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

NOTICE OF RULEMAKING

Docket No. RM2010-9

INITIAL COMMENTS OF THE UNITED STATES POSTAL SERVICE CONCERNING
METHODS TO ESTIMATE VOLUME CHANGES CAUSED BY
PRICING INCENTIVE PROGRAMS
(July 16, 2010)

I. INTRODUCTION

This document responds to the Postal Regulatory Commission's request in Docket
No. RM2010-9 for comments on methodologies used to evaluate incentive programs
such as the Summer Sales on Standard Mail and the Fall Sale on First-Class Mail. In
particular, the Commission has asked for comments on its elasticity-based approach,
the Postal Service's market-historical approach, and the Public Representative's
variation on the Postal Service's approach, which relies on individual mailer history.

Each of these approaches attempts to determine the added value of an incentive
program to the Postal Service by estimating the amount of contribution generated (or
lost) as a result of the discounts being offered. They all attempt to measure the amount
of volume growth that occurred because of the program, then calculate the additional
contribution from that volume, and subtract out the total rebates paid to arrive at net
new contribution. The underlying idea is that the program should generate enough
volume growth to offset the total discounts in order for the program to be beneficial to
the Postal Service. The difference among the methodologies lies in the way they

estimate the amount of volume growth resulting from the incentive, and we will consider each in turn.

II. ELASTICITY APPROACH

In its evaluations of incentive programs to date, the Commission has used an approach based on applying the own-price elasticity to estimate the volume that would have existed in the absence of the program. As the Commission states:

> An elasticity-based approach has many advantages, not the least of which is that price elasticities implicitly control for all other variables that affect volume. Therefore, other exogenous variables that cause changes in volume are held constant, thus isolating the volume generated in response to the discount from the volume change due to all other factors.

(Docket No. RM2010-9, Notice, at 5)

a. Applying product elasticities to customers or customer segments

Although this seems to promise a relatively easy and effective way to estimate value, the Commission's actual method, which applies the aggregate product elasticity, will tend to underestimate the value of the program to the Postal Service. This outcome results from the differing elasticities between customers and the effect that difference has on participation rates and the amount of growth a discount induces.

i. Customers have differing price sensitivities

A price elasticity is the mathematical representation of behavior in reaction to price changes. In the case of an elasticity for a product as a whole, the aggregate reaction is the result of a number of decisions made by individual customers. Each of these customers makes a decision about how much more (in the case of a discount) to mail that is grounded in individual constraints—like supply-chain, mail-production, and financing costs—and opportunities—like available mailing lists and probable returns on investment. Because these factors will vary among customers, customer reactions will vary as well, meaning they will have differing elasticities. Customers whose constraints are less onerous or whose opportunities are greater have higher[1] elasticities; those with less opportunity will have lower elasticities. Additionally, aggregate reaction to a price change can mask individual customer behavior that can seem to be counterintuitive because it is not a direct reaction to price changes, but a reaction to market changes arising from the price change. For instance, if a price change causes a customer to exit a market, a competitor could take advantage of that exit to extend its presence. The aggregate result may be little or no loss of volume in reaction to the price change, but that observation yields no reliable information about individual customer behavior.

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[1] The terms "higher" and "lower" are used here in reference to the absolute value of an elasticity. Because they represent the relationship between price change and volume change, elasticities are negative (that is, an increase in price results in a decrease in volume). Therefore, customers who are more price sensitive actually have lower (more negative) elasticities. However, it is normal practice to speak of elasticities in absolute value, in order to compare the relative size of volume changes.

ii. *Differing elasticities imply differing responses*

Because individual customer elasticities vary, the responses of those customers to a program will also vary, and customers who have higher elasticities are more likely to participate. To understand this, separate potential participants into two groups: those for whom the threshold is below the volume they would have mailed without the program, and those for whom it is above. A customer will choose to participate when the value of participating in the program outweighs any additional cost. So all customers in the first group will participate, regardless of their elasticity, because even if they mail no more, they earn a discount.[2] Customers in the second group, however, will choose to participate only if the value of any pieces they mail above the threshold outweighs the additional cost they incur from pieces they have to mail at full price to reach the threshold.[3] Because they have more opportunity to generate additional value, customers with higher elasticities who find themselves in this position will be more likely to be able to offset the additional cost. As a result, the aggregate elasticity of the group of participating customers is likely to be higher than the average for the market as a whole.

iii. *Using the aggregate product elasticity will tend to underestimate the value of a program to the Postal Service*

Because the group of customers who participate in a program has a higher than average elasticity, it will grow more as a result of the discount than the use of the

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[2] In point of fact, we would expect at least some growth from most of these customers, even though they don't have to grow to earn rebates, because of the additional value to them of mailing additional pieces at the lower price.

[3] These additional pieces mailed at full price will be a net cost to the customer because the expected return from that volume will not exceed the cost, or else it would have been mailed regardless of the program.

market aggregate elasticity would suggest. The use of the market aggregate elasticity, then, will underestimate the amount of additional contribution generated from new volume as a result of the program. Since new contribution offsets the discounts paid to mailers to create value for the Postal Service, an estimate based on the average elasticity will underestimate this value.

b. Using long-run elasticities (or elements thereof) to evaluate response

Beyond the question of whether a market average elasticity can be used to measure performance of a temporary program is whether elasticities as currently estimated by the Postal Service are even appropriate. Postal Service demand models are estimated using a long history of volumes, prices, and economic indicators, making them ideal for projecting the impacts of general price changes similar to historical changes on the market as a whole.[4] A number of elements inherent in these programs are significantly different than in previous price changes, however, and these elements may make long-run estimates unreliable guides to mailer behavior in this case.

i. The prices introduced for the incentive are structurally different

Unlike historical Postal pricing practice, the incentive programs use a two-part pricing structure, where pieces above a threshold are priced substantially lower than pieces below the threshold.[5] Because a price change that occurs on all pieces has an

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[4] In his comments on this docket filed on July 9, 2010, the Public Representative asserts that the Postal Service had removed a cross-price elasticity between Standard Mail and ECR, thus leaving the models less useful in understanding demand characteristics. The Postal Service has never modeled a cross-price elasticity between Standard Mail and ECR. Instead, it has relied on variables that reflect specific changes in the relationship between those prices, and continues to do so.
[5] Note that some NSAs in the past have also contained multi-part prices, but this is the first instance where list prices have been constructed this way.

implicit effect on income (that is, if the price goes up, a mailer is generating less income from any given piece, even if the mailer chooses to mail the piece at the higher price). This income effect is built into the long-term elasticities, and they may not adequately estimate the effect of a price change on only some of a mailer's volume (where the effect on income is smaller).

<blockquote>ii. Historical conditions surrounding price changes may not be replicated</blockquote>

Another difference between the incentive programs and typical historical price change is the amount of notice customers had of the change. For a general, permanent price change, information about the general size of the change (if not the exact prices) has been available well before the change occurred. Before the current price-cap regime came into effect, the fact of price changes and their size were often known a year in advance. Even under the current regime, there is a general expectation that prices will change each year, and, even if the exact amount of the change is not known, inflation expectations can be used for planning guidance. This advance notice has allowed customers to plan for price changes, and be prepared to adjust their operations and supply chains for them. In contrast, relatively little notice was given of the incentive programs, and customers had less time to plan for them, which may have reduced their ability to take advantage of the discounts, as noted by Mitchell. (Docket R2010-3, Comments of Robert W. Mitchell on Proposed Summer Sale 2010, 4-5) In particular, customers who deal in physical goods may not have had time to adjust their supply chains to absorb increased demand.

Additionally, these incentive programs were temporary, as opposed to the permanent price changes used in modeling the long-run elasticities. This difference has implications for the decisions made by customers, also noted by Mitchell. (Docket R2010-3, Comments of Robert W. Mitchell on Proposed Summer Sale 2010, 4-5) Capital equipment purchasing decisions, for instance, are typically made by balancing the longer-term return against the immediate investment, and a temporary incentive of only 90 days duration is unlikely to have influenced that decision. As a result, a customer's ability to take advantage of the program will have relied on the existence of available capacity for both creating additional mail and for fulfilling any increased demand for products that mail generated. To the extent that that capacity was unavailable, it would have had limited participation.

To the extent that incentives continue to be offered, these concerns may become somewhat less important. If customers are accustomed to incentives, and expect them to continue being offered, they may build them into their planning and adjust supply chains, financing, and other processes to account for them.

III. HISTORICAL GROWTH PATTERN APPROACH

The Postal Service approach to estimating volume growth as a result of an incentive relies on historical growth rate patterns within the market. It starts by examining, for a similar period in the past, the dispersion of customer growth rates around the market average. That is, it looks at how many customers grew more or less than the market as a whole, and the volume belonging to those customers. By assuming that there would have been a similar pattern of growth rates in the absence of

the incentive program, an estimate of the amount of volume earning a rebate that would have existed in the absence of the program can be developed. It follows, then, that anything above that should be new volume.

In theory, this alternative approach should address some of the concerns with the elasticity-based approach described above. Because it attempts to directly estimate what customers would have done, and then attributes the difference between actual performance and this estimate to the incentive, it should account for both capacity constraints and participant growth. But this approach is highly dependent on a stable pattern of differential growth within the market over time. Not every customer has to grow in the same relationship to the market every period for this methodology to work, but roughly the same proportion of customers have to grow more or less than the market as a whole. There is some reason to believe that this is generally true, based on the limited timeframe for which the Postal Service has disaggregated customer data, but the hypothesis has not been rigorously tested, and more data would need to be collected over time in order to test it. To the extent that more incentive programs are implemented though, they may alter these growth distribution patterns, thus making measurement more difficult.

The Public Representative has used a somewhat similar approach to estimating growth, except that he applied the analysis to individual customers; if an individual customer's growth in a historical period exceeded its trend rate of growth, it was assumed that the mailer would outperform trend in the incentive period. (Docket R2010-3, Comments of the Public Representatives, 8-13) Although conceptually similar,

application of this methodology yielded strikingly different results. This approach has some of the same theoretical advantages and all of the same practical disadvantages as the market-wide approach. In addition, though, it relies on the additional assumption that a customer will consistently over- or under-perform against trend. This, in turn, implies ever accelerating or ever decelerating growth by customers, a situation which neither seems sustainable over any length of time (especially accelerating growth), nor is borne out by experience.

IV. CONCLUSION

Each of these approaches has substantial drawbacks, and it is unclear that any produces reliable estimates of contribution change as a result of the incentive programs. The wide dispersion of results among the approaches reinforces this concern. To some extent, the shortcomings are a result of technical flaws, which we have discussed, and at least some of which, in theory, could be corrected with enough effort (and data). But in the end, the problem is in trying to construct an alternate version of past events, a "what-if" scenario that is unknowable and untestable. Although making use of all available information and analysis is a necessary and critical part of making this decision, as with any other, ultimately, the case for pursuing incentive programs must be a matter of business judgment by Postal Service management. Additionally, although improvement and enhancement of tools and techniques used to inform business decisions are to be desired in their own right, it should be noted that, as prices of general applicability, the compliance evaluation of incentive programs should not depend on volume, revenue, or contribution growth as such, but rather on the more

general requirement that the affected classes of mail cover their attributable cost. To the extent that the Commission desires to make a calculation of the additional benefit of this type of program, the Postal Service recommends an approach based on historical patterns of growth, rather than market elasticities. Although additional data and analysis may be needed to flesh out this methodology, it appears to have the potential to yield a more realistic, and less biased, estimate of growth resulting from an incentive.

UNITED STATES POSTAL SERVICE

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