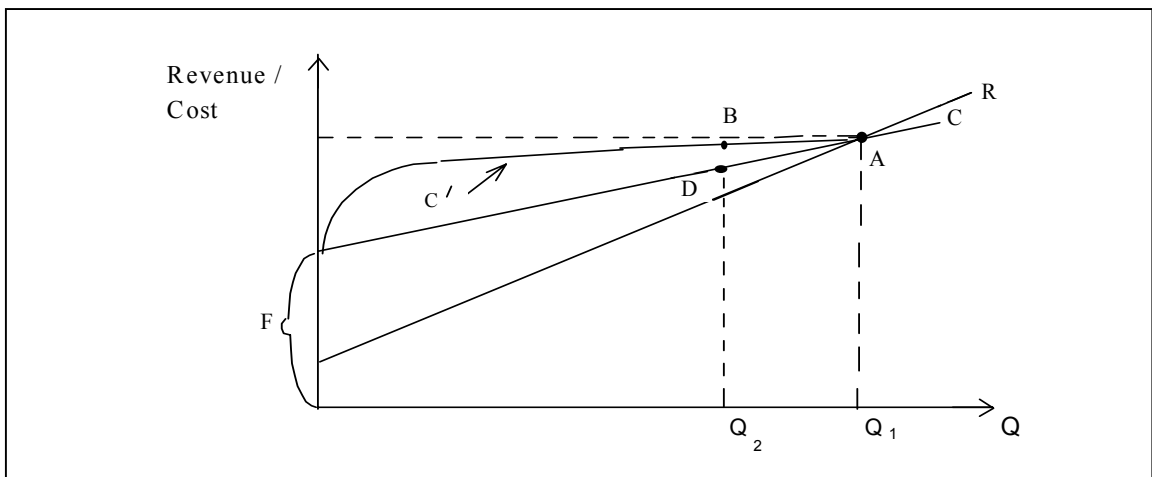
The impact of cream-skimming entry on the level of operating costs depends on the liberalisation proposal used in setting the price control. Consignia expects to submit figures on this adjustment to the level of cost to Postcomm after the liberalisation proposal for use in setting the price control has been confirmed.

3.2 *The impact of cream-skimming entry on the hybrid structure*

Cream-skimming entry involves entrants choosing to enter niche markets where their profit margins are greatest. Entrants will enter, at first, the markets with the greatest profit and will enter subsequently markets with progressively lower profit margins.

Figure 5 illustrates Consignia's total cost curve C' for loss of volume to cream-skimming entry from point A and forecast volume Q_1 . The slope of the curve C' increases with volume loss to entrants from point A, to reflect the increasing marginal cost of entry, and the total cost curve has a value equal to the fixed cost, F , at zero volume. Consequently, at the revised volume Q_2 , Consignia's total cost curve C' with cream-skimming entry at point B is higher than Consignia's original total cost curve C without cream skimming. The total cost curve C' is also non-linear and asymmetric about B.

Figure 5: The cost function with varying loss of volume from cream-skimming entry.

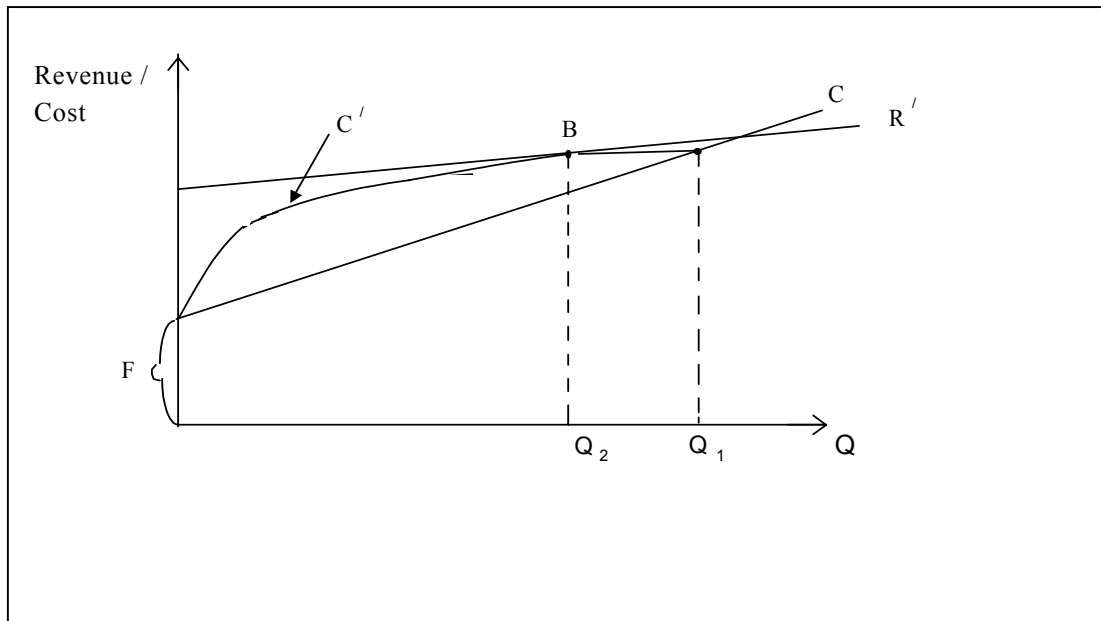


In the previous subsection, the impact of cream-skimming entry on the level of operating costs was discussed as representing a movement from point D on the original total cost curve C to point B on a new total cost curve C'. This could be represented in Figure 5 by the total revenue curve R shifting upwards to pass through point B, such that the additional revenue allowance for the operating cost would be included in the fixed revenue component within the hybrid control. However, this would not take account of the change in the slope of the total cost curves of C' relative to that of C about the revised forecast volume Q₂.

The implication of cream skimming entry is that the slope of the revenue curve would need to reduce to reflect the slope of the revised cost curve C' at point B and about the revised forecast volume Q₂. This is illustrated in Figure 6 by the revenue curve R' through point B. For the purpose of illustration in this paper, the slope of the revenue curve R' is taken to be 0.1. If the slope of the revenue curve R' is 0.1 then the portion of total revenue that would be fixed, and independent of volume, would be about 0.9. The slope of the revenue curve R' depends on the output of the entry Pricing Model and the liberalisation proposals used to set the price control. Consignia expects to submit figures on this adjustment to the slope of revenue curve R' to Postcomm after the liberalisation proposal for use in setting the price control has been confirmed.

Consignia does not consider this to be the optimal hybrid structure because it focuses only on the volume risk associated with potential forecasting error of the volume loss to entrants, Q₁ – Q₂. There is, in addition, volume risk associated with potential forecasting error of the volume Q₁ without entry. The optimal hybrid structure requires both of these two potential components of volume risk to be taken into consideration.

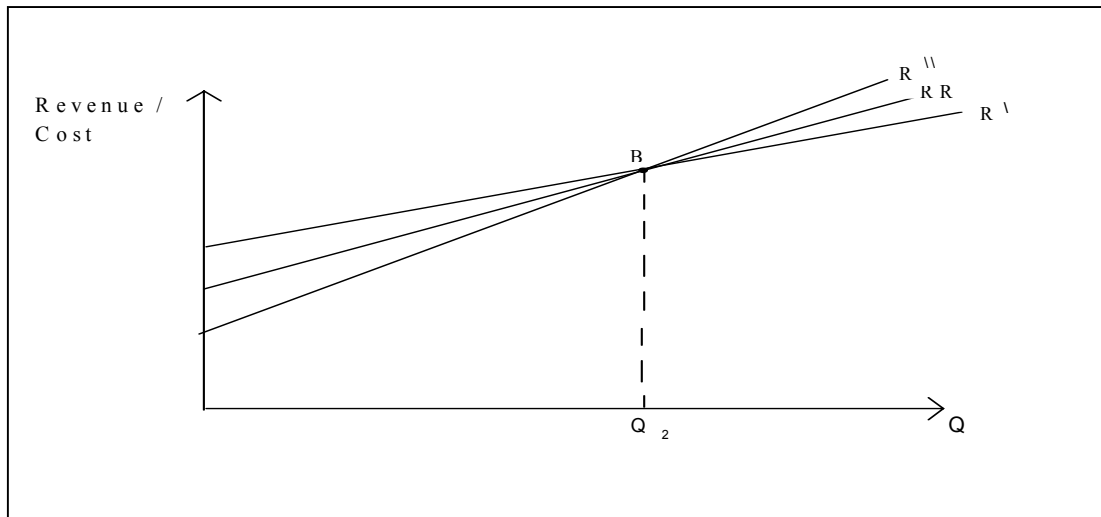
Figure 6: A revised revenue curve, R', with cream-skimming entry.



These two components are illustrated by the corresponding revenue curves of R' and R'' in Figure 7. The revenue curve R' through point B is the same as that in Figure 6. It

represents the appropriate change in revenue about B for potential forecasting error of the volume loss to entrants, $Q_1 - Q_2$. The revenue curve R'' through point B has the same slope as the original revenue curve R in Figure 3. It represents the appropriate change in revenue about B and forecast volume Q_2 for potential forecasting error relating to errors in original forecast Q_1 without cream-skimming entry.

Figure 7: The optimal revenue curve, RR , with cream-skimming entry.



For the purpose of illustration in this paper, the slopes of revenue curves R' and R'' in Figure 7 are taken to be 0.1 and 0.7 respectively. If it is also assumed that the likelihood of forecasting error is the same for the potential forecasting error of the volume loss to entrants, $Q_1 - Q_2$ and the revised forecast volume Q_2 , then the slope of the optimal revenue curve is the average of the two curves. The average slope of the two revenue curves, at 0.4, represents slope of the revenue curve RR of the optimal hybrid control through point B in Figure 7. Consequently, for the optimal hybrid control with cream-skimming entry the fixed portion of the total revenue, as illustrated at point B in Figure 7, is 0.6. This figure is higher than the corresponding figure for the hybrid control: (a) without cream-skimming entry⁶; and (b) with cream-skimming entry but only adjusting for the level of operating cost (see subsection above on “The impact of cream-skimming entry on the level of costs”).

⁶ See “Volume risk I: forecasting error – for the UK inland mails business of Consignia”, Consignia, June 2002.

4. Conclusion

Cream-skimming entry has an impact on both the level of costs, in terms of operating costs, and the structure of the hybrid control, in terms of the appropriate portion of revenue that should be fixed, independent of volume. The impact of cream-skimming entry on the level of operating costs depends on the liberalisation proposal. Consignia expects to submit figures on this adjustment to the level of cost and hybrid structure to Postcomm after the liberalisation proposal for use in setting the price control has been confirmed. For illustration, Consignia sets out the factors involved in deriving an optimal hybrid structure with the fixed portion of total revenue at 0.6. When compared to a hybrid control with the fixed portion of total revenue at 0.6, a pure price control would increase the financial exposure, and require an additional revenue allowance of about £0.12 bn per annum⁷.

While Consignia considers that this proposal would adequately and appropriately address the issues of volume risk to it, Consignia also notes that there may be other means of addressing this risk in part or whole. However, some of the other means, which include an increase to the cost of capital and reducing the duration of the control⁸, are less direct and therefore potentially cause more distortion on incentives than the approach proposed in this paper.

Consignia considers that a pure price control structure and an error correction mechanism could be applied as an alternative to the optimal hybrid structure for changes in out-turn volume about the forecast volume used in setting the control⁹. However, Consignia considers that the volume risk is best addressed through the structure of the control rather than as an add-on to a pure price control.

⁷ Using the methodology and analysis in Appendix B of “*Volume risk I: forecasting errors – for the UK inland mails business of Consignia*”, Consignia, June 2002

⁸ See “*Volume risk I: forecasting errors – for the UK inland mails business of Consignia*”, Consignia, June 2002.

⁹ As stated in “*Volume risk I: forecasting error – for the UK inland mails business of Consignia*”. Consignia, June 2002.