Interactions between Regulatory and Antitrust Policies in a Liberalized Postal Sector

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Introduction and Summary

Liberalization has brought many changes to the postal sector. In the European Union and elsewhere, recent decades have seen the "corporatization" of postal operators. Posts have been transformed from Ministerial entities into more or less traditional business enterprises. While privatization has been relatively rare, posts are typically subject to economic regulation by an independent regulator. The "full market opening" of the postal sector (scheduled in the EU for 2009) will mostly likely bring with it additional scrutiny from competition authorities. The liberalization experience of other vertically network industries such as telecommunications and electric power have illustrated that regulatory policy and competition policy are likely to be closely linked.

Historically, not only was the Post a state owned entity (SOE), in most countries it was also an integral part of the government. For example, in the United States, the Postmaster General was a cabinet level position, while in many European Countries, the Post was part of a government ministry: e.g., "The Ministry of Posts and Telecommunications." Under these circumstances, there was little if any room for regulatory or competition policy to operate: "postal policy" was government policy.

This situation changed dramatically in the U. S. with the Postal Reform Act of 1970 (PRA). The United States Postal Service was established as a government corporation whose operational decisions were removed from the political process.

Importantly, the PRA mandated that the Postal Service operate essentially without direct government subsidy: i.e., its operating expenses must be recovered through rates. The PRA also created the Postal Rate Commission as a semi-independent regulatory body to approve the structure of postal rates. Thus a system of cost plus, public utility – style rate regulation was introduced into the postal sector. However, as continued to be the case in other network industries such as telecommunications and electric power, the markets of the USPS were not generally opened to competition under this new regime. In contrast, corporatization did not get seriously underway in Europe until the 1990s, following the issuance of the Green Paper by the European Commission.

The structure of the postal sector differs greatly from country to country, even within the EU. However, I wish to address general issues involving regulatory and competition policy in the sector, rather than the details of such interactions within a particular country. Therefore, I will oversimplify the situation and discuss the interactions between regulatory and competition policy in a hypothetical, "typical" postal sector with certain basic market and institutional characteristics.

Characteristics of a Liberalized Postal Sector

- (1) The incumbent post is a State Owned Corporation (SOE).
- (2) The incumbent post is regulated by a sector specific, postal regulator.
- (3) The incumbent post is a *dominant firm* in at least the letters market.
- (4) As a dominant firm, the incumbent will be subject to the competition authorities, especially concerning charges of "abuse of a dominant position."
- (5) The incumbent's overall *rate level* is controlled by some form of *price cap regulation*, at least for markets in which it is dominant.
- (6) Despite its overall dominance the incumbent post faces actual or potential competition is at least some of its markets.
- (7) Despite the inroads of competition, the incumbent post faces a USO that is at most partially funded.

These characteristics reflect the modal situation in liberalized postal markets, although (with the possible exception of the third), none holds universally. Taken together, these characteristics naturally give rise to the policy issues that are the subject of this paper.

Regulatory and Antitrust Policy Issues

- (1) *Essential Facilities*. What, if any, features of the incumbent's network constitute essential facilities to which the incumbent *must* grant access to its competitors?
- (2) *Downstream Access Pricing*. Should the incumbent's access pricing policies be subject to special oversight by regulatory and/or antitrust authorities? If so, what pricing principles should be applied?
- (3) Extent of Postal Operations. Who determines the scope of the incumbent's operations? What criteria should be used?
- (4) Control of "Cross-Subsidization". What regulatory rules are in place to limit cross-subsidization? When does cross-subsidization become "abuse of dominance?"
- (5) *Universal Service and Uniform Pricing*. How does the incumbent's USO affect its interactions with competitors?

Obviously, these issues are highly interrelated. Also, they tend to require the attention of both regulatory and competition authorities. In such situations, there inevitably arise questions about the appropriate "division of labor" between agencies.

In most countries, the details of this division of labor are just beginning to evolve. In what follows, I shall discuss the considerations that should inform the interactions between regulatory and antitrust policies in each of the areas identified above. A key question is one of redundancy: i.e., Is the role of the antitrust authority merely to guard against "regulatory capture"? Put differently, Would enlightened regulatory policy, in and of itself, ensure that the process of competition was protected in the postal sector?

Access Issues

The ubiquitous network of the incumbent is a tempting target for competitors, entrants, and regulators. A variety of empirical studies have shown that incumbents' delivery networks exhibit significant economies of scale.² Yet, they do not exhibit the substantial sunk costs that characterize the "monopoly bottlenecks" of other network industries such as telecommunications and electric power. Thus one would expect there to be somewhat of a gap between a regulatory approach to mandated downstream access and the essential facilities – based criteria of competition authorities.

¹ New Zealand is an exception. There, surveillance of the open postal market is solely the responsibility of the Commerce Commission. There is no postal regulator.

² Cites to Toulouse empirical papers.

From the regulatory point of view, any activity which exhibits economies of scale has the potential to be efficiently shared with competitors. It does not really matter if the productive resource is "impossible or impractical" to reproduce. If the transactions costs from unbundling are sufficiently low, a policy of compulsory access can be used to open significant portions of the value chain to competition. This argument has little connection with the considerations associated with the typical essential facilities deliberation.

It is perhaps possible to reconcile the regulatory and antitrust views of mandated access in a postal sector in which the incumbent has a statutory delivery monopoly for at least some products. In that case, one could take the view that the illegality of replicating the incumbent's network plays the same role as technical impossibility. In such circumstances, a regulatory policy of mandated downstream access at regulated rates has been demonstrated to have a significant impact on increasing upstream competition and overall cost efficiency in the postal sector.³ However, this harmony begins to be strained once the delivery market is fully opened to competition. In the absence of significant sunk costs, and ample direct and indirect evidence that it *is* possible for entrant's to create

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³ See, for example, the evidence presented in Cohen, et. al. (2002)

duplicate delivery networks, it is difficult to defend a policy of mandated access on the basis of an essential facilities argument.

Nonetheless, it seems likely that regulators will accede to the requests of end-toend competitors that forced access be granted. The important question, as always, will be
determining the *terms* of such access. Once such terms have been established, the
competition authority – even one that had no interest in compelling access itself on
essential facilities grounds – should find itself interested in the pricing of access. This is
so because the spread between the access price and the retail price affects the ability of
"equally efficient" competitors to compete with the incumbent in the market for the
upstream component.

To see the issues involved, consider the following example. Supposed a price cap regime is introduced to control the prices of an incumbent that had previously had all its prices directly controlled by the regulator. Suppose also that the price weights are previous period quantities and that the regulator had had the policy of setting downstream access prices (work-sharing discounts) according to the Efficient Component Pricing Rule (ECPR). Then, one would expect that, once given freedom to adjust relative prices, the incumbent would likely choose to *lower* the retail price and *increase* the access

price.⁴ Thus, in order to increase its profits under the price cap regime, the incumbent may choose to adjust its access price (work-sharing discount) in such a way that *excludes* more efficient providers of the upstream function.

Presumably, this outcome would be of concern to the competition authorities. That is, even if application of essential facility considerations does not dictate that there *must be* an upstream market for competition policy reasons, once such a market has been created by regulatory fiat, competition policy criteria would apply. Usually, such potential conflicts can be avoided through adjustments in regulatory policy: e.g., in the present example, one could change the form of the price cap and/or impose the added constraint that work-sharing discounts satisfy ECPR. But, that just reinforces the point that regulatory policies may sometimes conflict with competition policy in this important area.

Arguments for and against mandated unbundled access

In telecommunications, liberalization efforts have included provisions requiring incumbents to sell access to portions of their network on an unbundled basis. What are

⁴ Intuitively, increasing the access price would allow it to earn more profits by extracting additional inframarginal rents from the upstream competitors. The presence of the price cap forces the incumbent to simultaneously lower the end-to-end price.

the efficiency reasons for and against granting access to competitors? The unbundling of service offerings by regulated monopolies, combined with the enforced granting of "nondiscriminatory access" has been a cornerstone of regulatory policy since the break-up of AT&T's telecommunications monopoly in the United States. However, this policy tool involves "costs" as well as benefits. My first objective is to explain both sides of the access issue in the context of an overall postal liberalization framework.

Postal service is one of the last of the traditional public infrastructure industries to be opened up to competition. There are always complicated political explanations for such a major shift in public policy. However, from an economist's point of view, the major attraction of liberalization is exposing a monopoly enterprise to the efficiency enhancing pressures of competition. Unfortunately, it is generally recognized that, as is the case for other traditional public utilities, it is not realistic to expect postal markets to become fully competitive as soon as competitive entry is permitted. Thus, during a somewhat lengthy interim period it may be desirable to implement policies designed to promote competition. One such policy is the requirement that a dominant firm provide unbundled access to portions of its productive facilities. It is important to recognize that these types of policies are best viewed as temporary measures that will be abandoned as soon as full competition has established itself. Such artificially imposed mandates must

be used with caution, since they, themselves, are not part of the unfettered workings of market competition.

Most products and services offered in the competitive marketplace involve several stages of production and/or intermediate products. Sometimes firms choose to offer rivals unbundled access to their facilities at a mutually agreed upon price. More often, they do not. When there is effective competition for the end-to-end service, there is no public interest involved in the details of such interfirm relations. All that can be accomplished by government intervention is the introduction of inefficiency, resulting in higher prices for consumers.

The situation changes somewhat when competition in the end-to-end market is less than perfect. In such cases, there may arise situations in which a policy that mandates that a dominant firm provide unbundled access can achieve important social benefits by expanding the scope of operation of competitive forces. In essence, these benefits are obtained by: (1) reducing the scale of sunk investments required to serve the end-to-end market; and (2) making it possible for the results of process and product innovations to find their way into the marketplace on a piecemeal, component by component basis, rather than requiring that the entrenched practices of the dominant firm be replaced all at once.

However, the fact that there may sometimes be significant benefits to requiring the provision of unbundled access does not eliminate the need to carefully weigh any such benefits against the costs that invariably accompany such interference with the operations of the market. In general, issues such as the determination of which activities the firm undertakes itself and which it purchases from others, are best determined through unfettered market processes. In addition, in regulated markets, pricing policy can introduce additional complications. An authority that mandates unbundled access must anticipate regularly answering the question: "At what price?" Combined with inefficient pricing, mandated unbundled access may actually retard entry rather than facilitate it.

Thus, there are costs as well as benefits to mandating unbundled access to the incumbent service components. While this trade-off may have been balanced in favor of mandating access in the case of telecommunications, the issue must be considered afresh in the case at hand. Relative to telecommunications, the benefits of mandated access in postal markets are likely to be much lower because of low sunk costs.

Unbundling makes possible segmented entry that may be undesirable.

Mandating downstream access makes it possible for entrepreneurs to compete with the dominant firm over only a portion of the vertical chain of production. Similarly, the entrant can provide facilities-based service for only a limited geographical area, while

marketing a "nationwide" service by reselling the incumbent's service elsewhere. This may facilitate entry, because the potential innovator no longer has to risk the investments required of a vertically integrated, nationwide entrant. Thus, even natural monopoly at the bottleneck stage need not preclude at least some of the benefits of competition. Furthermore, unbundled pricing of various components allows the marketplace to determine where competition will be successful. Unbundling can make it possible for the market to "discover" the socially cost efficient structure for the industry.

These are the potential entry-enhancing advantages associated with a policy of mandated unbundled access. Why does its full force not apply in the postal sector? While there is no doubt that granting competitors unbundled access may facilitate entry, in postal markets such entry may not be "socially desirable" in the way that the traditional discussion presumes. That is, it may be precisely cream skimming entry, which undermines socially mandated uniform pricing, that is facilitated by unbundling.

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⁵Baumol and Sidak (1994) make this point quite eloquently in the context of the telecommunications industry: "Since we cannot be certain which arenas of local telephone service, if any, are natural monopolies, it would be senseless for the regulator to try to determine which arenas have this attribute and to permit entry into only those sectors deemed not to be natural monopolies. Rather, the most rational way to distinguish the arenas into which entry is feasible is to let the market decide. This can be done by opening *all* local telecommunications to entry, imposing some rules to guard against the erection or perpetuation of artificial barriers to entry, and then observing where entry prospers and where it does not. The former will then be the naturally competitive fields, the latter the natural monopolies."

A simple example should illustrate this point. Suppose a potential entrant envisions setting up a rival collection and delivery network designed to operate entirely within the a country's major urban (low cost) area. It markets its service as "local mail only," but soon finds that, in order to attract customers; it must offer nationwide delivery. Therefore it seeks "unbundled access" from the Post, claiming the right to use the Post's nationwide sortation, transportation and delivery networks. Is this the type of entry that proponents of unbundling wish to facilitate? Let us examine the likely practical implications, leaving aside for the moment the crucial question of the price at which such access is to be granted.

Typically, collection and delivery costs are significantly lower in the urban area targeted by the entrant, yet the Post must offer a single, nation-wide rate. In such a situation of socially mandated cross-subsidization, provision of unbundled access only facilitates cream skimming. Cream-skimming by a non-innovate entrant *may* be profitable even if the entrant to pay the full stamp price for the Post to deliver all of its "out of town" volumes. However, insisting that the entrant's out of town mail be delivered at a discounted rate (and this is what unbundled access amounts to in this context) can only exacerbate the problem.

Granting unbundled access promotes entry, but the entry so promoted may not be socially desirable. Such entry may undermine the ability of the Post to provide universal service at uniform prices.

Unbundling promotes market contestability by reducing the sunk costs of entry

Let me turn next to the argument that unbundling promotes market contestability. Suppose that important components of postal service prove to be natural monopolies so that substantial competition in their supply would not be socially efficient. In that case, the "market test" appealed to above may be impeded by the exercise of monopoly power. Also, the effectiveness of potential competition may be impeded in such an arena by the need for any entrant to incur substantial sunk investments before it can hope to compete effectively.

It is certainly true that unbundling can only increase the contestability of a market by reducing the size of the investment necessary for entry and the amount of sunk costs. Without the need to provide bottleneck facilities, both the total investment costs of entry and the amount that must be irrevocably committed to a particular market can be significantly reduced. Since it is the extent of sunk costs that limits a natural monopoly market's contestability, unbundling clearly increases the degree of market contestability. This is likely to be an important consideration in network industries in which the

underlying infrastructure involves large sunk investments. And, indeed, ensuring access to such facilities has been an integral part of the introduction of competition into the telecommunications and electric power industries. However, there is little need to make such large sunk investments in the provision of postal and delivery services, since the bulk of postal costs are labor costs. Therefore, mandated unbundling is not necessary to reduce the sunk costs of entry into postal markets. The following subsection explains why this is so.

There are few sunk costs in the operation of a postal network

The above discussion makes it clear that the key element in the economic argument for the offering of unbundled prices for partial services in vertically integrated natural monopolies is due to the desire to mitigate the problems that the existence of sunk costs pose for the operation of competitive market forces. But where are the sunk costs associated with the operation of a postal network? In this subsection I will discuss the composition of a typical "postal value chain" and explain why it is reasonable to conclude that there is little in the way of sunk costs.

The postal value chain consists of the stages of *collection*, *local transportation*, outward sortation, long haul transportation, inward sortation, local transportation, and delivery. Local transportation connects the collection and delivery offices with regional sorting centers, which perform both the outward and inward sortations, though at

different times. It has long been thought that, while there may be significant economies of scale in delivery, the other functions are produced under conditions of approximately constant returns to scale. However, the presence or absence of economies of scale is only part of the story. The arguments summarized above suggest that it is the sunk costs associated with increasing returns to scale service components that make those components a possible bottleneck. The overwhelming majority of the costs of operating a postal network are labor costs, typically over 80%. Thus, potential competitors do not have to make much in the way of sunk investments to enter postal markets.⁶

Thus, postal networks have little in the way of the sunk costs associated with traditional monopoly bottlenecks. Are we to conclude that the incumbent's postal network contains no essential facilities to which competitors should be granted access? To my mind there is one important "asset" of the incumbent which does not show up on the books at all, yet is essential to the operation of the incumbent or the success of any entrant: the nationwide system of addresses itself. This numbering system is an organizational asset built up over more than a century. It would neither reasonable nor efficient to expect postal competitors to develop their own addressing system. Although

⁶ Legacy labor contracts may well be sunk cost for postal incumbents. However, this is not typically the case for entrants, who tend to use non union labor. Remember, it is the sunk costs of the entrant that matter for assessing a market's contestability.

the current system is the cumulative result of substantial the incumbent investments over the years, it is probably impossible to place a separate market value on this asset let alone calculate a fair and efficient access charge for entrants to pay for its use. However, the incumbent undoubtedly incurs expenses involved with maintaining and expanding this system of addresses and the data basis associated with its effective utilization. Because such costs are incurred maintaining the value of what amounts to a public good, they should be included as part of the cost of the Universal Service Obligation borne by the incumbent.

While the nation-wide addressing system is an essential facility, it does not seem practical to directly charge for access to it by entrants. However, the ubiquitous use of that system has given rise to organizational assets of the incumbent, which probably should be regarded as essential facilities. These assets are Post Office box delivery and the Change of Address rerouting system. In many countries, a substantial proportion of addresses are PO boxes maintained by the incumbent (and located in its facilities). Clearly, a delivery competitor must be able to deliver mail to these PO boxes in order to offer a viable service. Access to these PO boxes should be granted.

It may also be argued that the Change of Address information system should be regarded as an essential facility operated by the incumbent, because it is so thoroughly integrated into the nation-wide addressing system. After all, it hardly seems efficient for

every customer moving to a new location to inform each of many firms who may be carrying mail addressed to him. Here, the pricing situation is somewhat different because not every piece of mail (nor even every mail customer) makes use of the incumbent's Change of Address service. Yet, significant costs are imposed on the system by those pieces (and customers) that do utilize this partial service. Therefore, entrants that wish to provide Change of Address service to their customers using the incumbent's information resources should be forced to bear the costs they impose upon the system on an incremental basis. (That is, unlike the nation-wide addressing system itself, it does not seem appropriate to incorporate such costs into the incumbent's overhead.) Presumably, this access would be priced at a mark-up over the incumbent's average incremental cost.

Preventing "Unfair" Competition by SOEs

Competitors continually claim that incumbent posts "compete unfairly." Sometimes these complaints have obvious merit; e.g., the "mail box monopoly" of the United States Postal Service – a textbook example of raising rivals' costs. More commonly, charges of cross subsidization are thinly disguised attempts to influence the regulatory process to set higher rates for the incumbent's products that are close substitutes for those of the complaining rival. This debate will intensify following liberalization. And, it has the potential to lead to conflicts between regulatory and competition policy objectives.

True, the end of the letter monopoly will also end critics' most common complaint of this kind: i.e., that the incumbent uses its protected monopoly to obtain the resources to finance "unfair" competition. Yet charges of cross-subsidization will undoubtedly continue. Therefore, price cap regimes are typically extended to include additional provisos that prevent the incumbent from setting the price of any product below its average incremental cost. It is here that the status of the incumbent as a SOE complicates matters.

A profit maximizing firm that has an opportunity to earn at least some profits will not price competitive products below their average incremental cost *except* as an attempt at predation. It would increase its profits by abandoning that product line altogether. Predatory pricing by a profit maximizing firm seems unlikely in the postal sector because of the relative ease of entry into the market. This makes it very difficult for a predator to successfully recoup the losses resulting from the below cost pricing required to drive the prey out of the market. However, recent work by Sappington and Sidak (2002) has argued that SOEs may have the incentive to engage in predatory behavior on a *continuing* basis.

This argument has serious implications for the coordination of regulatory and antitrust policies: the regulator may trust to conduct (pricing) restraints to limit cross-subsidization, while the antitrust authority may feel obliged to resort to structural

measures to prevent the incumbent from "damaging competition." Sappington and Sidak's analysis provides the rationale for these differing policy conclusions.

Regulatory policies to prevent cross-subsidization have always been somewhat at odds with efficiency objectives. For example, it is well-known that Ramsey optimal (surplus maximizing) prices need not be free of cross-subsidy. Indeed, one of the theoretical disadvantages of liberalization in all network industries has been the loss of pricing flexibility on the part of regulators. In the absence of a legally enforced monopoly franchise, regulatory safeguards against cross-subsidization do have a limited efficiency role: to avoid creating incentives for inefficient entry. However, such provisions are best interpreted as a politically mediated set of "fairness" criteria which line up nicely with competition policy concerns regarding the exclusion of more efficient competitors.

From the regulatory point of view, there would seem to be little need for such *price floors* as a tool to prevent predatory pricing. After all, the regulatory process would generally make it impossible for the incumbent to recoup its investment in below cost

⁷ Chapter 10 of Baumol, Panzar and Willig (1982) provides a detailed discussion of conditions under which Ramsey optimal prices are, and are not, subsidy free.

pricing. However, as Sappington and Sidak's analysis explains, the situation changes dramatically when the incumbent is an SOE whose goal is *not* profit maximization, but the pursuit of some other, more bureaucratic, objective. Sappington and Sidak suggest "revenue maximization" as a way to summarize, or proxy, the goals of SOE managers who pursue careerist considerations in the absence of access to the stock option incentive schemes available in privately owned companies. Profit considerations are reflected through a (typically binding) constraint that the firm achieves at least a "satisfactory" level of profits. 9

Mathematically, this does not require a major change in the formulation of the usual constrained optimization problem used to model the regulated firm. However, it leads to the possibility of profound changes in the nature of the choices of the firm. Now, it is entirely possible for the firm to wish to adopt prices below marginal costs on a long term, continuing basis: i.e., *not* as a predatory device with an eye toward raising rates as soon as the prey has exited the market. For the reasons discussed below, regulatory cross subsidy tests are ill-suited to deal with this situation.

⁸ Things change somewhat under price cap regulation.

⁹ Sappington and Sidak's formal model assumes that the SOE maximizes a weighted sum of revenue and profits.

There are potentially more serious problems, as well. Because, a revenue maximizing SOE wishes to offer below cost prices on a continuing basis, it may find it optimal to alter its strategic investment policies so as to distort the outcome of any incremental cost test to which its rates may be subject. There are many forms such distortion might take. As very simple example, consider the following: an incumbent wishes to promote its Express Mail service. However, instead of advertising that service explicitly, it decides upon an extensive "corporate image" type advertising campaign. While not as cost effective as a targeted campaign, such an advertising strategy has one obvious advantage: its costs are truly "joint and common costs." If it had done an Express Mail ad campaign, its costs would be "product specific fixed costs," directly attributable to that product. As such, they would increase the average incremental cost floor pertaining to Express Mail rates.

Competition authorities could be forgiven for looking for structural remedies in situations in which the incentives for anticompetitive behavior are ongoing and the regulatory safeguards in place to control it are subject to strategic manipulation. A typical proposed structural remedy is to prevent the incumbent from offering services outside its dominant market. Structural separation remedies are frequently proposed in

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¹⁰ See Chapter 4 of Baumol, Panzar and Willig (1982) for a discussion of product specific fixed costs.

network industries such as telecommunications and electric power. In those cases, as in the postal case, the tradeoff is the potential loss of the economies of scope enjoyed by the operator offering a wide range of products. The incumbent (and most regulators) see such economies of scope as an important factor in keeping basic service rates low, while competitors see them as the key source of the incumbent's (unfair) network advantage. I shall briefly summarize each of these arguments.

The appropriate benchmark from which to begin the analysis is an (hypothetical) efficient industry configuration. This is a complicated topic in a multi-product industry. It has been studied in considerable detail in Baumol, Panzar, and Willig (1982). In the context of the case at hand, the relevant question is that of efficient increments to the monopoly franchise operations of the incumbent. After the incumbent's product specific economies of scale are exhausted, efficiency may be consistent with (or even require) provision of competitive offerings by competitors as well as by the incumbent.

There are several ways to conceptualize this issue. Let me begin by discussing the following hypothetical situation. Suppose that, initially, the incumbent postal provider (the incumbent) provides a set of mail services with volumes represented by the vector **V** that are sold at the price vector **p**, with the resulting revenues being just sufficient to cover the incumbent's costs of operations. Now suppose that a market emerges for a new service, "X-mail." After observing the development of this market

and the level of the price being charged, the management of the incumbent concludes that it is desirable to enter this market. From the public interest point of view, what criteria should be used to evaluate the desirability of the incumbent's diversification?

The answer is straightforward if it can be assumed that the incumbent maximizes its profit and that the X-mail market is competitive. Then, the incumbent would make its diversification decision based upon whether the added revenues it could earn from selling a volume *E* of X-mail exceeded the added, or *incremental* cost, of producing that volume. As is discussed more fully below, this *incremental cost test* is precisely the standard that a social planner would use in evaluating the general desirability of the incumbent's diversification into competitive markets. The reason is quite intuitive. Ultimately, the key condition for social efficiency is whether or not the volume of service sold in the marketplace is produce at the lowest possible cost. When this volume is produced by two or more firms, productive efficiency requires that the marginal costs of all active firms be equal. Competition ensures that this condition is satisfied for the incumbent's rivals. And, the greatest profits for the incumbent in a competitive market would be obtained by operating at the quantity at which its marginal cost of X-mail also

¹¹ In mathematical terms, this condition is $p_E E \ge IC_E = C(\mathbf{V}, E) - C(\mathbf{V}, 0)$. More intuitively, the incremental costs of a service (or group of services) are the additional costs that result from adding the service(s) in question to the existing offerings of the firm.

equaled the market price. Then, as long as the market price covers the average incremental costs of diversification, the participation of the incumbent in the market lowers the total costs of providing X-mail service.

Thus, the entry of a profit seeking the incumbent into a competitive related market improves productive efficiency. More than likely, the market price will fall as a result of the additional supply of the incumbent, further benefiting the consumers of X-mail. However, the other firms providing X-mail will *not* benefit from the incumbent's entry. Even if the X-mail market were initially perfectly competitive, the largest firms would likely earn significant *economic rents*: i.e., profits. Not surprisingly, such competitors are vehemently opposed to such market participation by the incumbent and other incumbent postal providers.

The situation becomes even clearer if the X-mail market is not perfectly competitive. Then, the strategic actions of a profit-seeking the incumbent and/or its rivals will undoubtedly result in a lower post entry equilibrium price for X-mail. First, consider the case in which the incumbent enters to "dominate" an existing competitive

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¹² The only situation in which the incumbent's entry would *not* result in a lower market price would be the case in which the market price is completely determined by a perfectly elastic competitive supply curve. That is, when there are a large number of actual and potential suppliers willing and able to supply an unlimited quantity at the going price. This is unlikely to be the case in any real world market, but is a useful simplifying assumption in the example below.

domestic X-mail market. In order to obtain market share (and earn profits), the incumbent must lower the pre-existing market price. To do this, of course, it must be more efficient than the marginal competitive producers. Equally obvious is the fact that such entry would directly benefit consumers and harm competitors. Things are more complicated if the X-mail market is an oligopoly, simply because there is a large range of oligopoly models that might conceivably be used to analyze the situation. However, in the vast majority of cases, the end results of strategic entry by a profit-seeking firm are lower market prices and lower competitor profits.¹³

Next, consider the situation in which the incumbent is not a profit-maximizer, but rather pursues some social objective subject to a break-even constraint. It does not particularly matter whether this social objective is Ramsey-Boiteux style total surplus maximization or a more politically salient goal, such as minimizing the uniform stamp price.¹⁴ These cases are easily analyzed because the presence of the break-even

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¹³ The most relevant *possible* exceptions that come to mind are cases in which the competitive market in question utilizes the network of the incumbent. For example, consider the entry of an incumbent post into retail banking. Obviously, it could easily dominate that market (and raise prices) by simply refusing to deliver the mail of its competitors. Of course, this negative outcome is not a result of diversification itself, but rather, of an anticompetitive violation of the post's common carrier obligation.

¹⁴ However, the goal cannot be mere "empire building" in the sense of Sappington and Sidak (2002). That is, the objective must serve the interests of consumers and/or shareholders, not solely the interests of postal managers.

constraint forces the incumbent to behave to some extent like a profit-maximizer, even if that is not its true objective. Speaking loosely, in this situation, the incumbent earns profits in order to "spend" them in the pursuit of the social objective. This being the case, the incumbent can effectively pursue its social objective *if* and *only if* it actively pursues profitable diversification opportunities. As above, the results are lower prices for consumers and lower profits for competitors in the competitive markets. Now, however, the profits earned by the incumbent in the competitive markets do not go to its bottom line, but rather toward the ability to charge lower prices in its monopoly markets, in furtherance of its social objective.

The message should be clear: diversification by a profit-seeking or socially motivated, profit-constrained incumbent results in lower prices for consumers and lower profits for its competitors. Thus it is hardly surprising that competitors routinely and vociferously oppose such diversification by the incumbent and similarly situated monopolies.

As Sappington and Sidak (2002) point out, the situation changes when the SOE is assumed to maximize revenues rather than profits or consumers' surplus. The gist of their argument can be summarized as follows:

(a) the public firm (e.g., the incumbent) is interested in maximizing revenue subject to a break-even constraint;

- (b) pursuit of this objective may induce the public firm to enter competitive markets despite the unprofitability of such enty.
- (c) incremental cost tests may be ineffective in preventing such entry; because
- (d) the public firm may, ex ante, choose to employ production technologies with high common costs relative to product specific fixed costs in order to be able to pass any incremental cost test, ex post.

To illustrate this argument, suppose that the incumbent's network costs \$780 million and provides service for 100 million units of ordinary letter mail. It also has the capacity to provide up to 60 million units of X mail at a marginal (variable) cost of \$3 per unit. However, suppose that, at the time it was configuring its network, the incumbent had another option: it could have developed a network capable of serving 100 million units of ordinary mail at a cost of only \$600 million, but that network could *not* be utilized to provide X-mail service. The only way the incumbent could participate in that market would be by setting up a separate operation which would allow it to provide service at a unit cost of \$6.15

If the management of the incumbent were interested in selling ordinary mail at the lowest price consistent with covering its costs, it would choose to operate the less costly network, which would allow it to provide ordinary letter mail service at a price equal to its unit cost of \$6. However, if the management of the incumbent seeks instead to maximize its total revenues subject to a break-even constraint, it would choose the more

¹⁵ Here, I am assuming that, because of its higher wage scale, the incumbent cannot equal the \$5 unit cost of the small scale operators in the absence of economies of scope.

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expensive network. This would not only allow it to earn more revenues from ordinary letter mail (i.e., an amount equal to its costs of \$780 million), but would also make it possible to expand its operations (and revenues) by adding X-mail service.

One might object that, if (constrained) revenue maximization were the objective of the incumbent management, what would prevent the incumbent from adopting the more efficient network. When the X-mail market came into existence, it could take over *all* of that market by setting a price of (slightly below) \$4. It could offset its X-mail losses of \$200 million by raising the price of ordinary mail by \$2 (to \$8). In that case, the incumbent's total revenues and total costs would both be \$1,200 million so that it would just break-even, as required. This strategy would allow the company to earn more revenues than the expansion strategy discussed above, in which the incumbent and UPX shared the X-mail market. Recall that, in that case, the incumbent provided 60 million units of X-mail service at a price of \$5 and 100 million units of ordinary mail service at a price of \$6.6. This would yield it total revenues of only \$960 million. If maximizing revenues *were* the objective of the incumbent management, why would it choose the "expensive network" strategy?

Here is where the Sappington and Sidak analysis becomes quite subtle. Their answer is that the incumbent management would choose the expensive network strategy because it *anticipated* that it would be subject to an incremental cost test should it ever

wish to the X-mail market, or similar related market. The economies of scope built into the expensive network would enable the incumbent to pass the incremental cost test imposed at the time of its X-mail entry, thereby enabling it to pursue its revenue maximization strategy without interference. Therefore, Sappington and Sidak would argue, public firms such as the incumbent should not be allowed to participate in unregulated markets *even if* their participation can satisfied an incremental cost test at the time of the proposed entry.

Universal Service: a "burdensome" obligation or an "unfair" competitive advantage?

There is, as yet, no settled methodology for measuring the costs of an incumbent post's USO.¹⁶ Indeed, there are some who argue that the ubiquity of the incumbent's network is a competitive advantage rather than a burdensome obligation. Liberalization will undoubtedly shed light on this question. However, regulatory policies designed to compensate the incumbent for its USO may well generate competition policy concerns. A simple example will serve to illustrate this point.

Consider an incumbent serving a high cost delivery area to which it delivers letter mail (in which it is market-dominant) and X Mail, a competitive product. Assume that

¹⁶ But see Panzar (2000) and Cremer et. al. (1999) for methodological suggestions.

the fixed costs of its delivery network are 1000; the marginal costs of a letter are 1 and the marginal cost of a unit of X mail is 3, given that its letter delivery network is in place. However, due to economies of scope, without its letter mail network, the incumbent's unit cost of X mail would be 6. Assume also that there are 100 units of letter mail and 100 units of X mail addressed to the area each period and that the uniform stamp price is 7. Finally, suppose that the competitive X mail sector would be willing to supply that service at a price of is 4.

Clearly, some compensation would be required to induce the incumbent to continue its operations in the area. I will not go into detail here, regarding how much compensation should be paid. However, it should be equally clear that any payment that enabled the incumbent to profitably serve the area would bring howls of protest from its X mail competitors. How would the antitrust authorities respond to the challenge that "but for" the USO subsidy, the incumbent could not successfully compete in the market for X mail addressed to this area? (Never mind for the moment that it is socially efficient

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¹⁷For example, suppose that the X mail market price of 4 is the unit cost of the local newspaper delivery outlet, while the "outside" supply price is 5. Without the incumbent, the newspaper delivery firm would earn competitive (Ricardian) rents of 100.

for the incumbent to provide X mail delivery to the area, *given* that it provides letter mail delivery.)

Nor can the issue necessarily be resolved by introducing competition "for the market" into the USO funding process. Suppose that the 1000 in fixed costs associated with the local delivery network represent the incumbent's true *incremental* fixed costs for serving the area *given* that it also serves several neighboring (profitable) areas. Suppose that if, instead, one calculated the incumbent's *stand alone* fixed costs for serving the area the figure would be 1500. Finally, assume that the local newspaper delivery firm could replicate the incumbent's network with stand alone fixed costs of 1200. In that case, one would not expect the newspaper firm to "out bid" the incumbent in any competition for the USO market. The incumbent would win, not because of its absolute efficiency, but because of its economies of scope.

Thus it is not surprising that competitors view economies of scope as a threat to competition, rather than a source of efficiency.¹⁸ However, it would appear that the only resolution to this problem would be to prohibit the incumbent from serving any non dominant markets, regardless of the scope economies that would be forgone.

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¹⁸ For example, see U. S. Federal Trade Commission, Postal Service Study, Project No. PO71200, Declaration of J. Gregory Sidak. (2007)

Problems posed by "two-sided market" issues in the postal sector

Both senders and receivers derive value from postal service. Potentially, this makes it a "two-sided market." The two-sided nature of postal markets is not a major issue when services are provided by a vertically integrated monopolist. Rowland Hill's "sender pays" innovation was primarily an attempt to reduce the transaction costs of using the post and, thereby, more effectively exploit economies of scale. However, liberalization and unbundling give rise to many novel pricing opportunities which may cause the unraveling of the Rowland Hill model. This promises to create serious conceptual difficulties for both regulators and competition authorities. ¹⁹ I expect that many such two-sided market issues will arise going forward. Here, I focus on the issues raised by the market for Post Office Boxes. ²⁰

Problems posed by PO Boxes and PO Box addressed mail

As noted earlier, the role of essential facilities has been a controversial feature of the process of liberalizing postal markets. Some have argued that the absence of substantial sunk costs means that there is no need for policies designed to deal with

¹⁹ There is already a voluminous literature on appropriate antitrust policies toward in the payment sector. See Wright for a discussion of the problems posed by two-sided markets more generally.

²⁰ See Panzar (2006) for a first attempt at a formal analysis.

"monopoly bottlenecks," such as those used in other network sectors such as telecommunications or electricity. Others have argued that requiring incumbents to grant downstream assess is essential for the development of significant competition, at least in the short to medium run. I will not try to resolve this question here. However, all parties to the debate seem to agree that entrants must be granted access to the incumbent's PO Box subscribers. In some jurisdictions, such access is a matter for "commercial negotiations" between the incumbent and potential entrants. In others, the rate is set by the postal regulator directly or indirectly (should negotiations break down). However, there remains considerable debate over the appropriate pricing methodology.

Incumbent posts tend to argue that the Efficient Component Pricing Rule (ECPR) is the appropriate methodology to use for access pricing. Regulatory commissions tend to argue that the appropriate standard should be cost-based: i.e., "bill and keep" when the costs of receiving mail at a PO Box location are zero. The incumbent post's position is based on the claim that PO Boxes are an integral part of its postal network and that ECPR based pricing of network access is not anticompetitive. The regulatory position is based upon the argument that the likely outcome in workably competitive postal and PO Box markets would be a cost-based access charge. There is also concern lest the incumbent

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²¹ See, for example, de Bilj et. al. (2006), Crew and Kleindorfer (2002), and Panzar (2002).

post succeed in "making use of its dominant position" in the PO Box market to thwart competition in markets for postal services.

It turns out that this debate ignores an important aspect of the market for PO Box services and postal markets generally: they are 2-sided markets. As the emerging literature on this topic has indicated, simple cost-based rules rarely suffice to characterize either desirable or equilibrium characteristics of the marketplace.²² Therefore, before it is possible to truly understand access pricing for PO Boxes, it is necessary to understand the benchmark pricing outcomes under competition, monopoly and welfare maximization.

Market definitions issues:

As usual, the market definition exercise involves determination of both relevant product or services markets and relevant geographic markets. For present purposes, I will focus on two retail markets for postal services, one wholesale (or service component market) for postal service, and PO Box services. The geographical market definition for all markets considered is *local/regional*, because it is my understanding that this is the initial business model of many postal competitors. The retail markets are those for locally originating mail addressed to street addresses (*street addressed mail*) and locally

²² See Rosson (2004) for an early review of this literature.

originating mail addressed to PO Boxs (*PB addressed mail*). Separating these two markets greatly clarifies the analysis. The wholesale markets discussed are the complementary components *access to PO Boxs* and that portion of the value chain that is "upstream" of the PO Box in the retail PB addressed mail market. That is, it involves all the steps of local mail processing *except* the actual placement of the piece in the secure PO Box or PO Box. The market for PO Box services involves the rental of locked facilities to subscribers (mail recipients) for a fee. I assume that the incumbent has a dominant position in all of these markets.

"Making use" of dominance

This breakdown helps clarify the issue at hand, namely would an above cost price for access to the incumbent's PO Boxs adversely affect competition in any of the above mail markets. I shall analyze each, in turn.

The retail market for street addressed mail

A local competitor provides end-to-end service in this market, entirely bypassing the incumbent's network. Nothing the incumbent does in the access market will have any direct effect on competition in this market. Nonetheless, there is an important interrelationship between the market for PO Box services and the associated wholesale market involving collection, sortation, and partial delivery. In order for an entrant to

successfully compete in this wholesale market, it must be granted access to the incumbent's PO Box addresses. Similarly, the connection between this wholesale market and the retail market for street addressed mail in the same region is also very close. It is difficult (but not impossible) to envision an entrant competing successfully in the market for street addressed mail without being granted access to the incumbent's PO Box addresses. However, as long as access is granted at some price, entrants have shown that they can limit the impact on their ability to compete in the street addressed mail market by passing through some portion of the PB access charge by charging a high price for PB addressed mail.

One might argue that, by forcing entrants to charge different prices for street addressed and PB addressed mail, the incumbent is "raising its rivals' transaction costs." There may be something to this, but I treat this as a "second order" for present purposes.

The retail market for PB addressed mail

As long as the incumbent has an overwhelming dominance in the market for PO Box *service*, its dominance in end-to-end provision of service for PB addressed mail is largely a matter of definition. In any event, competition in this market cannot be significantly impacted by PB access pricing.

The wholesale market for PB addressed mail

This situation is where the ECPR methodology is traditionally applied. As long as ECPR principles are followed, no equally efficient competitor will be excluded from this market by a PB access price above cost. Therefore, it seems that the ability of the incumbent to charge ECPR access prices for PO Box addressed mail has the effect of limiting the inefficient bypass of its local delivery network to street addressed mail. This does not exclude an equally efficient competitor from the delivery market for PO Box addressed mail. Rather, it prevents the expansion of an arguably less efficient competitor into that market as well.

Analysis of alternative counterfactual benchmarks

The above discussion indicates that if one believes that the incumbent's PO Box services are an integral part of its postal network, ECPR pricing of access is not exclusionary. However, this does not necessarily resolve the issue of whether such market dominant pricing in the PO Box access market can be used to adversely affect competition in markets for postal services. There are two counter factual situations whose analysis may shed light on this issue: (1) that of a hypothetical PO Box monopolist

(PO Box Inc.) facing a competitive market for postal services; and (2) that of fully competitive postal services *and* PO Box markets.²³

It is my understanding that, in most jurisdictions, the incumbent's initial dominant position in the PO Box market is *not* a violation of the law. Therefore, an alternative counterfactual benchmark to use in evaluating its access pricing policy is that of a hypothetical PO Box *monopolist* facing a workably competitive postal delivery market. I shall refer to this hypothetical firm as PO Box Inc. This monopolist would have two sources of revenue: the rental fees it charged its subscribers and the revenues from any access charges it collected from postal operators. Then, the relevant theoretical issue is whether or not PO Box Inc. would choose to charge an access fee above cost to postal operators.

Assume that PO Box Inc. faces a perfectly competitive postal delivery market (in which it may or may not participate). Assume also that a large enough percentage of mail was addressed to PO Boxs that no postal operator could remain viable if it refused to deliver to them. In that case, any access price it might charge postal operators would be passed through to mailers through an increase in the equilibrium stamp price(s).

²³ See Panzar (2006) for a formal analysis of these two counterfactuals.

Furthermore, the price for mail addressed to PO Box Inc. would be increased by the amount of the access charge. This means that PO Box Inc. would be in a position to use its access price extract the monopoly profits associated with a vertically integrated end-to-end PO Box operator! It seems clear that PO Box Inc. would have an incentive to set an access fee substantially above its cost of handling incoming mail.

Taking this as the "benchmark" situation, consider what happens as a result of a firm (e.g., the incumbent) *lawfully* acquiring dominance in the PB market. As noted above, PO Boxs are a two-side market. Operators can potentially collect revenues from postal firms delivering mail as well as subscribers. As a result of acquiring dominance in the PO Box market, the incumbent would find it profitable to increase *both* of these prices above cost. As long as it increased the access price in accord with ECPR principles, this would not impede equally efficient competitors in any relevant market.

Thus, the existence of a dominant provider in the PO Box market is unfortunate for postal operators and consumers of both postal and PB services. But this is the result of the exercise of monopoly power, not exclusionary tactics. If the dominant PO Box provider is vertically integrated into the market for postal services (as is the case with the incumbent), ECPR pricing of access to PO Boxs should prevent the exclusion of equally efficient competitors from any relevant market, but it will *not* serve to limit the dominant firm's monopoly profits from either side of the PO Box market.

More surprisingly, these mark ups above cost do not necessarily disappear in fully competitive PO Box markets! Panzar (2006) develops a two sided model of the postal sector in which profit maximizing PO Box firms charge the same access price under monopoly and perfect competition. The effect of competition is to lower the fees paid by PO Box subscribers. Again, this result is familiar from the 2-sided market literature. As in the case of fixed-to-mobile termination charges, a "competitive bottleneck" results: firms charge mailers a monopoly rate and compete away the profits by offering low prices to PO Box customers.²⁴

My analysis has revealed that the market for PO Boxes is exhibits many of the now classic characteristics of 2-sided markets. This means that care must be taken before applying the standards of traditional competition policy when evaluating the pricing of access to this essential facility.²⁵ In particular, an access price well in excess of the marginal cost of access does not constitute *prime facie* evidence of either "abuse of dominance," or an attempt at "leveraging monopoly power." Nor does it necessarily signal a lack of competition in the PO Box market itself.

²⁴ See Armstrong and Wright (2004).

²⁵ For a discussion of the necessary caveats, see Wright (2004)

Conclusions

Postal liberalization has brought many changes to the sector, especially outside the United States. In the European Union and elsewhere, recent decades have seen the "corporatization" of postal operators. Posts have been transformed from Ministerial entities into more or less traditional business enterprises. While privatization has been relatively rare, posts are typically subject to economic regulation by an independent regulator. The "full market opening" of the postal sector (scheduled in the EU for 2009) will mostly likely bring with it additional scrutiny from competition authorities.

The liberalization experiences of other vertically network industries such as telecommunications and electric power have illustrated that regulatory policy and competition policy are likely to be closely linked. Obviously, the issue of competitive access is of concern to both regulatory and competition authorities in any network industry with a so-called "monopoly bottleneck." The issue is especially controversial in the postal sector for the following reasons:

- The relative lack of sunk costs in the delivery network.
- Universal Service (and uniform pricing) Obligations.
- "Two-sided" characteristics of competitive postal markets.
- State ownership of postal operators.

The paper has analyzed the importance of each of the above characteristics (and their interrelationships) on the formulation of regulatory and antitrust policies in the postal sector.

References

Armstrong, M. (2004) "Competition in Two-Sided Markets," mimeo, University College, London.

Armstrong, M. and Vickers, J. (2001): "Competitive Price Discrimination," *Rand Journal of Economics*, 32(4), 579—605.

Armstrong, M. and J. Wright (2004) "Two-Sided Markets, Competitive Bottlenecks and Exclusive Contracts," mimeo, University College, London, and National University of Singapore.

Baumol, W., Panzar, J. and Willig, R. (1982) *Contestable Markets and the Theory of Industry Structure* Harcourt, New York.

Baumol, W. and Sidak, J. (1994) *Toward Competition in Local Telephony* M.I.T. Press, Cambridge.

de Bijl, P., van Damme, E. and Larouche, P. (2006) "Regulating Access to Stimulate Competition in Postal Markets?" In: *Progress Toward Liberalization of the Postal and Delivery Sector*, edited by M. A. Crew and Paul. R. Kleindorfer, New York, Springer.

Cohen, Robert H., William W. Ferguson, John D. Waller and Spyros S. Xenakis. 2002. "Impacts of Using Worksharing to Liberalise a Postal Market." In *Liberalisation of Postal Markets*, edited by Gabrielle Kulenkampff and Hilke Smit. Bad Honnef: WIK.

Cremer, H., Grimaud, A., and Laffont, J.-J., (1999) "The Cost of Universal Service in the Postal Sector." In: *Current Directions in Postal Reform*, edited by M. A. Crew and P.R. Kleindorfer, Boston, Kluwer.

Crew, M. and Kleindorfer, P. (2002) "Balancing Access and the Universal Service Obligation." In: *Postal and Delivery Services: Delivering on Competition*, edited by M. A. Crew and Paul. R. Kleindorfer, Boston, Kluwer.

Panzar, J. C. (2000) "A Methodology for Determining the Costs of Universal Service Obligations," *Information Economics and Policy*?? ?????

Panzar, J. C. (2002) "Reconciling Competition, Downstream Access, and Universal Service in Postal Markets." In: *Postal and Delivery Services: Delivering on Competition*, edited by M. A. Crew and Paul. R. Kleindorfer, Boston, Kluwer.

DRAFT – Preliminary and Incomplete

Prepared for IDEI – La Poste 2008 Conference

Panzar, J. C. (2006) "PO Box Access: Competition Issues in a Two-Sided Postal Market," Prepared for 4th IDEI/La Poste Conference on Regulation, Competition and Universal Service in the Postal Sector, March 16th and 17th, 2006.

Rochet, J., and J. Tirole (2004) "Two-Sided Markets: An Overview," mimeo, IDEI University of Toulouse.

Roson, R. (2005) "Two-Sided Markets: A Tentative Survey," *Review of Network Economics* Vol.4, Issue 2 – June 2005.

Sappington, D., and Sidak, J. "Incentives for Anticompetitive Behavior by Public Enterprises," *Review of Industrial Organization* **22:** 183–206, 2003.

Sappington, D., and Sidak, J. "Competition Law for State-Owned Enterprises," 71 *Antitrust Law Journal* No. 2 (2003).

U. S. Federal Trade Commission, Postal Service Study, Project No. PO71200, Declaration of J. Gregory Sidak. (2007)

Wright, J. (2004) "One-sided Logic in Two-sided Markets," *Review of Network Economics* Vol.3, Issue 1 – March 2004.

DRAFT – Preliminary and Incomplete

Prepared for IDEI – La Poste 2008 Conference