JCP-T-1

BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, D.C. 20268-0001

Experimental Rate and Service Changes   Docket No. MC2002-2
to Implement Negotiated Service Agreement
with Capital One Services, Inc.

Testimony of John C. Panzar

January 16, 2003

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1   **Autobiographical Sketch**

2   My name is John C. Panzar and I am Louis W. Menk Professor of Economics

3   at Northwestern University, where I hold appointments in the Economics Department

4   and in the Transportation Center. I received my B.A. from Carleton College in 1969

5   and my A.M. and Ph.D. degrees from Stanford University in 1973 and 1975,

6   respectively. At Northwestern I have taught graduate and undergraduate courses in

7   microeconomics and regulatory economics, while serving as Department Chair

8   (1988-92) and Director of Graduate Studies (1984-88; 1993-). I have also taught at

9   the University of Pennsylvania, the University of California at Berkeley, and the

10   University of Auckland. For nine years I held an appointment as a Member of the

11   Technical Staff at Bell Telephone Laboratories, where I also served as Department

12   Head. I have published two books and many articles on subjects related to pricing

13   and other issues concerning regulated enterprises. A statement of my qualifications

14   and copy of my curriculum vitae are attached as Appendix 1 and 2, respectively.

15   **Purpose and Scope of Testimony**

16   I have been retained by the Postal Rate Commission to assist in developing a

17   record on economic issues in this proceeding. *See* Presiding Officer's Notice of

18   Anticipated Sponsorship of Testimony on Economic Issues, December 20, 2002. I

19   have contracted to perform an independent analysis of the economic issues raised

20   by the Negotiated Service Agreement ("NSA") jointly proposed by the United States

21   Postal Service and Capital One Services, Inc. ("Capital One"). In particular, I have

22   been asked to:

1   (1) analyze the economic implications and potential consequences, in

2   general, of introducing negotiated rate and service terms available to a

3   sole user into a pre-existing regulatory regime of uniform tariff rates and

4   conditions of service;

5   (2) identify the conditions under which it is economically desirable to

6   introduce declining-block rates or other rate structures that discriminate

7   among users of the affected services, with or without any basis in

8   identifiable cost differences;

9   (3) address the specific economic implications and potential consequences of

10   introducing negotiated rate and service terms available to a sole user

11   where the affected service is provided under a monopoly established by

12   Federal statute, taking into account that such negotiated arrangements

13   may include preferential pricing terms; that access to the negotiated terms

14   may be limited to a small number of users for administrative or other

15   reasons; and that competition may exist among users of the affected

16   service or services; and

17   4) identify and describe regulatory measures that might be taken to

18   accommodate potential concerns regarding the impact of such negotiated

19   rate and service arrangements on fairness in regulation and competition.

1   **The Economics of Optional Tariffs**

2   The issues in this proceeding that I have been asked to address involve

3   *optional* or *self-selecting* tariffs.[1] These are tariffs that allow customers to choose

4   between an established tariff and an alternative outlay schedule. The quantity

5   discounts described in the Capital One NSA clearly fall under this category. Before

6   agreeing to the terms of the NSA, Capital One had the *option* of continuing to make

7   purchases under established tariffs.

8   Optional tariffs have had great theoretical and practical appeal. This is not

9   surprising, because the economic logic behind them is quite intuitive. Consider the

10   relationship between a vendor and any of its large customers. The customer makes

11   its purchase decision on the basis of the vendor's established tariff. But before the

12   customer reveals its decision, the vendor makes the following offer: "You may select

13   a quantity and pay the corresponding outlay specified by my established tariff

14   schedule. However, you may, instead, choose a quantity and pay the outlay from an

15   alternative, specially designed tariff." If the customer chooses to utilize the

16   alternative tariff, it does so because it expects to be better off. That is, it expects

17   that the surplus it obtains from the quantity, outlay combination chosen from the

18   alternative tariff is higher (or at least as high) as the surplus resulting from the

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[1] Self selection was introduced into the nonlinear pricing literature by Faulhaber and Panzar: "Optimal Two Part Tariffs with Self Selection," Bell Laboratories Economics Discussion Paper (1977). The seminal paper of R. D. Willig, "Pareto Superior Nonlinear Outlay Schedules," *Bell Journal of Economics 11 1* (Spring 1978), pp. 56-69, showed how such optional tariffs can be used to achieve allocations that improve the welfare of the firm and all of its customers.

1 quantity, outlay combination that it *would have chosen* from the established tariff.

2 What about the vendor? Presumably, it would not introduce the alternative tariff

3 option unless it expected that any choice the consumer might make would be more

4 profitable for it than what the consumer would have chosen under the established

5 tariff. Finally, how are the vendor's other customers impacted by the introduction of

6 the optional tariff? With respect to their purchases, they can be no worse off *as long*

7 *as the established tariff option remains available.* This result follows from the fact

8 that consumers retain the option to select the same quantity, outlay option (and

9 obtain the same level of surplus) that they would have selected had the alternative

10 tariff never been introduced.

11   The possibility of making the vendor and at least one consumer better off,

12 without making any other consumer worse off, makes optional tariffs appealing to

13 both economists and regulators.[2] However, there are some crucial, largely implicit

14 assumptions lying behind the above analysis. I will discuss each in some detail,

15 since all are relevant for this proceeding.

16 *Resale and Abitrage*

17   The success and desirable attributes of optional tariff plans are predicated on

18 the absence of resale between customers. If it were practical for the favored

19 customer to transfer the quantities purchased under the optional tariff plan to other

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[2] In economic terms, the introduction of optional tariffs makes possible a *Pareto improvement* in the allocation of resources.

1   customers facing the established tariff, the vendor would find its profits eroded. In

2   the limiting case of costless resale, arbitrage by customers would ensure that sole

3   effect of the optional tariff offering would be to convert high-priced sales into low-

4   priced sales.

5   *The Impact of a Revenue Requirement or Break-even Condition*

6   The above argument that optional tariffs can be used to generate Pareto

7   improvements seemed to depend on the pre–existence of an established tariff that

8   the consumer could resort to as an alternative to the optional tariff offering. Yet, for

9   firms subject to a break-even constraint, the cost and revenue effects of the

10   "established tariff" and the "optional tariff" must be assessed jointly and

11   simultaneously. This is not a problem as long as it can be presumed that the vendor

12   is a profit maximizer. In that case, it can be counted upon to expect to make

13   additional profit whenever any customer accepts its optional tariff offering. Then, the

14   expected additional profits can be "spent" by lowering the vendor's overall rate

15   structure, including the established tariff. Thus the notion that the established tariff in

16   some sense "precedes" the optional tariff is ultimately only for expositional purposes.

17   Indeed, in this case, imposition of the break-even constraint strengthens the appeal

18   of optional tariffs. The lowering of the overall rate structure provides a mechanism

19   that benefits users who are not a party to the optional tariff offering.

20   However, this feedback effect works in the opposite way if the customer

21   accepts an optional tariff that causes a reduction in the vendor's profits. Then,

22   imposition of the break-even constraint necessitates an increase in the vendor's

1   overall rate structure, which makes worse off customers not a party to the optional

2   tariff offering. Thus, the automatic presumption of the desirability of optional tariffs

3   relies heavily on the assumption that the vendor is a profit seeker.

4   *Discrimination*

5   The basic argument demonstrating the desirability of optional tariff schedules

6   applies to NSAs that are not available to all customers, and are therefore overtly

7   discriminatory. Thus, discriminatory optional tariffs may be useful tools for

8   promoting the public interest. They may even make possible Pareto improvements

9   that leave all parties better off. The appeal of discriminatory tariffs is reflected in

10   OCA Witness Callow's proposal to formalize discriminatory optional tariff offerings

11   through the use of a niche tariff classification. That is, any user can receive an X

12   percent discount by expanding its volume by Y percent.

13   I am not a lawyer; however, the use of optional tariffs and/or NSAs whose

14   provisions are not available to all potential users may well be viewed as "unduly

15   discriminatory". Fortunately, it is not necessary to resort to discrimination (in the

16   economists' sense) to achieve the benefits of optional tariff offerings. As I discuss in

17   detail below, the use of *nonlinear outlay schedules* (i.e., quantity discounts) can

18   make possible Pareto improvements without discriminating between users.

19   *Independence of User Demands*

20   The final implicit assumption behind the basic analysis of optional tariff

21   offerings is the assumption that the demand schedules of various users are

22   *independent*. The purchase decisions of one user are not impacted by the

1   purchases of any other user. This is a standard assumption in the microeconomic

2   analysis of markets. However, there is reason to question the validity of this

3   assumption when the service at issue is purchased by firms for the purpose of

4   providing goods or services to final consumers: i.e., when the service being sold is

5   itself a factor of production. In that case, the demands of customers that compete in

6   the same final product markets are necessarily interdependent. A discount offered

7   to one competitor puts its rivals at a cost disadvantage relative to that input. This, in

8   turn, leads to an erosion of rivals' sales in the final product market and a decrease in

9   their demands for the input. This is an important consideration in the case of postal

10   services, since the vast majority of mail is sent by businesses that use postal

11   services as input in the production of their final products or services.

12   The analysis of optional tariff offerings for inputs is central to this proceeding.

13   Clearly, Capital One purchases mail services in order to market its services to

14   consumers. Below, I will discuss the topic of quantity discounts for inputs in some

15   detail. Here, it is sufficient to point out that competition between mailers in their final

16   product market makes possible a form of indirect arbitrage. The competitive process

17   allows final consumers' purchases and associated mail volumes to shift from mailers

18   purchasing according to the standard tariff toward mailers availing themselves of the

19   discounts incorporated in the optional tariff offering. Thus, like resale between

20   customers, competition in final product markets can transform high priced sales into

21   low priced sales for the monopolist.

1   **Economic Analysis of Quantity Discounts with Independent User Demands**

2   The use of quantity discounts has long been widely practiced in both

3   monopoly and competitive environments. Analysis of the practice also has a long

4   history in economic theory. Long classified as "2nd Degree Price Discrimination,"[3]

5   the modern term "nonlinear pricing" is more accurate. It refers to the use of a price

6   schedule under which the total outlay is *not* the simple product of a constant price

7   times the quantity purchased.[4] The practice is not inherently discriminatory because

8   the same outlay schedule is available to all consumers.[5] There is a vast theoretical

9   economic literature on the subject.[6] Here, I shall focus on the nonlinear pricing

10   policies that can be used to establish optional tariff offerings of the type at issue in

11   this proceeding.

12   Figure 1 depicts the situation of a monopoly vendor serving two types of

13   users: a large user with a demand schedule given by D_{Large} and some number of

14   small users, each of whom has a demand schedule given by D_{Small}. Assume that,

15   under its established tariff, the monopolist serves these users at a uniform price of p,

16   measured by the distance 0p in the diagram. Assume also that the monopolist's

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[3] The classic reference is A. C. Pigou, *The Economics of Welfare,* London, Macmillan, 1920.

[4] That is, the graph of a consumer's total outlay is *not* a straight line through the origin, but rather some *nonlinear* function.

[5] As discussed in more detail below, while all customers may be free to choose any point on the proffered outlay schedule, they will typically *not* have an equal ability to avail themselves of the quantity discounts incorporated in said schedule.

[6] The most comprehensive reference is Robert Wilson, *Nonlinear Pricing,* Oxford University Press (1993). A more accessible, less technical exposition of most of the issues can be found in S. J. Brown and D. S. Sibley, *The Theory of Public Utility Pricing,* Cambridge University Press, (1986).

1   (constant) marginal cost is c, measured by the distance 0c. At this price, the large

2   user would choose to purchase Q^0 units (distance $0Q^0$). Each small user would

3   choose to purchase q^0 units (distance $0q^0$). In this situation, the large user is making

4   a contribution to institutional costs equal to area pFHc, the amount by which the

5   revenues received from it exceed the incremental costs of providing it with service.

6   Similarly, each small user makes a contribution of area pEGc.

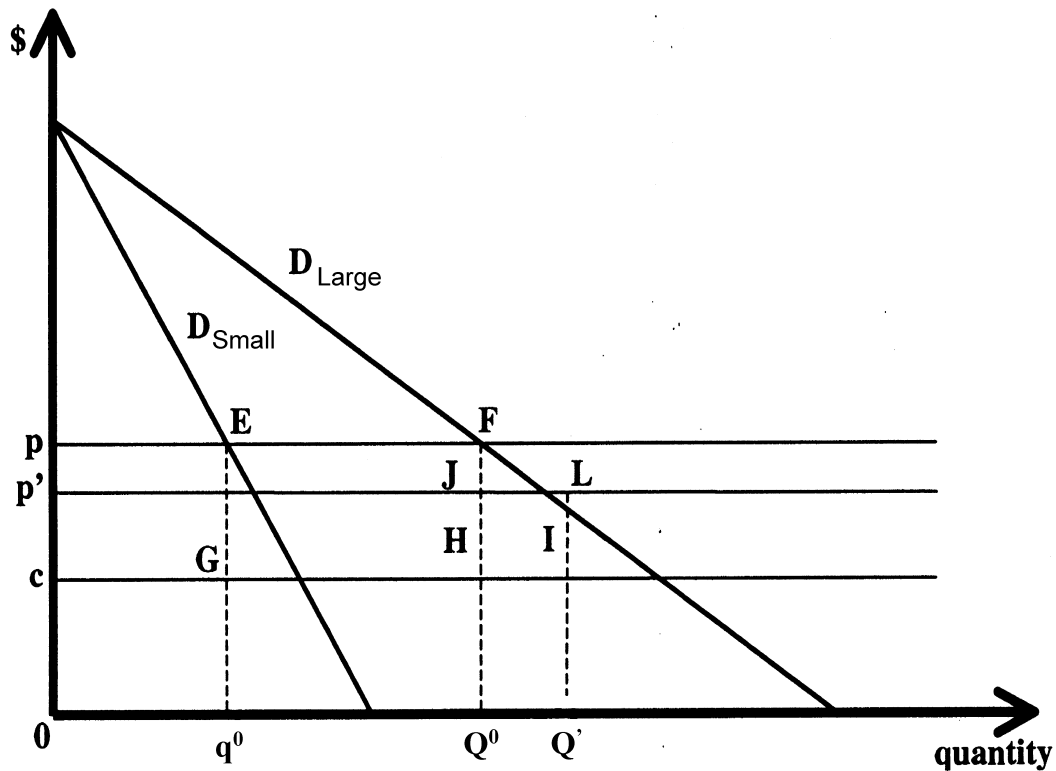
FIGURE 1

7   Now suppose that the monopolist offers its consumers the following optional

8   tariff plan: All consumers may continue to purchase their desired quantity at price p,

9   but any consumer that agrees to purchase *more* than Q^0 units will pay a price of p'

10   on those additional units, with c<p'<p. Small consumers will not be interested in

1   changing their behavior. Their valuation of an additional unit purchased (measured

2   by the vertical height of their demand curve) falls below p' even before reaching

3   output level Q^0. However, the large customer would eagerly accept this offer. For

4   each unit between Q^0 and Q', its valuation exceeds the price paid. It would therefore

5   expand its purchases to Q', the quantity at which its valuation of an additional unit is

6   exactly equal to the incremental price p'.

7   Clearly, the large user is better off as a result of the optional tariff offering.

8   What of the monopolist? It finds that its sales have expanded. Although sold at a

9   discount, the increased quantities are sold at a price above marginal cost, so that

10   the contribution received from the large user has increased, by the amount equal to

11   area HILJ, i.e., the amount $(p'-c)(Q'-Q^0)$. Next, consider the impact on the

12   monopolist's other customers. The small users do not directly benefit from the

13   optional tariff offering, but they are no worse off, since they retain the option to make

14   a purchase at the initial uniform price p. The consumers of the monopolist's other

15   service are no worse off because their rates are not affected.

16   However, both groups can be made strictly *better off* when an overall break-

17   even condition is imposed on the monopolist. The large user's acceptance of the

18   optional tariff offering resulted in an increase in contribution. If the monopolist were

19   just covering its total costs at the initial rate p, it would then be over-recovering its

20   costs. To restore the desired balance would require it to reduce the uniform rate p

21   and/or its other rates. This would result in *all* of its customers benefiting from the

22   optional tariff offering.

1   This example illustrates both the simplicity and appeal of optional tariff

2   offerings. While the analysis is straightforward, there are some points that warrant

3   further discussion.

4   *Discrimination*

5   Despite the fact that it is, in a very real sense, *designed for* the large user, the

6   resulting optional tariff offering is inherently nondiscriminatory. It merely replaces

7   the established tariff with a nonlinear price schedule that is, in principle, equally

8   available to all.[7] A graph of total outlay as a function of volume illustrates this point

9   most clearly. In Figure 2, the initial established tariff is just a straight line through the

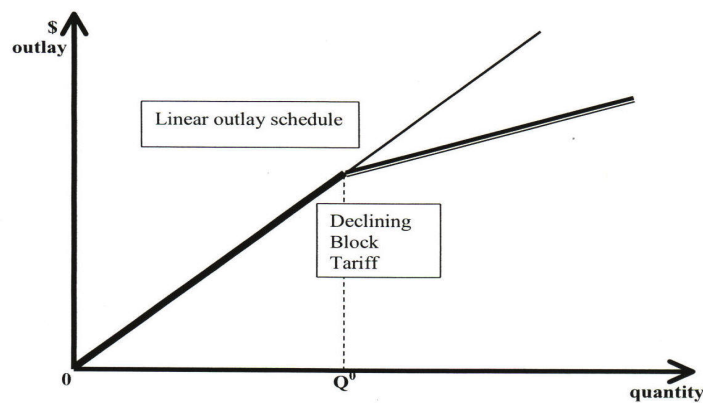10   origin with slope equal to the price p. The outlay schedule in effect after the optional

FIGURE 2

11

12   tariff offering coincides with the original schedule through output level Q^0. There it

13   develops a "kink" and continues along a straight line with the (lower) slope given by

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[7] Some might hold the view that this equality is akin to that ridiculed by the French philosopher: "The rich and the poor are equally free to sleep under the bridges of Paris, but the rich don't have to."

1   the discount price p'. Any customer is free to select any point along this resulting

2   (nonlinear) outlay schedule.

3   *Threshold for Quantity Discount*

4   The example illustrates the key role typically played by the large user's initial

5   Volume, Q^0, in the design of an optional tariff offering. It is no accident that this

6   quantity determines the beginning of the quantity discounts (and the "kink" in the

7   outlay schedule). In the theoretical analysis, this guarantees that, *whatever the*

8   *shape of the large user's demand curve,* the large user will find it desirable to

9   expand its purchases and the monopolist's profits will increase as a result. This may

10   not be the case if the threshold is set at other than Q^0. Consider the situation in

11   Figure 3, in which the demand curve of the large user is nearly vertical. Then, the

12   large user would not change its quantity much in response to the lower price. If the

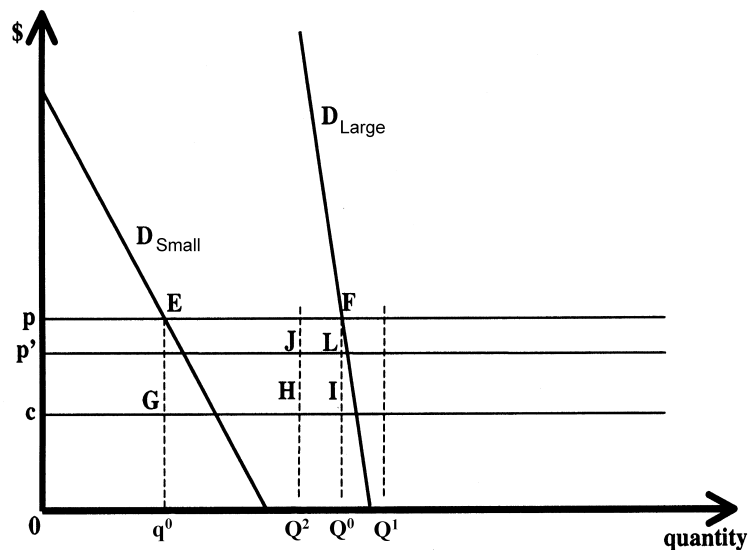13   threshold for quantity discounts lay significantly beyond Q^0, say at Q^1,

FIGURE 3

1   the tariff option would not be taken up. On the other hand, if the threshold were set

2   significantly below Q^0, say at Q^2, the large user would avail itself of the lower price

3   for quantities it had previously purchased at the established rate, thereby decreasing

4   the monopolist's profit contribution from this market. While the quantity discount

5   would induce a slight expansion in volume beyond Q^0, the contribution earned from

6   the increment would not offset the losses resulting from discounting the "original"

7   volumes.

8   In practice, there will typically be a range of quantity discount threshold levels

9   around Q^0 that will result in an optional tariff offering that is both attractive to the

10   large user and profitable for the monopolist. The difficulty is that, for any threshold

11   level other than Q^0, these issues become empirical questions. When the optional

12   tariff offering results from negotiation between the two parties, it is reasonable to

13   assume that the selected quantity threshold is satisfactory to the large user. One

14   would have similar confidence about the impact on profits *if* the monopolist were a

15   profit maximizer. However, if this cannot be assumed, then it would be necessary to

16   forecast the expected effects on the monopolist's profits in order to evaluate the

17   desirability of a negotiated optional tariff arrangement, even absent the issue of

18   demand interdependence (discussed below).

19   Finally, it is important to recognize that the above theoretical analysis

20   presumed stable, unchanging demand curves. When, as in reality, demand

21   schedules change over time, the focal point becomes the quantity that the large user

22   *would have demanded* at the established rate. Thus, in any practical application, the

1   evaluation of any optional tariff offering will always be an empirical question, but

2   perhaps no more so than many other elements of the typical rate proceeding.

3   **Economic Analysis of Quantity Discounts for Inputs**

4   As is the case in most of the economics literature, the above discussion of

5   optional tariff offerings posited a situation in which a good or service was sold to final

6   consumers. However, in the case of postal services, volume discounts are likely to

7   be offered to business users. For these mailers, postal services are used as an

8   *input* in the provision of other products and services to other businesses and final

9   consumers. This complicates the analysis considerably.[8]

10   First, the input demand curves of firms that compete in the final product

11   markets are necessarily interdependent. This interdependence causes the

12   breakdown of the elegant Pareto improvement argument in support of optional tariff

13   offerings. Indeed, one cannot even presume that the introduction of optional tariff

14   offerings will increase total surplus in the market. Thus, assessing the desirability of

15   optional tariff offerings requires the detailed analysis of (forecasted) demands and

16   costs typical of rate proceedings.

17   *Market Induced Demand Interdependence*

18   Figure 1 and the subsequent analyses incorporate the assumption that the

19   demand schedule of each of the small users is not affected by the price and quantity

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[8] The theoretical basis of this section was developed in Ordover and Panzar (1980) and Ordover and Panzar (1982).

1   choices available to the large user. This standard assumption is quite reasonable

2   when the service in question is being sold to final consumers or as an input to firms

3   operating in different final product markets. If the large user is a credit card vendor

4   such as Capital One, there is no reason to expect that, if it makes use of a quantity

5   discount, there will be any effect on the demand curves for mail of other users that

6   are individual consumers or small firms in, say, the floral industry. However, things

7   are very different for Capital One's competitors. Their demand curves for mail

8   services depend very much on the mailing options available to Capital One.

9   This interdependence is a result of the economics of price determination in

10   multi-firm markets. Let us trace the impact of a quantity discount received by *one*

11   firm through the chain of market interactions. A reduction in the price that a firm

12   pays *at the margin*[9] for a *normal input*[10] causes it to increase its supply of output.

13   This, in turn, leads to a reduction in the market price of the final product. This lower

14   price impacts other firms participating in that output market that, because of their

15   small size, do not avail themselves of the quantity discount. They respond to the

16   lower market price by reducing their quantity sold. *Normally*, this output reduction

17   results in a corresponding reduction in the quantity of input demanded.

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[9] In deciding whether or not to supply one more unit of output, the input price relevant to the firm is that of the incremental unit of input required. This is the discounted price for a firm that takes up a quantity discount offer.

[10] The economic definition of the term "normal input" corresponds well to everyday usage. It refers to a productive input whose utilization increases when the firm's output increases, *ceteris paribus*. Intuitively one would expect that input and output quantities "normally" increase and decrease together.

1   The above discussion applies literally to the outcome in a textbook perfectly

2   competitive industry. The story is only slightly more complicated in imperfectly

3   competitive industries. A game theoretic analysis of an oligopolistic industry is

4   based on the firms' *reaction functions.* These specify the relationship between the

5   firms' output or price choice and other market variables, including the prices it pays

6   for inputs. When the price that a particular firm pays for a normal input decreases,

7   that firm's reaction function "shifts out". That is, the firm would choose a larger

8   quantity (lower price), everything else equal. In the new market equilibrium: (1) the

9   market price of output falls; (2) the output of the favored firm increases; and (3) the

10 output, input purchases, and profits of firms not receiving the discount decrease.

11 *There Can Be No Presumed Pareto Improvement*

12   This network of feedback interactions has profound implications for the

13 evaluation of optional tariff offerings. Recall that, when user demands are

14 independent, any optional tariff offering voluntarily agreed to by a user and a profit-

15 seeking monopolist can be *presumed* to be efficient because it can make possible a

16 Pareto improvement. No such presumption is possible when there are downstream

17 competitors of the favored user. The elegant, simple argument of the previous

18 section breaks down because the output expansion of the favored user will be (to

19 some extent) offset by an output contraction of users that do not avail themselves of

1   the discount.[11] A foresighted monopolist would of course take such feedback effects

2   into account when designing an optional tariff offering, ensuring that it would be

3   attractive to the (foresighted) large user and profitable if taken up. However, the

4   negative effect on small users will remain, *even if the establish tariff remains*

5   *available.*

6   In some circumstances it may be possible to design an optional tariff offering

7   that makes feasible a reduction in the established tariff that results in benefits to the

8   monopolist and *all* users.[12] The problem is that there can be no presumption that

9   such is the case when the quantity discounts are offered for inputs.

10   *The Impact of Discriminatory Discount Policies*

11   Thus far, my analysis has focused on the case in which the optional tariff

12   offering takes the form of a quantity discount plan available to all consumers, at least

13   in principle. Of course a NSA, such as the one at issue, might involve a quantity

14   discount provision that is not made available to others. Here, I shall discuss the

15   economic efficiency results under the assumption that such input tariffs can be

16   negotiated individually with *all* firms competing in a given output market; e.g., all

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[11] Note that it does not matter whether the small users *choose* not to avail themselves of the quantity discount (because it is not profitable) or it is simply not offered to them. They are made worse off in either case.

[12] However, Ordover and Panzar (1980) present a set of plausible circumstances in which such Pareto improvements are *impossible*.

1   credit card companies.[13] Although such tariffs might seem to be "unduly

2   discriminatory," the analysis provides a useful efficiency benchmark.

3   Consider a situation in which a profit-seeking monopolist serves a group of

4   heterogeneous firms that compete in the same output market. Initially, there is an

5   established uniform price that has been determined through the ratemaking process.

6   The monopolist is then permitted to offer different NSAs to each of these customers.

7   The outcome of this process would be the efficient transfer of the input to each and

8   every customer. The gains from this increased efficiency would be divided between

9   the monopolist and the firms.[14] If the firms were not in the same market, this

10   negotiation process would make possible a Pareto improvement. However, when

11   the customers are competitors in the same final output market this will not

12   necessarily be the case. The NSAs result in the lowering of the input price facing all

13   firms at the margin, causing them to expand supply. As above, the end result of this

14   feedback effect is that the equilibrium output price falls. This fall in output price may

15   harm *some* of the firms more than the benefits they obtain through their NSA.

16   However, in this example, it seems likely that economic efficiency will

17   improve. That is, the *sum* of the contribution received by the monopolist, profits of

18   the firms, and the consumers' surplus of final consumers (their customers) will

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[13] Different quantity discount offerings for different customers is incorporated in the niche tariff proposal of OCA Witness Callow.

[14] Economic theory does not provide a definitive prediction about the nature of this division, except to say that it will be determined by "relative bargaining power".

1   increase. I am not aware of a formal demonstration of this result in the literature.

2   But, the intuition seems clear: NSAs allow each firm to receive its services without

3   distortion at the margin. This, in turn, makes possible increased productive

4   efficiency downstream, which makes possible both a lower final product price and

5   increased firm profits.

6   **Evaluating NSAs for Inputs**

7   The economic literature on quantity discounts almost always assumes that

8   the product or service in question is being sold to final consumers. In the case of the

9   NSA at issue in this proceeding, and postal services generally, mail services are an

10 input used in the provision of products and services to the final consumer. It has

11 long been known that this complication eliminates the strong efficiency results

12 associated with the introduction of optional tariff offerings. This is unfortunate,

13 because those results provided a justification for a very permissive regulatory policy

14 toward optional tariff offerings, and NSAs more generally: anything voluntarily

15 agreed to by the firm and any of its large customers was most likely to be in the

16 "public interest". Therefore, the details of such agreements need not be subject to

17 the elaborate scrutiny of the ratemaking process. Alas, this situation is more

18 complicated. NSAs and other types of optional tariff offerings may be useful policy

19 tools. That is, in some circumstances they can be used to increase economic

20 efficiency. However, they must be subject to the usual scrutiny of the ratemaking

21 process.

1   On the basis of my analysis, I make the following general observations

2   regarding the evaluation of optional tariff offerings:

3   (1) The impact of the tariff on the profitability of the Postal Service must be

4   evaluated. Since the Postal Service is not a profit-seeking enterprise, it

5   cannot be presumed that any NSA it offers will improve its bottom line.

6   Ensuring the profitability of any optional tariff offering is a legitimate concern

7   of all mailers.

8   (2) Competitors of the firm receiving the NSA should have "economic

9   standing" in evaluating its provisions. They may be adversely affected

10   notwithstanding the profitability of the NSA. The NSA may be in the public

11   interest even if they are damaged, but their concerns are an important part of

12   the evaluation process.

13   (3) A niche tariff approach similar to that proposed by OCA Witness Callow

14   may be a pragmatic approach to deal with the issue of fairness to competitors

15   of any firm that is a party to a NSA. This is likely to have desirable efficiency

16   properties without requiring smaller competitors to incur the costs of initiating

17   and undertaking lengthy negotiations. Unlike OCA Witness Callow, I would

18   not suggest making quantity discount plans available to all mailers. Rather, I

19   would suggest that they be made available only to firms competing with one

20   benefiting from a NSA.

1   **Conclusion**

2   Economists have praised optional tariff offerings as an innovative policy tool

3   whose use can be counted upon to improve efficiency without requiring significant

4   regulatory scrutiny. Unfortunately, the presumed desirability of such tariffs depends

5   quite crucially on assumptions that may not be fulfilled in postal applications: e.g.,

6   profit-seeking behavior on the part of the monopoly vendor and independence of

7   consumer demand functions. As a result, NSAs and other optional tariff offerings

8   must be determined on a case by case basis, using empirical procedures typical of

9   the ratemaking process generally.

Qualifications of the Author

I am Louis W. Menk Professor of Economics at Northwestern University,

Evanston, Illinois, USA, where I have taught since 1983. I earned my Ph.D. in

Economics from Stanford University in 1975. From 1974-1983, I was employed at Bell

Telephone Laboratories ("BTL"). Several aspects of my career have contributed to

developing the expertise on which I have drawn in preparing this Report. Each is briefly

discussed below.

Academic Experience

In addition to teaching at Northwestern University, I have also taught as a visitor

at UC Berkeley (1977), the University of Pennsylvania (1983), and the University of

Auckland (1998, 1999, 2001, 2002). Thus, I have taught graduate and undergraduate

courses in Industrial and Regulatory Economics for 25 years. Many of my former

graduate students have gone on to staff positions at the U. S. Department of Justice,

the Federal Trade Commission, the Federal Communications Commission, and the

Illinois Commerce Commission.

Corporate Experience

From 1974 to 1983, I was a member of the Technical Staff at BTL. I was the

head of the Economic Analysis Research Department at BTL from 1980 to 1983. My

duties at BTL involved conducting original research on the fundamental economic

principles of regulatory pricing and costing analysis as well as consulting on regulatory

and antitrust issues involving the Bell System.

Research

My published research includes two books and numerous articles in major professional journals. Most of my publications are focused on pricing and costing issues facing multi-product network industries such as telecommunications, electric power, railroads, and postal services. The following are of particular relevance to the issues addressed in this proceeding: "On the Nonexistence of Pareto Superior Outlay Schedules," with J. A. Ordover, *Bell Journal of Economics 11 1,* Spring 1980, pp. 311-15. ("Ordover and Panzar (1980)"); "On the Nonlinear Pricing of Inputs," with J. A. Ordover, *International Economic Review, 23 3,* October 1982, pp. 710-261. ("Ordover and Panzar (1982)").

Consulting

I have consulted extensively on regulatory policy issues. In addition to consulting for numerous corporations, over the past decade I have served as an economic consultant to the United States Postal Service, Federal Aviation Administration, the World Bank, the Federal Trade Commission, Deutsche Telecom, Deutsche Post, and Senate of the Commonwealth of Puerto Rico. I have testified before this Commission on several occasions, beginning in 1984. I have also provided written and/or oral testimony before the U.S. Congress, the U.S. Interstate Commerce Commission, the U.S. Federal Communications Commission, the Pennsylvania Public Utilities Commission, and the U.S. Department of Justice.

Other Relevant Professional Activities

I am an Associate Editor of the *Journal of Regulatory Economics* and a member of the Editorial Board of *Information Economics and Policy*. These journals publish specialized contributions on regulatory theory and practice. Recently, I have also become co-editor of the *Review of Network Economics*, a new internet journal that provides timely reviews of both published and unpublished papers of relevance to practitioners working in network industries. Finally, since 1990, I have been an active participant in more than a dozen international conferences on postal economics.

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CURRICULUM VITAE

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Education: B.A. cum laude, with distinction in Economics, Carleton College, 1969
A.M., Economics, Stanford University, 1973
Ph.D., Economics, Stanford University, 1975

Dissertation: "Regulation, Service Quality, and Market Performance:
A Model of Airline Rivalry"

Advisor: James N. Rosse

Employment: Louis W. Menk Professor of Economics, Northwestern University, 1988-
Chairman, Department of Economics, Northwestern University, 1988-92
Director of Graduate Studies, Department of Economics,
     Northwestern University, 1984-88; 1993-98
Acting Director, Northwestern University Transportation Center, 2000–01
Professor of Economics, Northwestern University, 1983-

Head, Economic Analysis Research Department, Bell Laboratories, 1980-83

Visiting Professor of Economics, University of Auckland, 1998, 1999, 2001,
     and 2002
Visiting Professor of Economics, University of Pennsylvania, Spring 1983
Visiting Associate Professor of Economics, UC Berkeley, Autumn, 1977

Member of Technical Staff, Bell Laboratories, 1974-83

Lecturer in Economics, San Francisco State University, Fall 1972

Research Assistant, Stanford University 1970-74

WRITTEN WORK

I. Journal Publications:

"Vindication of a 'Common Mistake' in Welfare Economics," (with R. D. Willig), *Journal of Political Economy 84 6,* December 1976, pp. 361-64.

"A 'Neoclassical' Approach to Peak Load Pricing," *Bell Journal of Economics 7 2,* Autumn 1976, pp. 521-30.

"Free Entry and the Sustainability of Natural Monopoly," (with R. D. Willig), *Bell Journal of Economics 8 1,* Spring 1977, pp. 1-22.

"Economies of Scale in Multi-Output Production," (with R. D. Willig), *Quarterly Journal of Economics 91 3,* August 1977, pp. 481-93.

"On the Comparative Statics of a Competitive Industry with Inframarginal Firms," (with R. D. Willig), *American Economic Review 68 3,* June 1978, pp. 474-78.

"Public Utility Pricing under Risk: The Case of Self-Rationing," (with David S. Sibley), *American Economic Review 68 5,* December 1978, pp. 888-95.

"Theoretical Determinants of the Industrial Demand for Electricity by Time of Day," (with R. D. Willig), *Journal of Econometrics 9 1,* January 1979, pp. 193-207.

"Equilibrium and Welfare in Unregulated Airline Markets," *American Economic Review 69 2,* May 1979, pp. 92-95.

"Economies of Scale in Multi-Output Production: Reply," (with R. D. Willig), *Quarterly Journal of Economics 93 4,* November 1979, pp. 743-44.

"On the Nonexistence of Pareto Superior Outlay Schedules," (with J. A. Ordover), *Bell Journal of Economics 11 1,* Spring 1980, pp. 311-15.

"Regulation, Deregulation, and Economic Efficiency: The Case of the CAB," *American Economic Review 70 2,* May 1980, pp. 311-15.

"The Contestability of Airline Markets During the Transition to Deregulation," (with E. E. Bailey), *Journal of Law and Contemporary Problems 44 1,* Winter 1981, pp. 125-45.

"Economies of Scope," (with R. D. Willig), *American Economic Review 71 2,* May 1981, pp. 268-72.

"On the Nonlinear Pricing of Inputs," (with J. A. Ordover), *International Economic Review 23 3,* October 1982, pp. 710-26.

"Contestable Markets: An Uprising in the Theory of Industry Structure: Reply," (with W. J. Baumol and R. D. Willig), *American Economic Review 73 3,* June 1983, pp. 491-96.

"Regulatory Theory and the U.S. Airline Experience," *Zeitschrift fur gesamte Staatswissenschaft 139 3,* October 1983, pp. 490-505.

"An Economic Analysis of Alternative Fee Shifting Systems," (with R. R. Braeutigam and B. M. Owen), *Journal of Law and Contemporary Problems 47 1,* Winter 1984, pp. 173-85.

"Testing for 'Monopoly' Equilibrium," (with J. N. Rosse) *Journal of Industrial Economics 35 4,* June 1987, pp. 443-56.

"Public Utility Pricing and Investment Under Risk: A Rational Expectations Approach," (with S. Coate). *Journal of Regulatory Economics,* December 1989, pp. 305-17.

"Diversification Incentives Under 'Price-Based and 'Cost-Based' Regulation," (with R. R. Braeutigam) *Rand Journal of Economics,* Autumn, 1989, pp. 373-91.

"Two-Part Tariffs for Inputs: The Case of Imperfect Competition," (with D. S. Sibley), *Journal of Public Economics, 40* 1989, pp. 237-49.

"Effects of the Change from Rate of Return to Price Cap Regulation," (with Ronald R. Braeutigam), *American Economic Review, 83 2* May 1993, pp. 191-98.

"Network Competition and the Provision of Universal Service," (with Steven S. Wildman), *Industrial and Corporate Change, 4 4* December 1995, pp. 711-719.

"On Setting Prices and Testing Cross-Subsidy with Accounting Data," (with Michael Bradley and Jeffrey Colvin), *Journal of Regulatory Economics, 16 1* July 1999, pp. 83-100.

"A Methodology for Measuring the Costs of Universal Service," *Information Economics and Policy, 12 3* September, 2000.

II. Books

Regulation, Service Quality, and Market Performance: A Model of Airline Rivalry, Garland Press, New York, 1979.

Contestable Markets and the Theory of Industry Structure, (with W. J. Baumol and R. D. Willig), Harcourt Brace Jovanovic, San Diego, 1982, Revised Edition, 1987.

III. Publications in Conference Proceedings and Other Volumes

"Some Thoughts on the Market Implications of the Federal Aviation Act of 1975," Printed in *Regulatory Reform and the Federal Aviation Act of 1975,* DOT-TST-76-59.

"The Pareto Domination of Usage Insensitive Pricing," in H. S. Dordick, ed., *Proceedings of the Sixth Annual Telecommunications Policy Research Conference,* Heath, Lexington, Mass., 1979.

"Sustainability, Efficiency, and Vertical Integration," in B. M. Mitchell and Paul Kleindorfer, eds., *Proceedings of an International Symposium on Public Regulation and Public Enterprises,* Heath, Lexington, Mass., 1980.

"Open Entry and Cross-Subsidy in Regulated Markets: Comment," in Gary Fromm, ed., *Studies in Public Regulation,* M.I.T. Press, Cambridge, Mass., 1981.

"On the Theory of Perfectly Contestable Markets," (with W. J. Baumol and R. D. Willig) in F. W. Matthewson and J. E. Stiglitz, eds., *New Developments in the Theory of Industry Structure,* M.I.T. Press, Cambridge, Mass., 1986.

"Competition and Efficiency," in John Eatwell, Murray Milgate, and Peter Newman, eds., *The New Palgrave: A Dictionary of Economics,* Stockton Press, New York, NY, 1988.

"Technological Determinants of Firm and Industry Structure," Chapter 1 in Richard Schmalensee and Robert Willig, eds., *Handbook of Industrial Organization,* North Holland, Amsterdam, 1989.

"Regulation, Deregulation and Safety: An Economic Analysis," (with Ian Savage), in Leon Moses and Ian Savage, eds., *Transportation Deregulation and Safety,* Oxford University Press, 1989.

"Is Postal Service a Natural Monopoly?" in Michael Crew and Paul Kleindorfer, eds., *Competition and Innovation in Postal Services*, Kluwer, 1991.

"Competition, Efficiency, and the Vertical Structure of Postal Services," in Michael Crew and Paul Kleindorfer, eds., *Regulation and the Evolving Nature of Postal abd Delivery Services: 1992 and Beyond,* Kluwer, 1993.

"Contestability: Useful Benchmark or Empty Box?" Proceedings of an International Congress on the Value of Competition, Milan, March 26-28, 1992.

"The Economics of Mail Delivery," in G. Sidak, ed., *Regulating the Postal Service* American Enterprise Institute, 1994.

"Issues in Measuring Incremental Cost in a Multi-Function Enterprise," (with Michael Bradley and Jeff Colvin) in Michael Crew and Paul Kleindorfer, eds., *Managing Change in the Postal and Delivery Industries,* Kluwer, 1997.

"The Way I See It," in M. Gaudry and R. R. Mayes, eds., *Taking Stock of Air Liberalization,* Kluwer, 1999.

"Incentive Regulation in the U.S. Telecommunications Industry." In *1999 Industry Economics Conference: Regulation, Competition and Industry Structure,* Conference Proceedings, Australian Productivity Commission 1999.

"Funding Universal Service Obligations: The Costs of Liberalization," In Michael Crew and Paul Kleindorfer, eds., *Proceedings of the 8th Conference on Postal and Delivery Services,* Kluwer, 2000.

IV. Book Review

Nonlinear Pricing. By Robert Wilson. Oxford University Press, 1993. *Journal of Economic Literature, XXXIII 4* (September 1995), pp. 1339-41.

V. Work in Progress

"Vertical Organization of Competitive Industries," (joint with Federico Ciliberto), paper presented in September 2001 at EARIE in Dublin.

"Reconciling Competition, Downstream Access, and Universal Service in Postal Markets," paper presented in December 2001 at the 2nd Toulouse Conference on Competition and Universal Service in the Postal Sector.

PROFESSIONAL ACTIVITIES

Memberships:	American Economic Association
	European Association for Research in Industrial Economics (E.A.R.I.E.)
	Econometric Society
	International Telecommunications Society
	AEA Commission on Graduate Education in Economics
	Board of Directors, Telecommunications Policy Research Conference, 1991-95, Chair 1994-95
Editorial Boards:	*Review of* Network *Economics*, Co-Editor 2002
	Journal of Regulatory Economics, Associate Editor 1988-
	Journal of Economic Literature 1983-85
	Journal of Information Economics and Policy 1982-
Program Committees:	Eighth Annual Telecommunications Policy Research Conference, 1979
	Econometric Society 1980 North American Winter Meetings.
	E.A.R.I.E. Annual Conference 1984
	Econometric Society 1985 World Congress.
	American Economic Association Annual Meetings 1987.
	Econometric Society 1991 North American Summer Meetings

Chair, 20th Annual Telecommunications Policy Research Conference, 1992

Referee for, inter alia: National Science Foundation, *American Economic Review, Econometrica, Journal of Political Economy, Quarterly Journal of Economics, Bell Journal of Economics, Rand Journal of Economics, Journal of Economic Theory, International Economic Review, Journal of Industrial Economics, Journal of Economic Literature.*

GRANTS, FELLOWSHIPS, and AWARDS

National Science Foundation, "Efficient Regulatory Pricing under Competition," SES-8409171, Principal Investigator, 1984-87.

U.S. Department of Transportation, "Transportation Deregulation and Safety," Co-Principal Investigator, 1987.

Northwestern University Annenberg Faculty Research Fellowship, 1987.

Northwestern University Ameritech Faculty Research Fellowship, 1990.

FAA, Center for Aviation Systems Reliability, Northwestern University Transportation Center, 1991-93.

Ameritech Foundation, "Consortium for Research on Telecommunications Policy." 1994-96.

Alumni Distinguished Achievement Award, Carleton College, June 1994.

Andrew Mellon Foundation, "Economics of the Scholarly Publishing Industry." Co-Principal Investigator, 1995-97.

CONSULTING EXPERIENCE

Corporations: Ameritech, AT&T, Bell Atlantic, Bell South, British Telecom, Commonwealth Edison, GT&E, Niagara Mohawk Power Company, Nynex, Pacific Telesis, Southern California Gas, Southwestern Bell, Telephone and Data Systems, Telstra, Union Pacific RR, and U.S. West.

Industry Groups: American Newspaper Publishers Association, Electric Power Research Institute

Governmental: Deutsche Post AG, Deutsche Telekom AG, New Zealand Commerce Commission, U. S. Department of Transportation, U. S. Federal Trade

Commission, United States Postal Service, Senate of the *Commonwealth* of Puerto Rico, OECD, World Bank.

Testimony: Congress of the United States, U. S. Department of Justice, Federal Communications Commission, Postal Rate Commission, Pennsylvania Utilities Commission, Interstate Commerce Commission, Surface Transportation Board.