

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

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POSTAL RATE COMMISSION  
OFFICE OF THE SECRETARY

POSTAL RATE AND FEE CHANGES, 1997

Docket No. R97-1

RESPONSE OF UNITED STATES POSTAL SERVICE  
WITNESS BERNSTEIN TO INTERROGATORIES OF  
THE NEWSPAPER ASSOCIATION OF AMERICA  
(NAA/USPS-T31-1-21)

The United States Postal Service hereby provides responses of witness  
Bernstein to the following interrogatories of the Newspaper Association of America:  
NAA/USPS-T31-1-21, filed on August 5, 1997.

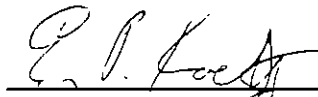
Each interrogatory is stated verbatim and is followed by the response.

Respectfully submitted,

UNITED STATES POSTAL SERVICE

By its attorneys:

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RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

NAA/USPS-T31-1. Please refer to the "purpose" of your testimony presented at page 2.

- a. Please confirm that you define the following two purposes of your testimony:
  - 1. Present prices for subclasses and special services that satisfy the Postal Service 1998 revenue requirement and "minimize the burden on mailers resulting from the break-even requirement based on the Ramsey pricing formula," and,
  - 2. Provide a guideline for postal pricing based on economic efficiency, allowing the Postal Service and regulators to measure the cost of using non-economic rate design criteria in terms of lost economic efficiency.

If you cannot confirm, please explain how either or both of these purposes is incorrect or incomplete.

- b. In your view, are the statutory restrictions on institutional cost recovery from the preferred subclasses included in the "other considerations beyond economic efficiency" references at lines 13 to 14? Please fully explain any negative response.
- c. Do the statutory restrictions on institutional cost recovery from the preferred subclasses reduce economic efficiency? Please explain why or why not.
- d. If your response to part (c) is affirmative, did you compute the reduction in economic efficiency that results from the statutory restrictions on institutional cost recovery from the preferred subclasses? If so, please provide an estimate of the reduction in consumer surplus from these restrictions. If not, please explain why not.

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

RESPONSE:

- a. Confirmed.
- b. The statutory restrictions on institutional cost recovery could be included in the "other considerations beyond economic efficiency." However, the Ramsey prices presented in my testimony were consistent with the requirements of the Revenue Forgone Reform Act (RFRA) and, as such, the economic cost of these statutory restrictions was not analyzed in my testimony.
- c. The statutory restrictions on institutional cost recovery from the preferred subclasses reduce economic efficiency to the extent that the prices of the preferred subclasses based on the constraints of the RFRA are different from the Ramsey prices for the preferred subclasses (based on their price elasticities of demand).
- d. I did not have occasion to calculate Ramsey prices for the preferred subclasses independent of the constraints of the RFRA. The constraints of the RFRA are congressionally mandated and are not subject to the discretion of the Postal Service or the Postal Rate Commission. Therefore, these constraints were included in the calculation of the Ramsey prices presented in my testimony so as to provide both the Postal Service and the Postal Rate Commission with a rate schedule that was consistent with the break-even requirement and with the RFRA.

I did not estimate the reduction in consumer surplus resulting from the restrictions on the institutional cost recovery from the preferred subclasses.

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

NAA/USPS-T31-2. Please refer to the discussion in Chapter 1 of your testimony regarding the burdens on consumers of products A and B. Please confirm that in your calculation of burdens, you do not consider the benefits that consumers may receive from purchasing substitute products offered by other firms. If you cannot confirm, please explain.

Not confirmed. The demand curves for products A and B show the quantity demanded at different prices, holding all other factors constant. Included in these other factors are, among other things, the prices and consumer benefits of substitute and complement products. Therefore, the existence of substitutes, and the benefits that consumers may receive from purchasing substitutes, is imbedded in the demand curve for a product.

In terms of my analysis, suppose product A has a substitute product C. The loss of consumer surplus from an increase in the price of product A consists of two areas. One area is the additional expenditures that consumers make to purchase goods at the higher price. The fact that some consumers continue to buy product A after its price is raised means that product C is not a perfect substitute for product A. For those consumers who continue to buy product A, the higher price imposes a loss of consumer surplus equal to the price increase multiplied by the number of units consumed at the higher price, as measured by the demand curve.

The second area of the loss of consumer surplus is the lost net value of those units not consumed due to the higher price. With respect to this second area, suppose there is a consumer who is virtually indifferent to consuming product A at a price of \$10 or consuming product C. By this I mean that the consumer is willing to pay \$10 for product A, but if the price were raised to \$10.01, the consumer would purchase product C instead. If the price of product A were increased to \$10.01, the loss of consumer surplus by this consumer would be virtually zero. The loss is equal

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

to the difference between what the consumer was willing to pay (something between \$10.00 and \$10.01) and the price actually paid (\$10.00). The point is, to the extent that a substitute product exists, some consumers may be able to easily switch from consuming product A to consuming product C if there were an increase in the price of product A. This easy substitution of product C for product A is part of the demand curve for product A, which shows that even a very small increase in the price of A (from, say, \$10.00 to \$10.01) leads to a decline in consumption of product A.

Thus, the hypothetical increase in the price of product A from \$10.00 to \$10.01 imposes a one cent per unit loss of consumer surplus by those consumers who continue to purchase product A and virtually no loss of consumer surplus from consumers who no longer purchase product A. The above analysis, with explicit consideration of the availability of a substitute product C, is in no way different from that presented in my testimony.

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

NAA/USPS-T31-3. Please refer to your direct testimony at page 8, lines 16-17. Please provide specific definitions for each of the following terms used here: "marginal cost," "per piece volume variable cost" and "essentially equal."

RESPONSE:

Marginal cost and volume variable cost are defined at page 17, lines 15-17 to page 18, lines 1-4: "The marginal cost of a product is defined as the change in product cost associated with a one unit increase in product volume. With respect to the Postal Service, the marginal cost of a product is derived from knowledge of the product's volume variable costs. By the methodology of Postal Service costing, product volume variable cost is equal to product marginal cost multiplied by product volume. Therefore, marginal cost is equal to volume variable cost per piece, obtained by dividing product volume variable costs by product volume."

"Essentially equal" means that any difference that might exist between the technical definition of marginal cost and the Postal Service measure of volume variable cost per piece has no discernible effect on the calculation of Ramsey prices.

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

NAA/USPS-T31-4. Please refer to page 18, lines 3-4, where you state: "marginal cost is equal to volume variable cost per piece." Please also refer to page 38, lines 6-7, where you state: "The Postal Service costing methodology provides a cost estimate that is similar to marginal cost, known as volume variable cost." Have you performed any independent (that is, your own) analysis of Postal Service costing methodologies to satisfy yourself that volume variable costs are in fact equal to marginal costs, or to what extent they may differ? If so, please provide documentation of this analysis.

RESPONSE:

I have not independently analyzed the Postal Service costing methodologies.

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

NAA/USPS-T31-5. Was Library Reference H-164 prepared by you or under your direction?

RESPONSE:

Yes.



RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

NAA/USPS-T31-6. Please refer to page 39, lines 1-8. You increase the price of Express Mail and Registry mail to ensure that the revenues from these products cover their incremental costs.

- a. Does economic efficiency require that the revenues from each subclass recover the incremental costs of the subclass? Please explain why or why not.
- b. If your answer to part (a) is in any way affirmative, please explain why unconstrained Ramsey pricing produces an economically inefficient result and identify the theoretical flaw in unconstrained Ramsey pricing.

RESPONSE:

a. If competing firms exist or entry by such firms is possible, then economic efficiency requires that prices be set at a level that covers incremental costs. If prices are below incremental costs for some product, economically efficient entry could be discouraged.

b. There is no theoretical flaw with Ramsey pricing. In theory, Ramsey price calculations could include as part of the social welfare maximization problem, the possibility of entry or exit by competing firms. Under those conditions, the Ramsey price would satisfy the incremental cost test.

In my testimony, in the two cases where the Ramsey price did not cover incremental costs (Express Mail and Registry mail), I set the price at a level sufficient to cover incremental costs. This approach is suggested by Ronald R. Braeutigam in "Optimal Policies for Natural Monopolies," Chapter 23 of Handbook of Industrial Organization, Volume II, Edited by R. Schmalensee and R.D. Willig, Elsevier Science Publishers, 1989. Braeutigam (at pages 1341-42) recommends "modifying the second-best Ramsey optimal formulation by appending additional constraints to

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

ensure that the resulting prices are as efficient as possible while both being subsidy-free and allowing the firm to break-even. These additional constraints would contribute to dynamic efficiency by guiding prices to send appropriate signals on entry."

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

NAA/USPS-T31-7. Please refer to equation (1) at page 17 of your direct testimony.

- a. Can the Ramsey pricing formula result in rates above the stand-alone cost of a product? Please explain why or why not.
- b. Does economic efficiency require that rates be below the stand-alone cost for each subclass? Please explain your response fully.
- c. If your answer to part (b) is in any way affirmative, please explain why unconstrained Ramsey pricing produces an economically inefficient result and identify the theoretical flaw in unconstrained Ramsey pricing.

a through c. Economic efficiency requires that rates be set no greater than stand-alone costs. Prices above stand-alone cost can encourage inefficient entry. A Ramsey pricing model could be developed to consider the social costs of inefficient entry. However, as explained in my response to NAA/USPS-T31-9, if prices of every product are set at a level necessary to cover incremental costs, then no product price should be above its stand-alone cost.

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

NAA/USPS-T31-8. Please provide all analyses performed by the Postal Service or its contractors that estimate the stand-alone costs for any subclass. If no such analysis has been performed, please state whether the Postal Service has any plans to perform such an analysis.

RESPONSE:

I am not aware of any analysis of stand-alone costs for any subclass of mail. It is my understanding that the Postal Service has no plans to perform such an analysis.

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

NAA/USPS-T31-9. Are the "efficient" prices presented in your testimony consistent with the principle that prices be set below stand-alone cost? Please explain your response.

RESPONSE:

Yes. The stand-alone cost of a mail product (or group of products) is the cost that would result if only that mail product (or group of products) were supplied.

Stand-alone cost is closely related to incremental cost. For a system with  $n$  products, total costs are equal to the incremental cost of the  $n$ th product plus the stand-alone costs of the remaining  $n-1$  products. Furthermore, if one product were priced above its stand-alone costs, the other products would (as a group) be priced below their incremental cost. Since each product is priced above its incremental cost, it can be concluded that no product is priced below its stand-alone cost.

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

NAA/USPS-T31-10. Please refer to pages 47-8 of your direct testimony. Please explain fully why you have opted to impose the price constraints described at these pages.

RESPONSE:

The constraints on the mark-ups of the preferred subclasses, equal to one-half the mark-up of the corresponding regular subclass, were imposed because it is a requirement of the Revenue Forgone Reform Act that any implemented postal rate schedule must satisfy.

The constraints on the prices of Express Mail and Registry mail to cover these products' incremental costs were imposed because prices below the level necessary to cover incremental costs could result in cross-subsidization, which is forbidden by the rules of postal rate-making.

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

NAA/USPS-T31-11. Please provide the comparison shown in Summary Tables 1 and 2 based on unconstrained Ramsey pricing.

RESPONSE:

As explained in my response to sub-part (d) of NAA/USPS-T31-1, I did not calculate Ramsey prices independent of the constraints imposed on the mark-ups of the preferred subclasses.

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

NAA/USPS-T31-12. Please provide the comparison shown in Summary Tables 1 and 2 based on Ramsey pricing constrained only by the incremental cost test but not the statutory requirements that limit the institutional cost recoveries from the preferred subclasses.

RESPONSE:

As explained in my response to sub-part (d) of NAA/USPS-T31-1, I did not calculate Ramsey prices independent of the constraints imposed on the mark-ups of the preferred subclasses.



RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

NAA/USPS-T31-13. Please provide versions of Summary Tables 1 and 2 that compare Ramsey prices to the after-rates prices proposed by the Postal Service in this proceeding.

RESPONSE:

The accompanying Tables 1A and 2A present a comparison between Ramsey prices and the after-rates prices proposed by the Postal Service in this proceeding. Prices are expressed as average revenue per piece, as was done in my testimony. Note that the Postal Service and the Ramsey prices are not entirely comparable. The Postal Service proposal includes a number of initiatives that affect volumes, revenues, and costs, that were not included as part of my Ramsey analysis.

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

**SUMMARY TABLE 1A**  
**Price Comparison**

Mail Product	After-Rates Price (based on R94-1)	After-Rates Price (USPS Proposed)	After-Rates Price (Ramsey Pricing)
First-Class Letters	\$0.3488	\$0.3518	\$0.3551
First-Class Cards	\$0.1612	\$0.1972	\$0.1420
Priority Mail	\$4.4053	\$3.7770	\$2.4124
Express Mail	\$14.0132	\$13.4120	\$11.2947
Periodicals In-County	\$0.1001	\$0.0928	\$0.1416
Periodicals Nonprofit	\$0.1704	\$0.1585	\$0.2409
Periodicals Classroom	\$0.2991	\$0.2168	\$0.4229
Periodicals Regular	\$0.2694	\$0.2363	\$0.4724
Standard Single Piece	\$1.4731	N.A.	\$1.6402
Standard Regular	\$0.1903	\$0.2132	\$0.2575
Standard ECR	\$0.1630	\$0.1500	\$0.0802
Standard Nonprofit	\$0.1248	\$0.1281	\$0.1498
Standard NP ECR	\$0.0866	\$0.0783	\$0.0554
Parcel Post	\$3.6199	\$3.3364	\$4.1123
Bound Printed Matter	\$0.8816	\$0.9128	\$0.8435

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

Special Rate	\$1.3657	\$1.7572	\$1.7775
Library Rate	\$1.7643	\$1.8249	\$2.0383
Registry	\$8.2301	\$8.5808	\$8.3269
Insurance	\$2.0851	\$2.4331	\$2.9067
Certified	\$2.1812	\$1.4993	\$1.7266
COD	\$4.5288	\$4.6381	\$9.3372
Money Orders	\$0.7171	\$1.0136	\$0.8368

**SUMMARY TABLE 2A**  
**Mark-Up Comparison**

Mail Product	USPS Proposed Mark-up	USPS Proposed Mark-up Index	Ramsey Mark-up	Ramsey Mark-up Index
First-Class Letters	101.38	1.276	103.29	1.328
First-Class Cards	82.34	1.037	31.34	0.403
Priority Mail	97.21	1.224	25.96	0.334
Express Mail	103.89	1.308	71.70	0.922
Periodicals In-County	2.74	0.035	56.81	0.730
Periodicals Nonprofit	3.21	0.040	56.81	0.730
Periodicals Classroom	-19.72	-0.247	56.81	0.730
Periodicals Regular	6.84	0.086	113.62	1.460
Standard Single Piece	N.A.	N.A.	18.04	0.232
Standard Regular	47.85	0.602	78.56	1.010

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

Standard ECR	124.69	1.570	20.12	0.259
Standard Nonprofit	19.07	0.240	39.28	0.505
Standard NP ECR	55.61	0.700	10.05	0.129
Parcel Post	1.41	0.018	25.00	0.321
Bound Printed Matter	54.22	0.683	42.52	0.547
Special Rate	36.58	0.461	38.16	0.491
Library Rate	6.62	0.083	19.08	0.245
Registry	66.32	0.835	61.40	0.789
Insurance	78.81	0.992	113.62	1.460
Certified	33.29	0.419	53.49	0.688
COD	6.11	0.077	113.62	1.460
Money Orders	62.71	0.790	34.32	0.441
Overall	79.42	1.000	77.80	1.000

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

NAA/USPS-T31-14. Regarding your use of "marginal cost" for developing Ramsey prices, please indicate whether short-run or long-run marginal cost is more economically efficient. Please explain your response and identify or provide all supporting theoretical literature.

RESPONSE:

Economists generally define long-run marginal cost as marginal cost during a period in which all factors of production are variable, whereas short-run marginal cost is defined as marginal cost during a period in which at least one factor of production is fixed. With respect to my calculation of Ramsey prices, the relevant marginal costs are the marginal costs expected to prevail during the period in which the Ramsey prices would exist. The Ramsey prices were calculated for a 1998 Test Year using projected 1998 volume variable (marginal costs) costs per piece. As such, these are the costs that should be used to calculate the economically efficient prices.

I cannot say with certainty whether Postal Service Test Year costs more closely fit the standard economic definitions of short-run or long-run marginal cost. However, as stated above, that technical distinction is immaterial to my work. Please see the R87-1 testimony of William J. Baumol (USPS-T-3) for a discussion of short-run and long-run marginal costs.

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

NAA/USPS-T31-15. Please refer to page 2, line 13 of your direct testimony.

- a. Please define "economic efficiency."
- b. Please list all the assumptions that are necessary for Ramsey prices to be economically efficient.
- c. Consider a two-part tariff with a fixed prices for each service that is independent of the volume and a volumetric component. Is it your contention that Ramsey pricing is more efficient that a two-part tariff pricing scheme, wherein the volumetric component of the tariff is set at marginal cost? Please explain you response fully, and identify texts or other literature that support your opinion.

RESPONSE:

a through c. There are a number of different definitions of economic efficiency, depending on the conditions under which efficiency is to be obtained. Pareto-optimal efficiency exists if it is impossible to make one person better off without making someone else worse off. Pareto-optimality occurs when the sum of producer and consumer surplus is maximized, a result that occurs under perfect competition with price equal to marginal cost.

Another concept of economic efficiency is relevant when comparing two possible states of the world. One situation is more economically efficient (even if it is not Pareto-optimal) if the sum of the producer and consumer surplus in that situation exceeds the sum of producer and consumer surplus in the other, alternative, situation.

Ramsey pricing is often referred to as second-best pricing because the conditions under which marginal cost pricing will occur do not exist. Specifically, Ramsey pricing applies when there exists a monopoly firm, resulting either from economies of scale which make it less costly for a single firm to produce the

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

demand level of output, or because of legal restrictions on entry, or both. Ramsey pricing can also apply for the case of a multi-product firm in which certain costs of operation can not be assigned to a specific product, but the total cost of producing the combined set of products is less than the sum of the costs of producing each product independently. This latter condition is commonly referred to as economies of scope.

Under conditions of economies of scale, economies of scope, or both, marginal costs of production can be less than average cost of production. In this case, marginal cost pricing will produce a loss. The most efficient pricing strategy under these conditions is still marginal cost pricing, with the resulting loss funded from a non-distortionary lump-sum tax. The tax would have to be unrelated to income (or else it would affect marginal tax rates), unrelated to volume of mail sent by an individual (or else it would affect the marginal cost borne by mailers to send mail). The tax would also have to be unrelated to whether an individual chooses to use the service. Otherwise, individuals could opt out of the system and the tax revenues would not be sufficient to cover the loss resulting from marginal cost pricing.

An alternative to the above approach is Ramsey pricing. Ramsey pricing maximizes consumer and producer surplus subject to a constraint on the firm's profits or losses, usually, but not necessarily, defined as a break-even constraint in which total costs equal total revenues. In theory, however, Ramsey pricing is not the most efficient method to establish prices when marginal costs are less than average cost, but in practice the imposition of a lump-sum non-distortionary tax is not possible.

The two-part tariff scheme mentioned in this interrogatory carries with it some of the conditions of the first-best solution described above. However, the fixed price

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

tariff described in this interrogatory is not imposed regardless of whether an individual uses the mail service. The level of the fixed price would have to be determined, and if some mailers chose not to pay the fixed price (and send no mail) the revenues from the fixed charge could be insufficient to satisfy the break-even constraint.

To ensure that no mailers opted out of the system, the fixed price charged a mailer would have to be set at a level less than the total consumer surplus earned by that mailer. This would probably require some form of price discrimination in which different mailers pay different fixed prices, while all mailers pay marginal cost per piece. An obvious drawback of this pricing scheme, however, is the presence of arbitrage opportunities. A single mailer could act as a clearinghouse for mail, collecting mail from individuals and then re-mailing it through the Postal Service at marginal cost price.

Another important consideration relevant to your hypothetical is that for a multi-product firm such as the Postal Service, the level of institutional cost recovery for each mail product would have to be determined. If the per piece price of each product were set at product marginal cost, the institutional cost could be generated by imposing separate non-volume related fixed charges on users of each mail service, ensuring that the fixed charge for any mailer and for any service is not so large as to cause the mailer to not use the service.

In theory, a properly constructed two-part tariff could be more efficient than Ramsey pricing. It does not appear, however, that such a pricing scheme is practical for the Postal Service.



RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

NAA/USPS-T31-16. Please refer to your discussion of cross-price elasticities at pages 28-30.

- a. Assume that cross-price elasticities exist for two subclasses of mail, but cannot be efficiently estimated because of multicollinearity, insufficient data, or other statistical problems. Under this assumption, is it economically efficient to develop Ramsey prices assuming that the cross-price elasticity terms are zero? Please explain your response.
- b. If the cross-price elasticities are assumed to be zero when in actual fact there is a reasonably high cross-price elasticity between two subclasses of mail, what effect would this assumption have on estimated Ramsey prices compared to the actual economically efficient prices? Please explain fully.
- c. Please confirm that you assumed zero cross-price elasticities of demand between Standard A Regular mail and Standard A ECR mail. If you cannot confirm, please explain what you assumed about the cross-price elasticity of demand between these two subclasses.

RESPONSE:

- a. It is possible that small cross-price elasticities exist between various postal products in addition to the cross-price effects estimated from the econometric demand equations. Ideally, one would include any cross-elasticities, no matter how small, in the calculation of the Ramsey prices. Nonetheless, the absence of a small cross-price elasticity from the Ramsey price calculations would not have a meaningful affect on the efficiency of the Ramsey prices and, in fact, assuming that a small or nonexistent cross-elasticity is zero will probably lead to a more efficient set of prices than assigning an arbitrary positive value to the cross-elasticity.
- b. I do not believe that in actual fact there is a reasonably high cross-elasticity between any two mail subclasses, other than those included in my Ramsey price calculations. Regarding your hypothetical, even if there were a reasonably high

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

cross-elasticity between two subclasses, the effect on the Ramsey prices of these two subclasses would likely be small. The multicollinearity of real postal prices means that the estimated sum of the own-price and cross-price elasticity is robust.

Therefore, the inclusion of cross-price elasticities in the demand equations for two subclasses would probably lead to increases in the estimated own-price elasticities of each of the two subclasses. The cross-price elasticity would produce a higher Ramsey price, but the higher own-price elasticity would produce a lower Ramsey price, so that the two effects largely offset each other.

c. I made no assumption about the cross-elasticity of demand between Standard A Regular mail and Standard A ECR mail. The elasticities used for these subclasses were obtained from the testimony of Thomas Thress (USPS-T-7). He did not include a cross-price elasticity between Standard A Regular and ECR mail.

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

NAA/USPS-T31-17. Please refer to the direct testimony of Postal Service witness Donald J. O'Hara (USPS-T-30), page 36, lines 4-7 where he states "...a lower coverage for ECR would have made it more difficult to design rates so that the Automation 5-digit rate in Standard Regular was below the ECR basic rate, encouraging the movement of ECR basic letters into the automation mailstream." Please also refer to the direct testimony of Postal Service witness Joseph D. Moeller (USPS-T-36), page 28, lines 8-13 where he states "...the Postal Service is proposing rates that, by virtue of the zero percent pass-through described above, would encourage letter mailings with this density to be entered instead as Automation Enhanced Carrier Route or 5-digit Automation letters. The result of this relationship is an expected migration of 3.3 billion letters from Basic ECR letter rate to 5-digit automation." (footnote omitted).

- a. In light of the above two statements, please state whether in your opinion, the assumption of a zero cross-price elasticity between Standard A Regular mail and Standard A ECR mail is reasonable. Please explain fully.
- b. Please confirm that, under your Ramsey prices shown in Table 1, the average per piece rate for Standard A Regular mail would increase by 6.72 cents per piece or approximately 35 percent relative to the R94-1 after-rates price. If you cannot confirm, please explain your response and provide the correct figures.
- c. Please confirm that, under your Ramsey prices shown in Table 1, the average per piece rate for Standard A ECR mail would decrease by 8.28 cents per piece or approximately 51 percent relative to the R94-1 after-rates price. If you cannot confirm, please explain your response and provide the correct figures.
- d. Please confirm that, under your Ramsey prices shown in Table 1, the average per piece rate for Standard A Regular mail would be more than three times greater than that for Standard A ECR mail.
- e. Please confirm that you have assumed that the price changes that would result from imposing Ramsey pricing would cause no shift in mail volume between Standard A Regular and Standard A ECR.
- f. Please explain how the Ramsey prices of these two subclasses would change if a significant positive cross-price elasticity existed between these two subclasses of mail.

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

RESPONSE:

a. As stated in my response to sub-part (c) of NAA/USPS-T31-16, I made no assumption about price elasticities of postal products. With respect to the migration of Basic ECR mail to 5-digit automation, my Ramsey price calculations were made at the subclass level and I did not consider the pricing of individual mail categories of Standard Regular or ECR mail as discussed in your interrogatory. However, the migration of mail between ECR and Regular mail referred to in this interrogatory occurs because the price of one category of Standard Regular is set *below* the price of one category of Standard ECR. Given that the Ramsey price of Standard Regular mail is considerably *above* the Ramsey price of Standard ECR, it is highly unlikely that this kind of pricing relationship would exist under Ramsey pricing. As such, the migration discussed above is not relevant to the my testimony.

b. Table 1 shows that the Ramsey price of Standard A Regular mail is 6.72 cents, or 35 percent, more than the price of Standard A Regular mail based on the relative mark-ups from the R94-1 case applied to Test Year costs for the present case. The Ramsey price of this product is 4.79 cents, or 23 percent, more than the before-rates price, which resulted from the R94-1 case.

c. Table 1 shows that the Ramsey price of Standard A Regular ECR mail is 8.28 cents, or 51 percent, less than the price of Standard A Regular ECR mail based on the relative mark-ups from the R94-1 case applied to Test Year costs for the present case. The Ramsey price of this product is 6.67 cents, or 45 percent, less than the before-rates price, which resulted from the R94-1 case.

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

d. Confirmed.

e. Confirmed.

f. If a significant positive cross-price elasticity existed between Standard A Regular and ECR mail, it is likely that the impact on the Ramsey prices would be small, as explained in my response to sub-part (b) of NAA/USPS-T31-16.

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

NAA/USPS-T31-18. Please refer to your direct testimony at page 62, lines 7-19.

- a. Did you consider developing a Ramsey price for all periodicals mail in aggregate and then developing rates for each subclass that met the statutory constraints regarding the relative cost coverages of the preferred subclasses within periodicals mail? If not, please explain why you did not consider this approach. If yes, please explain why you did not adopt this approach.
- b. If you developed Ramsey prices as suggested in part (a), what would have been the change in the Ramsey prices for each subclass of periodical mail?

RESPONSE:

a. I did consider developing a Ramsey price for all Periodicals mail in aggregate and then developing rates for each subclass that met the statutory constraints regarding the relative cost coverages of the preferred subclasses within Periodicals mail. I did not adopt this approach for two reasons. First, the calculation of the volume forecasts for these mail categories would have required an additional iterative procedure as part of the Ramsey pricing computer program. Second, an estimate of the prices following this approach revealed that the resulting prices were quite close to the prices presented in my testimony, and I concluded that the additional complexity of including this procedure was not worthwhile.

b. A formal calculation of the prices as suggested in sub-part (a) was never done. However, I did make an estimate of the resulting prices.

First, an aggregate own-price elasticity for all Periodicals mail was calculated, using the before-rates Test Year volumes as weights. Table A below shows that the estimated aggregate own-price elasticity for Periodicals mail is -0.200436, equal to  $-2,070.780/10,331.366$ .

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

**Table A**  
**Weighted Average Aggregate Own-Price Elasticity for Periodicals Mail**

Subclass	Before-Rates Volume (millions of pieces)	Own-Price Elasticity	Volume • elasticity
In-county	910.590	-0.529948	-482.565
Classroom	51.343	-1.178481	-60.507
Nonprofit	2,191.116	-0.227917	-499.393
Regular	7,178.317	-0.143253	-1,028.315
Totals	10,331.366	-0.200436	-2,070.780

The second step is to calculate the mark-up for Periodicals Mail as a whole based on the aggregate elasticity. This calculation was never formally made as part of the complete Ramsey pricing program. However, an estimate of the mark-up can be obtained based on the Ramsey k value obtained from the formal Ramsey price calculations. The Ramsey formula, without cross-elasticities, is presented at page 30, line 9, of my direct testimony and re-printed here for convenience.

$$P/M = E/(E + k)$$

The Ramsey k value is equal to 0.1. Substituting an own-price elasticity of about -0.2 into the above equation yields the result that aggregate mark-up for Periodicals mail [which is equal to (P-M)/M] is approximately 100 percent.

The third step is to assign separate mark-ups to the Regular and Preferred subclasses of Periodicals mail that yield a mark-up for the Preferred subclasses that is one-half the mark-up for the Regular subclass while at the same time yielding a weighted average mark-up of 100 percent. Mathematically, this is equivalent to

$$MU_R \bullet W_R + 0.5 \bullet MU_R \bullet W_P = 100 \text{ percent}$$

where  $MU_R$  is the mark-up for the Regular subclass,  $W_R$  is the volume weight of the

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

Regular subclass and  $W_p$  is the volume weight of the preferred subclass. Using the before-rates volumes as weights, the resulting mark-ups for the Regular and Preferred subclasses are approximately 117.50 percent and 58.75 percent. The Ramsey mark-ups presented in my testimony for the Regular and Preferred subclasses are 113.62 percent and 56.81 percent, respectively, virtually identical to the mark-ups that would have resulted from the more complex approach discussed in this interrogatory.



RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

NAA/USPS-T31-19. Please refer to your direct testimony at page 64, lines 1-10, regarding the imposition of the preferred status constraints on Standard A Nonprofit and Standard A Nonprofit ECR mail. Please contrast the economic efficiency of your method with an alternative in which (1) the Ramsey pricing parameters are developed for all Standard A Regular (nonprofit and other) and all Standard A ECR (nonprofit and other) in aggregate, (2) an aggregate Ramsey price markup is developed for each combined group, and (3) rates are developed for each subclass within the group that satisfy the statutory constraints regarding the relative cost coverages of the preferred subclasses.

RESPONSE:

The economic efficiency of the two approaches depends on which approach yields a higher level of consumer surplus. As discussed in my response to NAA/USPS-T31-18, I did not formally calculate Ramsey prices as suggested above. Based on preliminary work, I found that the approach taken in my testimony and the approach suggested above yielded results that were quite similar.

Regarding Standard A mail, the approach taken in my testimony was to calculate the Ramsey mark-up for the non-preferred subclass based on its elasticities of demand and then calculate the preferred subclass mark-up that satisfies the constraints of the Revenue Forgone Reform Act (RFRA). The advantage of this approach, in terms of economic efficiency, is that it establishes the efficient price for the non-preferred subclass which, in Standard Mail, accounts for 77 percent of the total volume of non-ECR mail and 91 percent of the total volume of ECR mail. The disadvantage of this approach, again in terms of economic efficiency, is that the prices of the preferred subclasses are not their Ramsey prices.

The disadvantage of the approach suggested in this interrogatory is that neither the non-preferred or preferred subclasses have their exact Ramsey price. The advantage of this approach is that the elasticity of the preferred subclasses are

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

included to some degree in the calculation of the Ramsey prices.

As stated earlier, the approach that is more economically efficient is the one that yields a higher consumer surplus, across all mail products and not just across the subclasses of Standard A. Based on my preliminary work, I suspect that the actual difference in efficiency between the approaches is small.

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

NAA/USPS-T31-20. Please refer to your direct testimony at page 72 et seq. Regarding efficient component pricing (ECP). In your opinion, does ECP require that worksharing discounts be based on short-run marginal cost or average incremental costs? Please explain your response fully.

RESPONSE:

ECP should be based on marginal costs, so that at the margin, the lowest cost provider of a service or activity is encouraged to perform that task.

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

NAA/USPS-T31-21. Please refer to your testimony at page 75, lines 6 to 11, regarding efficient component pricing (ECP).

- a. Please describe the specific economic conditions under which ECP is economically efficient.
- b. If worksharing was not a viable option for many First-Class mailers, would ECP or Ramsey pricing be the most efficient method for determining the relative rates for presort and nonpresort mail? Please explain your response. If no definite answer exists, please detail the information and analysis which would be necessary to answer the question.
- c. If worksharing is a viable option for all First-Class mailers, would ECP or Ramsey pricing be the most efficient method for determining the relative rates for presort and nonpresort mail? Please explain your response. If no definite answer exists, please detail the information and analysis which would be necessary to answer the question.
- d. If all First-Class letter mailers could legally choose to send their mail via Standard A service, would ECP or Ramsey pricing be the most efficient method for determining the relative rates for First-Class and Standard A letters? Please explain your response. If no definite answer exists, please detail the information and analysis which would be necessary to answer the question.
- e. If all First-Class letter mailers could legally allowed to use Standard A service, do you believe that mailers would make a tradeoff between the additional cost of First-Class service, and the additional value they earn by receiving a presumably higher level of service? Please explain fully any negative response.
- f. If some or all mailers make the tradeoff described in part (e) above, is ECP the most efficient method for setting the relative rates for the two services? Please explain your response.
- g. If there exists a very high cross-price elasticity between Standard A Regular mail and Standard A ECR mail, would ECP or Ramsey pricing be the most efficient method for determining the relative rates for Standard A Regular and Standard A ECR mail? Please explain your response. If no definite answer exists, please detail the information and analysis which would be necessary to answer the question.

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

RESPONSE:

a. Efficient Component Pricing (ECP) minimizes the combined cost of mailers and the Postal Service of providing mail service. It applies when either the mailer or the Postal Service can perform an activity related to the provision of mail service. For example, mailers can presort their mailing or the Postal Service can sort the mailing. The principle of ECP is that the party that can perform the task at the lowest cost should be encouraged to do so. This condition can occur if the discount for presorting is set equal to the difference between the Postal Service's cost of nonpresorted and presorted mail. Please see my testimony at pages 72 - 75 for an extended discussion of how Efficient Component Pricing encourages cost minimization.

With respect to economic efficiency, cost minimization is not a sufficient condition to ensure economic efficiency. One situation in which ECP is economically efficient is when marginal cost pricing exists. ECP minimizes marginal cost and therefore maximizes the efficiency of pricing at marginal cost. If marginal cost pricing is not a viable option, as in the case of the Postal Service, then ECP is not necessarily economically efficient.

b. Ramsey pricing of postal products is never less efficient than ECP. Ramsey pricing maximizes the sum of consumer and producer surplus subject to a break-even constraint. ECP minimizes the total combined cost of mailers and the Postal Service for the provision of mail services. While cost minimization is important, cost minimization alone will not necessarily lead to the most efficient set of prices. It can be the case that a set of prices will not minimize costs but will still maximize

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

consumer and producer surplus. With respect to postal pricing, differences in the elasticities of demand of the two products subject to worksharing can lead to the result that the more efficient Ramsey prices will not be exactly equal to the prices obtained from simple application of ECP. This would occur if the gains in terms of additional consumer surplus outweigh the higher costs resulting from non-ECP pricing.

c. Again, as stated in sub-part (b), Ramsey pricing is never less efficient than ECP. It may be the case, however, that if all First-Class mailers could use worksharing, the demand system for letters would be such that the Ramsey efficient prices would be consistent with ECP.

d. In terms of economic efficiency, Ramsey pricing should be used to establish the rates for First-Class letters and Standard A mail. The decision to use First-Class or Standard A mail does not comply with the conditions for use of ECP as stated in sub-part (a) of this interrogatory. The Postal Service cost for a Standard A mail piece with a given level of worksharing (e.g., Automation 5-digit letters) is lower than the cost of a First-Class letter having the same level of worksharing. It is my presumption that the lower cost of Standard A mail is a result of, among other things, its deferred delivery and the absence of free forwarding. These activities are not activities that mailers can perform as part of their worksharing.

e. Yes, mailers could be expected to make a trade-off between the additional cost of First-Class service, and the additional value they earn by receiving a presumably higher level of service. Under current conditions, those mailers who can choose

RESPONSE OF POSTAL SERVICE WITNESS BERNSTEIN  
TO INTERROGATORIES OF NAA

between sending mail First-Class or Standard A make the above trade-off.

f. For the reasons stated in sub-part (d), Ramsey pricing should be used to establish the economically efficient prices for First-Class letters and Standard A mail. The trade-off between the higher price of First-Class service and the additional value of First-Class service is measured by the cross-price elasticity between First-Class letters and Standard A Regular mail. This cross-elasticity is included in the Ramsey price calculations presented in my testimony.

g. If a cross-price elasticity existed between Standard A Regular and ECR mail, Ramsey pricing should be used to establish the economically efficient rates of these two subclasses. Ramsey price calculations include the impact of own- and cross-price elasticities. ECP considerations could be included in the Ramsey price calculations, as was done in my testimony in the separate pricing of single-piece and workshared letters. That is, to the extent that some mailers might be making a decision to send Standard A Regular or ECR mail based on worksharing discounts, ECP considerations would be relevant. However, given that Standard A Regular and ECR mail have clear differences in their price elasticities of demand, Ramsey analysis should be undertaken to determine the most efficient prices for these two subclasses. The demand elasticity differences could easily give rise to the situation in which the efficient prices for Regular and ECR mail (those that maximize consumer surplus subject to a break-even constraint) are not identical to those that would arise from simple application of ECP.

DECLARATION

I, Peter Bernstein, declare under penalty of perjury that the foregoing answers are true and correct to the best of my knowledge, information and belief.

  
\_\_\_\_\_

(Signed)

  
\_\_\_\_\_

(Date)



### CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon all participants of record in this proceeding in accordance with section 12 of the Rules of Practice.

  
Eric P. Koetting

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August 19, 1997