

# **Annex 4**

## **Comments on Access and Price Control in the Postal Sector**

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## **1 Introduction**

The pricing of access and the incorporation of access products in the price control raises two different questions. First there is the issue of what would be the appropriate pricing rules to be set by a regulator which is both welfare maximizing and perfectly informed (about the structure of demand, costs, etc.). Second, there is the problem of how to implement these prices in practice, when information is not perfect. A clear distinction between these two aspects is very useful to assess the different options contained in Postcomm's initial proposal. To see how prices ought to be regulated, we need to know what we want to achieve. Then we can examine whether a specific mechanism is compatible with our objective. Is it suitable to implement the optimum or, if not, how close to the optimum can we get?

The economic literature (including a number of recent contributions that concentrate on the postal sector) has by now been able to provide a precise answer to each of these questions. We shall first review the theoretical issues underlying both of our questions. Then we shall examine their implications for the assessment of Postcomm's initial proposals.

## **2 Optimal prices**

The pricing of access in the postal sector has to be considered along with the determination of the overall structure of prices. The postal network consists of different segments ranging from collection to delivery. We can think of them as activities or inputs in a vertically organized production process. Some postal products, like single piece letters, rely on the usage of all of these inputs. Other products, however, require only a subset of the potentially available activities. This is true for instance for industrial mail, either because worksharing (including customer direct access (CDA)) has occurred, because it has already been processed by some other operator (to whom access is provided) or because some types of clients simply have no demand (no positive willingness to pay) for activities like collection or sorting. These features have important implications for operators and regulators alike. In particular, they are crucial for determining the optimal pricing structure in the industry. Some of the main questions that arise are as follows. How should intermediate goods be priced when they are offered to clients or to competitors? What should be the relationships between discounts and the cost savings associated with the non usage of some segments of the network?

The regulatory design of postal prices including those for workshared mail and for access is essentially a Ramsey-Boiteux pricing problem. The economic theory of the

underlying issues can be formulated very simply. The incumbent operator offers different products to different types of customers and these products include workshared mail and access products. While some of these products are final goods, some like workshared mail may be intermediate goods which are used as inputs by other firms. The pricing of this intermediate good then indirectly determines the prices paid by the final consumers of these products. In a “perfect” (first-best) world the pricing rules for all these products are very simple. We know from microeconomic economic theory that the appropriate rule is simply (long-run) marginal cost for all products. This provides consumers with the correct signals and ensures that the decentralized outcome is efficient.

In an industry like the postal sector, where technology involves “fixed” costs (like the cost of maintaining the delivery network to provide universal service) it is however, typically the case that marginal cost (even long-run marginal costs) are well below average costs.<sup>1</sup> Strict marginal cost pricing is then problematic because it implies that the operator cannot break even, which is usually considered as not acceptable for a number of reasons (including political economy considerations).<sup>2</sup> Consequently, one would have to impose positive markups on at least some products in order to meet the break-even constraint. The determination of these markups is precisely what the Ramsey-Boiteux problem is all about. The question is simply how to distort the different prices away from marginal cost in order to breakeven while keeping the efficiency cost of these distortions as small as possible. The exact specification of this problem and hence the specific results depend on the characteristics of the industry (costs, technology and demand) the general regulatory environment (e.g., the presence of a uniform pricing constraint) and on the type of competition there is between the incumbent and the entrant(s) (competitive fringe, monopolistic competition, some form of oligopoly, etc.)<sup>3</sup> The literature has concentrated on the competitive fringe case.<sup>4</sup> Pricing rules for final goods and for workshared mail are typically inverse-elasticity rules, properly amended to account for cross-price effects (if any). Consequently, optimal prices depend on demand considerations and not just on cost considerations. This is different from the first-best setting where prices simply reflect marginal costs. In a recent contribution, Billette de Villemeur et al. (2003) show that these rules can be generalized to account for imperfect competition.

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<sup>1</sup> Like most of the regulation literature we use the term fixed cost for the part of cost which is independent of output, *even in the long run*.

<sup>2</sup> In a first-best setting this problem can be overcome by a lump-sum transfer to the operator covering its fixed cost.

<sup>3</sup> Uniform pricing constraints bring in extra ramifications. They may preclude marginal cost pricing, even when there is no binding break-even constraint.

<sup>4</sup> See e.g., Cremer et al. (1995, 1997), De Donder et al. (2002a, 2002b), Billette de Villemeur et al. (2003b).

The main conclusions that have emerged from the theoretical literature and its empirical applications can be summarized as follows. First, the discounts applied to access products relative to the corresponding end to end product are given by adjusted avoided cost rules. Put differently, the discount is based on the avoided cost but there is a corrective term which accounts for demand considerations. Second, under plausible assumptions, the corrective term is positive which means that the discount exceeds (but by a relatively small margin) the avoided cost. Observe that a discount that exceeds avoided cost yields an access price which is below that specified by the simple ECPR (or margin) rule.

The discussion so far has concentrated on the case where competition is of the access type (i.e., customers or competitors using part of the incumbent's network). The possibility of bypass may alter these conclusions. When there is a realistic possibility for competitors to build their own delivery network (for example, in some urban areas), corrected ECPR pricing rules may be too high in the sense that they may stimulate (possibly) inefficient bypass.<sup>5</sup> Consequently, they may lead to an inefficient market equilibrium and they may even endanger the financial viability of the USP. Under these circumstances, optimal access prices are below the corrected ECPR levels discussed above although this raises the issue of overall funding and meeting of a break-even constraint by the universal service provider (USP).

### **3 Decentralization of optimal prices**

How can these optimal prices be achieved in practice? In theory, a benevolent and perfectly informed regulator could of course directly control all of the operator's prices. In other words, every single price would be subject to a specific control with no flexibility at all left for the operator. Whether or not one can safely assume regulators to maximize social welfare is a question we shall not debate here. There is, however, the issue of information. Some information may be more readily available to the operator than to the regulator. Even if we neglect the issue of asymmetric information, there remains the issue that there is uncertainty regarding demand and market conditions in general and the availability and interpretation of information on accounting or modelled costs. Consequently, it may be important to design pricing rules in a sufficiently flexible way so that (relative) prices can be adjusted sufficiently fast to changing market conditions. This is not likely to be the case when the operator need the regulator's approval for every single price change.

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<sup>5</sup> When the incumbent's access price is above marginal cost, an entrant may decide to bypass even when its marginal cost (of delivery) is higher than that of the incumbent. This can occur in particular in urban areas when the USP is subject to a uniform pricing constraint.

Direct control of all prices is, however, in any event not necessary to achieve the optimal prices. The economic literature has shown that the optimal pricing structure can be decentralized through a global price cap regulation. The price cap is global in the sense that there is a single basket of all goods, including access products. The restriction imposed on the operator is then that a weighted average of its prices does not exceed a certain level. Both the weights and the level of the cap are exogenous from the operator's perspective (i.e., in any given period the operator considers them as given). When it is subject to such a form of price control the prices set by a profit maximizing operator will also be those that are the socially efficient level of all its prices (including access prices and worksharing discounts).

The next natural question is then how to determine the appropriate exogenous weights. Within the context of the postal sector this question has been addressed by Billette de Villemeur et al. (2003) who show that the weights should be set to be equal to (socially) optimal output levels<sup>6</sup>. Furthermore, when the regulator is not in a position to determine these optimal weights, as would normally be the case, they can be determined through some iterative procedure; this property as established within a different context by Vogelsang and Finsinger (1979) could be adapted to the postal sector. Under this procedure, the monopolist can choose in period  $t$  from the set of prices that would have resulted in zero profit with the quantities sold being those of the previous time period. Vogelsang and Finsinger(1979) show that the resulting prices will converge to second-best (Ramsey) prices under general demand and cost conditions (for instance, demands may be interdependent), provided that demand and cost functions are stable over time and that the incumbent is not strategic. It is this approach that underpins the theoretical basis for "tariff basket" forms of price control.

To sum up, there exist procedures that can effectively decentralize the efficient price structure while only relying on a rather flexible type of price control. There is not a need to have more than one basket. Nor is it necessary to have additional controls on specific products except insofar as the regulator is trying to meet also other objectives such as managing movements of prices of single piece or "stamp" products.

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<sup>6</sup> Formally, the operator would be subject to the constraint

$$\sum_k \alpha_k p_k \leq \bar{p},$$

where  $p_k$  is the price of good  $k$  while  $\alpha_k$  and  $\bar{p}$  are exogenous parameters.

To decentralize the optimal solution it is then sufficient to set  $\alpha_k = X_k^*$  where  $X_k^*$  is (total) output of good  $k$  at the optimal solution.

## **4 Lessons for the evaluation of Postcomm’s “Initial Proposal”**

Postcomm suggests three options that depart from the global price cap policy we just discussed in a number of ways. Neither of these procedures can thus be expected to yield a second-best (Ramsey) solution. Options 2 and 3 rely on the idea of sub-baskets. In Option 2 the dividing line is between access products and other products, while it is between upstream and downstream activities in Option 3. Under Option 3, access products are thus pooled with other “internal” inputs of the USP. In Option 1 the entire price structure is determined from the end to end prices through some specific “discount” rules.

Postcomm’s main objective in offering these options is stated as avoiding “margin squeeze” of access operators (and thus effectively to stimulate entry). This may be a legitimate consideration if the price control is otherwise not optimally designed (for instance because weights are endogenous, as explained below). However, it also involves the danger of generating inefficient entry (i.e., entry by an operator who is less efficient than the USP). We note also that either option also differs from the price cap considered in Section 3 in that weights are endogenous rather than exogenous. The potential danger of margin squeeze would automatically disappear if the weights were exogenous (and properly chosen). This is because (as explained above) such a price cap scheme can decentralize the optimal solution, and this solution involves entry on any given segment if and only if this is welfare improving. In any event the envisioned price control (like the current one) keeps a significant element of cost plus (rate of return) regulation. To be more precise, the control is initiated at a level based on allowable cost (with specified rules for the variations in revenue compared to that benchmark). This raises a number of (essentially unsolvable) cost allocation issues when more than one basket is used.

To the extent that all three options are sub-optimal, it is not possible to assess at this level of generality which one is the best (or rather least sub-optimal) option. On a rather speculative basis, we would nevertheless tend to agree with Postcomm that Option 1 is probably the least unsatisfactory solution. This is in particular because of the practical cost allocation issues implied by the other options. Furthermore, to the extent that it specified a minimum discount it leaves the operator with the possibility to set a lower access price. This may be a crucial degree of freedom in a setting where bypass becomes a relevant option (see Billette de Villemeur et al. (2005)).

A more precise assessment of Postcomm’s options is essentially an empirical question that requires an in depth study. We consider that the development of the analytical model first

set out in De Donder et al (2006) would be likely to generate further insights. That paper considered the implications of a regulator adopting alternative cost allocation and pricing rules in a competitive postal sector with entry but for the case where entrants offer only end-to-end products. The development would involve inclusion of entry through access in addition to bypass.

Observe that a rigorous study of the relative merits of different options involves two steps. The first one is to predict the induced market equilibria. The second one is to evaluate them. This evaluation cannot be simply based on the extent of entry that is generated. Instead we need a sound and careful examination of the welfare implications. Doing this one has to keep in mind that any scenario under which the financial viability of the USP is seriously undermined is not likely to be welfare maximizing. Some of the questions to ask for each scenario are thus the following: (i) is the USP able to break even? (ii) which prices decrease and which increase (will rural households pay the revenue lost from urban firms)? (iii) is the induced entry efficient or is it simply due to (uniform) pricing restrictions? In the meantime, i.e., while these questions remain unanswered, it may be better for Postcomm to leave options open so that the regulatory regime can respond to results from further analysis as well as development of market.

## **5 References**

### **References**

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