

In Reference to Order #5337 filed Dec. 5, 2019,
Docket No. RM2017-3, Statutory Review of the System
for Regulating Rates and Classes for Market Dominant Products,
Revised Notice of Proposed Rulemaking,
U.S. Postal Regulatory Commission

EXPERT DECLARATION OF KEVIN NEELS AND NICHOLAS POWERS

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I. Introduction

A. Brief Biographical Info

1. Kevin Neels is Principal Emeritus at The Brattle Group, an economic consulting firm headquartered in Cambridge, Massachusetts. He is the former head of that company's transportation consulting practice. He has more than 40 years of experience as a consultant and expert witness in the rail, trucking, courier, postal, aviation, and automotive industries. He has led many significant engagements relating to competition, market structure, pricing, revenue management, distribution strategy, regulation, and public policy. His work has addressed issues related to system planning, competition policy, privatization, and congestion management.
2. Prior to joining The Brattle Group, Dr. Neels served as Vice President and leader of the transportation practice at Charles River Associates. He has also served as a researcher in the Urban Policy Program at the Rand Corporation and the Transportation Studies Program at the Urban Institute, as a Director in the Transportation Practice at the consulting firm of Putnam, Hayes & Bartlett, and as a Management Consultant in the Transportation Practice of the firm now known as KPMG. He is a former Chairman of the standing Committee on Freight Transportation Economics and Regulation of the Transportation Research Board, an arm of the National Academy of Sciences. He is currently a member of the Transportation Research Board's standing Committee on Airport and Airway Capacity and Delay.
3. On a number of prior occasions Dr. Neels has been asked to offer expert testimony in legal and regulatory proceedings, including testimony relating to the regulation of postal rates. In the postal context, he has submitted testimony covering topics including transportation costs, mail processing costs, delivery costs, and service standards in the context of price cap regulation. He earned his Ph.D. from Cornell University.
4. Nicholas E. Powers is a Senior Associate at The Brattle Group, where he has been employed since completing his doctoral studies in 2010. In his consulting work, he has specialized in conducting econometric and economic analyses and applying concepts from industrial organization and regulatory economics in competition, regulatory, and other litigation matters.
5. Dr. Powers has extensive experience conducting analysis for and submitting expert reports in regulatory proceedings. This experience includes the analysis of regression-based costing models in the postal industry, econometric analysis of innovative pricing programs in the electric industry, rate of return analysis in the telecommunications industry, and econometric analysis of the renewable fuels market. He has also acted as both an independent evaluator and an advisor to several procurement processes in the electricity sector. Through these and other engagements, Dr. Powers has prepared and submitted declarations and reports in proceedings before the Postal Regulatory Commission, the Federal

Communications Commission, the Environmental Protection Agency, the Maryland Public Service Commission, and the Pennsylvania Public Utility Commission. He has also coauthored two reports for the Department of Energy on electric grid infrastructure and approaches to valuation of various grid assets. He earned his bachelor's degree from Cornell University, and his Ph.D. from the University of Michigan. The resumes of Dr. Neels and Dr. Powers are included as attachments to this declaration.

B. Purpose of this Declaration

6. Together, we have been retained by counsel for the Association for Postal Commerce to comment on the proposals contained in the Postal Regulatory Commission's Order No. 5337, issued as part of its 10 Year Rate System Review.¹
7. Our declaration discusses several flaws in the proposals contained in Order No. 5337. A brief summary of our conclusions follows:
 - We begin with a discussion of price cap theory and its applicability to the Postal Service, illustrating how certain institutional features of the Postal Service may limit the Postal Service's response to the incentives inherent in price cap regulation.
 - We next discuss a number of flaws in the specific provisions of the Commission's proposal, beginning with a discussion of the fact that delivery points – a key input underlying the Commission's proposed density authority formula – are not a driver of large portions of Postal Service costs. The same density authority is self-reinforcing and will likely accelerate volume losses.
 - We also discuss the Commission's failure to consider the potential implications of its proposals on volume. The Commission's proposals allow for sustained rate increases of an unprecedented magnitude, which will accelerate the substantial volume declines the Postal Service is already experiencing. Furthermore, there are good reasons to be concerned that the Postal Service's existing estimates of price elasticity will understate the response to these uniquely large rate increases.
 - We present the results of a scenario analysis that explores the potential implications for mail volumes through FY2026. These scenarios demonstrate that, over the relevant 5-year time frame, volume losses in the most profitable classes of market dominant mail could be more than double what they would be under the existing system.
 - We conclude with a discussion of the conceptual disconnect between the Commission's "financial health cycle" rationale and its performance-based rate authority proposal.

¹ Order No. 5337, Statutory Review of the System for Regulating Rates and Classes for Market Dominant Products (Docket No. RM2017-3), Revised Notice of Proposed Rulemaking, U.S. Postal Regulatory Commission, December 5, 2019 (hereinafter, "Order").

II. Summary of Commission's Proposed Order

8. Order No. 5337, which is the subject of this declaration, is the third substantive order issued by the Commission in docket RM2017-3. The first two orders were issued simultaneously in December 2017. The first order (Order No. 4257) presented the Commission's findings from its review of the ratemaking system, while the second (Order No. 4258) contained a Notice of Proposed Rulemaking which would have substantially changed the system for regulating rates charged for market dominant products.² Order No. 5337 revises the proposals contained in Order No. 4258.
9. The current market dominant rate system prevents the Postal Service from increasing its prices, on average, any faster than inflation. Individual products may experience price increases that exceed inflation as long as each class of mail (e.g., First-Class Mail, Marketing Mail, etc.) experiences average price increases that do not. The proposal contained in the Commission's Order No. 5337 contains several provisions that under certain conditions would grant the Postal Service significant additional rate authority, over and above the inflation-based rate authority it currently enjoys. We briefly describe these provisions here.
10. The Commission proposes first that the Postal Service be granted "density authority," which would be awarded retrospectively to compensate the Postal Service for "increases in per-unit cost that are driven by measured declines in year-over-year density," where density is defined as volume (piece count) divided by the number of delivery points.³
11. Next, the Commission proposes that the Postal Service be granted "retirement authority" each year for 5 years, to enable it to make the statutorily mandated amortization payments for unfunded retirement liabilities.⁴ This proposal would ostensibly "add sufficient additional rate authority so that at the end of that 5-year period, the Postal Service should generate sufficient additional revenue to pay for the amortization segment of the Postal Service's liability, if accompanied by an equivalent rate increase on Competitive products."⁵ Together, the density authority and the retirement authority replace the provision in the

² Order No. 4257, Statutory Review of the System for Regulating Rates and Classes for Market Dominant Products (Docket No. RM2017-3), Order on the Findings and Determination of the 39 U.S.C. § 3622 Review, U.S. Postal Regulatory Commission, December 1, 2017 ("Order No. 4257"); Order No. 4258, Statutory Review of the System for Regulating Rates and Classes for Market Dominant Products (Docket No. RM2017-3), Notice of Proposed Rulemaking for the System for Regulating Rates and Classes for Market Dominant Products, U.S. Postal Regulatory Commission, December 1, 2017 ("Order No. 4258")

³ Order No. 5337 at 77-80.

⁴ Order No. 5337 at 95-103.

⁵ Order No. 5337 at 95.

proposed rulemaking contained in Order No. 4258, which unconditionally granted the Postal Service an additional 2 percentage points of ratemaking authority on an annual basis.

12. Order No. 5337 also modifies the Commission’s proposal to grant the Postal Service performance-based rate authority.⁶ Under the revised proposal, “the Commission is instituting a performance-based rate authority in the amount of 1 percentage point per annum for each class of mail,” as long as the Postal Service’s total factor productivity (“TFP”) exceeds that of the previous fiscal year, *and* the Postal Service maintains its service standards.
13. The Commission also proposes to grant 2 percentage points of additional rate authority per year to non-compensatory classes, which are classes of mail for which total revenues do not cover total attributable costs.

III. Price Cap Theory and Its Applicability to the Postal Service

14. In his Declaration, Professor Willig succinctly describes the advantages of price cap regulation relative to more traditional forms of regulation, such as cost plus or rate of return regulation:

“...under a genuine price cap system of regulation, the prices that are allowed to be charged do not rise with increases in the costs incurred by the firm, nor with increases in the firm’s capital stock, nor with diminutions in the consumer demand for the firm’s outputs. And prices are not pushed down by the regulation in the event that the firm’s productivity rises, costs fall or demands for the firm’s products and services increase. In essence, this is why the concept of a price cap system of regulation both protects consumers from excessive pricing where effective competition is absent, while still presenting the firm with strong incentives to behave competitively since it will be rewarded at its bottom line for its productivity, cost control and market appeal.”⁷

15. He also describes the benefits and incentives provided under price cap regulation to a regulated firm for achieving gains in productivity:

“The economic logic of a productivity incentive mechanism in the price cap adjustment is simple. When a regulated entity’s productivity growth performance is lower than the productivity target, the entity automatically incurs a penalty similar to what a firm in an unregulated competitive market suffers if its

⁶ Order No. 5337 at 148-150.

⁷ Expert Declaration of Dr. Robert D. Willig, Dkt. No. RM2017-3, February 3, 2020 (hereafter “Willig Declaration”), paragraph 11.

productivity growth is lower than its competitors. And the inverse is also true: if the entity's productivity growth performance is higher than the target, the entity receives a reward akin to the benefits of having higher productivity growth than one's competitors."⁸

16. It is important for the PRC and interested stakeholders to understand how the Postal Service's unique status influences its response to the favorable aspects of price cap regulation cited by Professor Willig. This status influences the Postal Service's response to price cap regulation in a number of important ways that may help to explain why the Postal Service has not reduced costs as much as may have been anticipated.
17. Because the Postal Service is a public enterprise it lacks the residual claimants that play such an important role in shaping the behavior of private enterprises.
18. If a private enterprise manages to generate profits by earning revenues in excess of costs, those profits will be shared among the enterprise's owners. It is usually also the case that the top managers of a private enterprise share in a significant way in the profits earned by the enterprise.
19. In striking contrast, the Postal Service has no definable set of shareholders who stand to benefit personally from its profitable operation. The potential result of this lack of a residual claimant is a reduced focus on cost-cutting and improved efficiency, as there is no individual responsible for directing the activities of the Postal Service who would personally benefit financially from such actions.
20. It is also the case that the financial incentives facing the top management of the Postal Service differ substantially from those of the top management of a comparably sized private enterprise. As the Postal Service states in its annual 10-K report for 2019:

...the Board may allow up to 12 of our officers or employees in critical senior executive or equivalent positions to be paid total annual compensation up to "120 percent of the total annual compensation payable to the Vice President [of the United States] under [3 U.S.C. §104] as of the end of the calendar year in which such payment is received." 39 U.S.C. §3686(c). Based on the Vice President's salary for calendar year 2019, the compensation cap for calendar year 2019 was \$296,280.⁹

"The Board recognizes that a significant disconnect exists between the comparability requirement and the compensation caps in the law governing us and that the various compensation caps do not enable the Board to provide compensation and benefits for our officers that are fully comparable to those in the private sector. This is especially true given our current financial challenges. The

⁸ Willig Declaration, paragraph 15.

⁹ 2019 Report on Form 10-K United States Postal Service, page 91.

Board also recognizes that many of the compensation and benefit tools available in the private sector, such as equity ownership, are not available to us, given our status as a U.S. government entity.”¹⁰

21. The top management of a private enterprise that carries out the difficult and painful work of downsizing in response to the loss of a significant and irreplaceable portion of that organization’s core business can expect to be handsomely rewarded for its successful efforts. In contrast, the top management of a public enterprise in comparable circumstances typically has no such expectation. A public enterprise therefore could be expected to behave differently than an otherwise similar enterprise.
22. Additionally, because they are often charged with carrying out vital public purposes, public entities may have an expectation that if they do run into financial difficulty, they may benefit from fiscal relief from the government. The Postal Service has itself recognized this possibility. In its 2019 Annual 10-K report it states that:

“The Postal Service’s status as an independent establishment of the executive branch that does not receive tax dollars for its operations presents unique requirements and restrictions, but also potentially mitigates some of the financial risk that would otherwise be associated with a cash shortfall. With annual total revenue of approximately \$71 billion in 2019, a financially sound Postal Service continues to be vital to U.S. commerce.

The U.S. economy benefits greatly from the Postal Service and the many businesses that provide the printing and mailing services that it supports. Disruption of the mail would cause undue hardship to businesses and consumers as it would significantly inhibit the remittance of payments through the mail, and in the event of a cash shortfall, the U.S. government would likely prevent the Postal Service from significantly curtailing or ceasing operations.”¹¹
23. The combination of factors discussed above – the lack of a vocal residual claimant on its profits, restrictions on the manner in which it can compensate its top executives, and the possibility that it will be relieved of financial obligations in the event of serious financial difficulties – help to explain why the Postal Service has not responded more strongly to the incentives for cost reduction or productivity enhancement that are, as Professor Willig explains, inherent in the system of price cap regulation under which the Postal Service currently operates.
24. One cannot help but wonder whether the proposals put forward by the Postal Regulatory Commission themselves represent a bailout of just the sort anticipated by the Postal Service in its Form 10-K report quoted above. If so, however, it is a bailout funded not by U.S. taxpayers, but rather by market dominant mailers.

¹⁰ 2019 Report on Form 10-K United States Postal Service, page 91.

¹¹ United States Postal Service Form 10-K for 2019, page 64.

IV. Critique of Specific Provisions of the Commission's Proposal under Price Cap Theory

25. There are a number of shortcomings in the Commission's proposal that risk undermining its objectives. These problems result from major conceptual flaws in the Commission's Proposal.

A. Flaws in the Proposed Density Authority

1. Delivery Points are not a Driver of Large Portions of Postal Service Costs

26. In justifying its proposed density authority the Commission has argued that growth in the size of the Postal Service's network, as measured by increases in the number of delivery points, plays a major role, independent of any actions or decisions on the part of the Postal Service, in driving up its costs.
27. Mail density, however, which the Commission defines as a function of both mail volumes and delivery points (Order at 64), primarily affects delivery costs. Delivery points are a major driver of delivery costs, but are not a recognized cost driver of other large cost segments and components, such as mail processing and transportation.
28. A simple calculation can be used to demonstrate why the Postal Service's problems with cost coverage are not driven primarily or even substantially by growth in delivery points. Using existing postal service costing methodology, we can calculate by how much we would expect delivery costs (including affiliated costs) to increase as a result of the typical increase in delivery points, which in recent years has averaged about 0.9% per annum. We estimate that prices would need to increase by 0.23% annually on average in order to offset the increased delivery costs (including affiliated costs). However, under the Commission's formula, the same increase in delivery points (holding volume constant) would result in additional rate authority of 0.38%.¹²

¹² More precisely, we use information on the variability of delivery costs with respect to delivery points from Dkt. No. RM2015-7 ("Report on the City Carrier Street Time Study," United States Postal Service, December 2014, at 84). Applying this variability (54.9%) to the average delivery point growth over the last five years (0.87% per year) implies delivery-related costs should increase 0.48%. Applying this to all delivery related costs, including affiliated or "piggy-backed" costs, implies that costs would rise \$160M, which is equivalent to about 0.23% of the Postal Service's FY19 revenue on all mail and services. The same increase in delivery points would, all things equal, result in a 0.86% decrease in density. After

29. Furthermore, the Postal Service’s recent moves to promote installation of cluster boxes¹³ at new delivery locations neutralizes much of the potential cost impacts of delivery point growth. In a recent update to its Postal Operations Manual, the Postal Service states that “centralized delivery is the preferred mode for new or extended business or residential delivery points, with very rare exceptions, as determined by the Postal Service in its sole discretion.” Accordingly, new delivery points will be substantially less costly to serve, as dozens or even hundreds of mailboxes can be co-located, and served by a letter carrier on a single stop. The fact that new delivery points will be less costly to serve than existing delivery points means that the calculation above *overstates* the true cost impact of the delivery point growth seen in recent years.

2. The Density Authority is Self-Reinforcing and Will Likely Accelerate Volume Losses

30. The other key input to the Commission’s formula for calculating the amount of the proposed density authority is volume (i.e. number of pieces of mail). However, the formula the Commission has proposed to measure changes in density does not differentiate between exogenous volume losses (*i.e.*, those driven by technological change and other factors outside of the Postal Service’s control) and those that are endogenous, over which the Postal Service does exercise some control. Generally speaking, factors over which the Postal Service has some degree of control that would be expected to influence mail volumes include price, service performance, and marketing efforts.
31. The relationship between price and volume deserves special attention, given that the current proposal would grant the Postal Service the authority to raise rates much more quickly and substantially than has been possible historically. The sustained rate increases (or even the prospect of sustained rate increases, as discussed below) that would result from the adoption of the Commission’s proposals can be expected to accelerate future volume declines relative to those that would be observed with CPI-based rate increases. All things equal, these losses of volume will accelerate decreases in density.¹⁴ In addition, since attributable costs can be

multiplying by the FY19 institutional cost share (43.9%), this implies the Postal Service would be granted 0.38 percentage points in density rate authority.

¹³ See, e.g., https://about.usps.com/publications/pub265a/pub265a_006.htm, https://about.usps.com/postal-bulletin/2018/pb22492/html/updt_002.htm

¹⁴ It is clear that the density authority is self-reinforcing. However, the extent to which the density authority increases from year to year depends in part on the evolution of competitive product volumes over the next several years. If competitive product volumes grow quickly, the year-over-year increase in the density authority will be smaller than if competitive product volumes are flat. The overall density measure, which will govern density rate authority in most plausible scenarios, reflects both market dominant and competitive product volumes. Accordingly, continued robust growth in competitive product volumes would offset market dominant volume decreases to some degree, as negative growth

expected to decrease more quickly than institutional costs, they will also increase the institutional cost ratio multiplier. For this reason, the full effects of the density adder will exceed the backward-looking estimates provided by the Commission in Table IV-3.¹⁵

32. The year-over-year effect of sustained price increases means that the density authority embeds a positive feedback loop in the regulatory structure of the Postal Service. The presence of this feedback loop means that the Commission's Table IV-3 is not a reliable indicator of the future impact of its proposed density authority.
33. In addition, mail volume losses that result from sub-optimal marketing efforts will be *rewarded* with additional rate authority in the future. As Dr. Willig more fully discusses in his declaration, this transfer of risk from the Postal Service to its (remaining) customers would distort the Postal Service's incentives, undermining the goals of price cap regulation.¹⁶

B. Long-Run Implications of Cumulative Supplemental Authority and Density Authority

34. Order 5337 contains no discussion of the long-run implications of cumulative supplemental authority and density authority.

1. Additional Rate Authority under the Commission's Proposals Could Allow for Sustained Rate Increases of an Unprecedented Magnitude

35. While there is some uncertainty regarding the exact amount of the real (*i.e.*, inflation-adjusted) rate authority that will be granted over the next several years, the Commission has, in its Order No. 5337, provided a hypothetical indication of the magnitude of rate authority that could result under its current proposal. Table 1 below summarizes these calculations.

rates in market dominant volumes are applied to a smaller and smaller base. In this context, it is worth noting that competitive product volumes have been growing at a slower and slower pace over the last several years, and that they grew only 0.2% in FY2019.

¹⁵ Order No. 5337 at 80.

¹⁶ Willig Declaration, paragraph 24.

Table 1: Indicative Magnitude of Hypothetical Rate Increases Under Order No. 5337

		Average	Maximum
Density Rate Authority	[1]	1.23%	2.69%
Retirement Rate Authority	[2]	0.94%	1.11%
Performance-Based Rate Authority	[3]	1.00%	1.00%
Additional Rate Authority for Non-Compensatory Classes	[4]	2.00%	2.00%
Total Hypothetical Rate Authority (Compensatory Classes)	[5]	3.17%	4.80%
Total Hypothetical Rate Authority (Non-Compensatory Classes)	[6]	5.17%	6.80%

Source: Postal Regulatory Commission Order No. 5337

Notes:

[1]: Table IV-3. Based on historical data from FY11 to FY18

[2]: Table IV-5. Based on hypothetical input data.

[3]: Order No. 5337 at 149.

[4]: Order No. 5337 at 174.

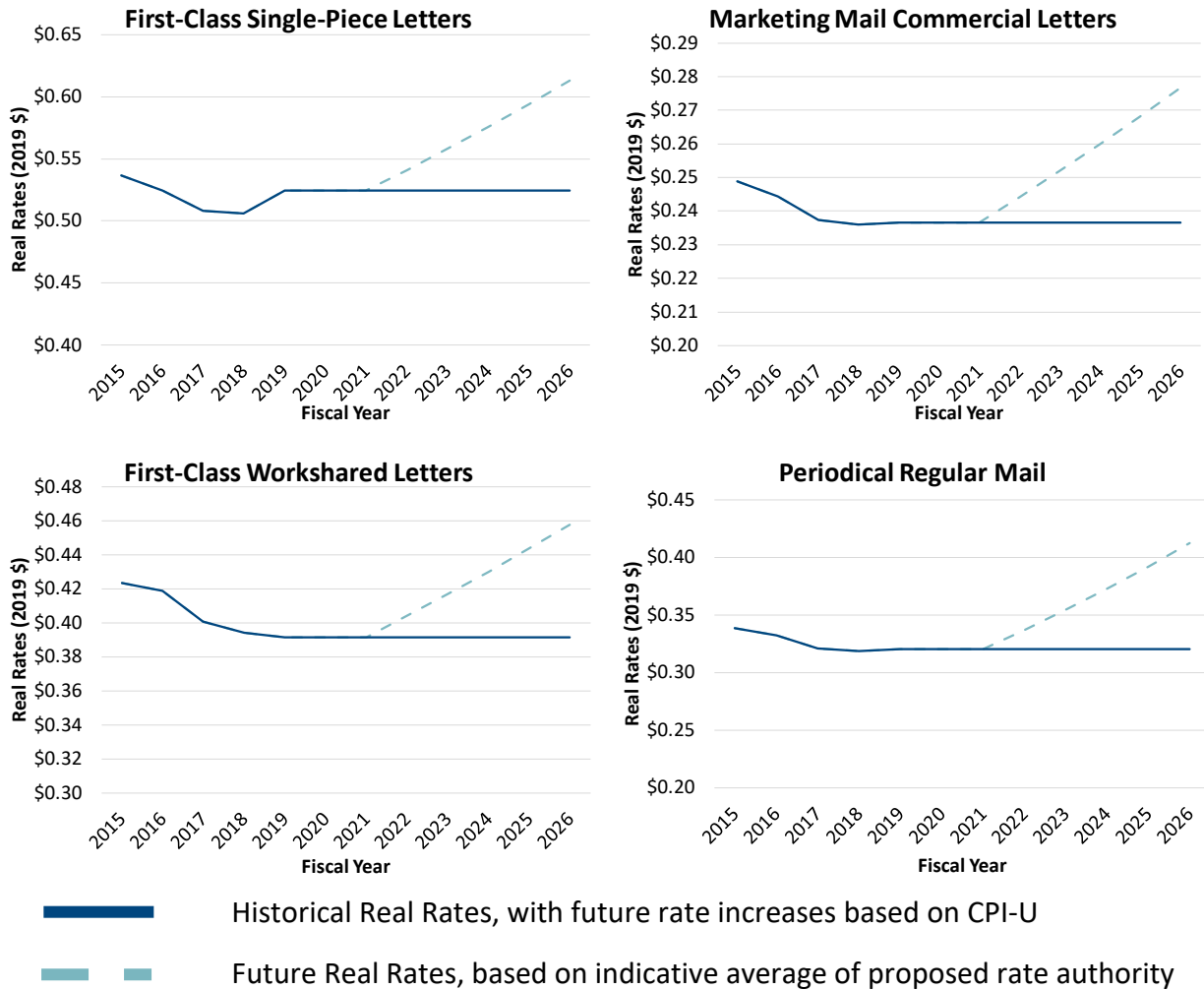
[5] = [1] + [2] + [3]

[6] = [1] + [2] + [3] + [4]

36. In total, these figures imply that the Postal Service could be granted annual new rate authority averaging 3.17% above CPI (5.17% for non-compensatory classes), and up to 4.8% above CPI (6.8% above CPI for non-compensatory classes). Thus over five years, compensatory classes could see cumulative rate increases of roughly 17% in real terms and 29% in nominal terms. For non-compensatory classes, the cumulative rate increases could be even more drastic: 29% in real terms, and 42% in nominal terms.¹⁷ As discussed above, these figures do not account for the self-reinforcing nature of the additional rate authority and thus understate its potential impacts.
37. Using the average rate increases presented in Table 1, Figure 1 illustrates for several high-volume products the potential price differences between the status quo (CPI-U based increases, or zero growth in rates in real terms) and the *average* outcome under the proposal contained in Order No. 5337, assuming that the required conditions are met and each source of rate authority is granted. Note that the prices in Figure 1 are presented in real (*i.e.*, constant-dollar) terms.

¹⁷ These calculations assume that CPI-U will increase by 2.1% per year, which is in line with both historical averages and the Federal Open Market Committee's Core PCE inflation projections. See <https://www.federalreserve.gov/monetarypolicy/fomcproptabl20190619.htm>.

Figure 1: Impacts of Proposed Rate Authority on Real Rates, Selected Products



Note: The vertical scale varies across the four charts above.

Sources: Historical rates based on data provided with Postal Service Econometric Estimates of Demand Elasticity for All Postal Products, FY2019, January 21, 2020. Future rates in base case based on rate increases that keep pace with inflation. Future rates under proposed rate authority scenario are based on indicative magnitudes presented by the Commission in Order No. 5337, as summarized in Table 1.

38. As we explain above, the self-reinforcing nature of the density rate authority means that average price increases could be even higher in future years. And because these represent averages, individual products could face price increases that are higher still.

2. These Rate Increases Will Accelerate Volume Losses

39. Using the Commission’s indicative numbers for rate authority and the Postal Service’s own estimates of price elasticity, rate increases of the average magnitude presented in Table 1 could increase cumulative volume losses at the class level by an additional 4.7% to 8.5% over

the next five years. However, as we will discuss below, there are reasons to believe that the additional rate authority could cause volume losses to accelerate more than these figures would indicate.

40. Although the Commission has suggested that the Postal Service may not use the full rate authority it has been granted,¹⁸ there are numerous indications that the Postal Service would almost certainly use most or all of rate increase authority it eventually receives. First, there is a well-established record of the Postal Service eventually using virtually all of the rate authority it has ever been granted. Second, the Postal Service has publicly advocated for increased rate authority, in this docket and in other settings.¹⁹ It has argued for removal of all restrictions on its ability to increase rates.²⁰ It is unlikely, given these efforts, that the Postal Service would fail to take advantage of any rate increase authority it receives. Finally, the Postal Service's estimates of price elasticity, which are generally less than 1 in absolute value, imply that by raising rates, it can increase market dominant contribution and its overall profits. Indeed, it is because of the likelihood that the Postal Service would abuse unlimited freedom to raise rates that PAEA subjected the Postal Service to regulatory oversight by the Commission.
41. As we argue below in more detail, the mere prospect of these rate increases will be likely to accelerate the Postal Service's volume losses. It thus may not matter in the end whether or not the Postal Service uses the real rate authority it has been granted.

3. Existing Elasticity Models Are Likely to Understate the Impacts of Rate Increases on Mail Volume

42. Existing Postal Service price elasticity models are based on 16 years of data, covering fiscal years 2004 through 2019 (or October 2003 through September 2019). This period includes more than three years of data prior to the passage of PAEA, in December 2006. On average, the rate increases that occurred during this time have simply tracked inflation. In short, real

¹⁸ See Order No. 5337 at 124 (explaining that "the Postal Service must exercise business judgment to determine the appropriate level of increases in light of various considerations, including the effect on mail volumes").

¹⁹ See, e.g., Docket No. RM2017-3, Comments of the United States Postal Service (March 20, 2017) at 175-228 (arguing for replacement of the current system with a system that grants the Postal Service the authority to set prices at any level subject only to monitoring by the Commission as to compliance with the objectives); Docket No. RM2017-3, Initial Comments of the United States Postal Service in Response to Order No. 4258 (March 1, 2018) at 40-48; Statement of Postmaster General and Chief Executive Office Megan J. Brennan before the House Committee on Oversight and Reform, United States House of Representatives, Hearing on The Financial Condition of the Postal Service at 14-15 (Apr. 30, 2019).

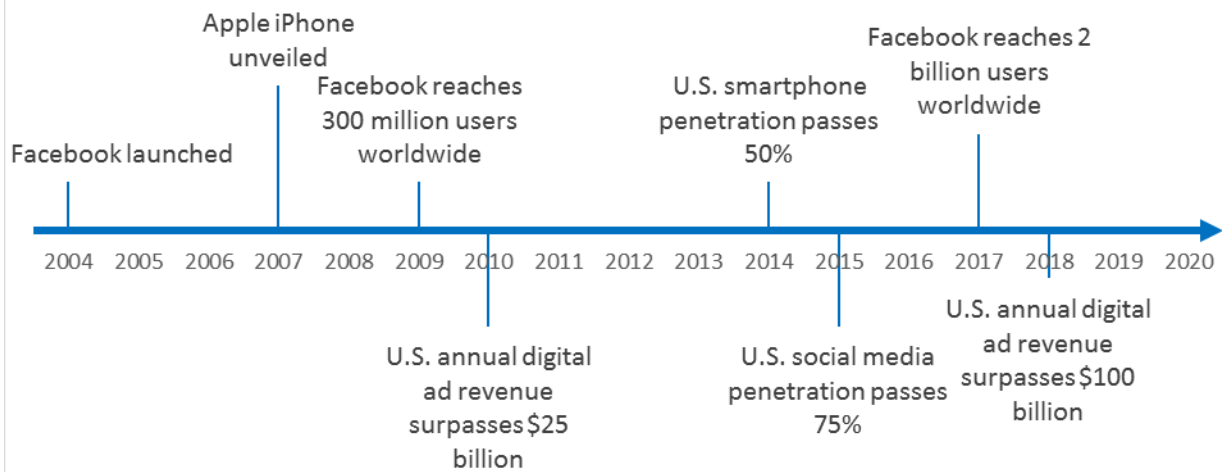
²⁰ Postal Service Form 10-K for 2019, page 42.

costs for mailers have not, on average, risen. As a result, we have not had an opportunity since PAEA to observe how mailers will respond to large and sustained price increases.²¹

43. In general, price elasticity parameters estimated from econometric models of demand can be used to provide reasonable estimates of price responsiveness in the range of prices over which the data are calibrated. However, as prices move outside the range over which the data are calibrated, the estimated elasticity parameters are necessarily less reliable. This fact is a matter of some concern in the present context, given that in recent years we have hardly had the chance to observe the response of mail volume even to small changes in Postal Service prices.
44. A third reason for concern stems from the fact that generally speaking, larger price increases will tend to make demand increasingly price-elastic, as they present erstwhile consumers of the good or service in question with increasingly large incentives to search for and find acceptable substitutes.
45. One of the main reasons mail volumes have been declining in recent years has been the proliferation and growing capability of competing electronic communication modes. Figure 2 illustrates some significant milestones marking the growing importance of digital technology. These broad and fast-moving technological changes can be expected not just to reduce mail volume, but may also increase the price sensitivity of mailers.

²¹ Some commenters may disagree with this statement, citing the exigent rate increase granted in December 2013 that remained in effect until April 10, 2016. *See* Dkt. No. R2013-11, including “Order Granting Exigent Price Increase,” Postal Regulatory Commission, December 24, 2013; and “Notice of the United States Postal Service of Removal of the Exigent Surcharge,” United States Postal Service, February 25, 2016. However, the exigent rate increase was a temporary surcharge – mailers knew in advance that the increase was not permanent and would be removed from the rate base and could plan accordingly. Accordingly, the experience in response to the recent exigent rate increase – after which mailers could reasonably expect rates to return to “normal” levels – is unlikely to be indicative of the response to the large and permanent rate changes that are likely to result from the current proposal.

Figure 2: Technological Change with Potential Implications for Demand for Mail Since 2004



Sources:

"IAB Reports Full-Year Internet Ad Revenues for 2010 Increase 15% to \$26 Billion, a New Record," Interactive Advertising Bureau, accessed January 27, 2020, <https://www.iab.com/news/iab-reports-full-year-internet-ad-revenues-2010-increase-15-26-billion-new-record/>.

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"U.S. Digital Ad Revenues Surpass \$100 Billion Mark for the First Time, Hitting Landmark \$107.5 Billion in 2018, According to IAB Internet Advertising Revenue Report," Interactive Advertising Bureau, accessed January 27, 2020, <https://www.iab.com/news/u-s-digital-ad-revenues-surpass-100-billion-mark/>.

46. In the present context, mailers face the prospect of sustained real rate increases averaging at least 3.2% to 5.2% per year (and, assuming 2.1% annual CPI-U growth, nominal rate increases of 5.3% to 7.3%) per year for a minimum of the next five years, as indicated in Table 1. Whether the Postal Service uses the full rate authority or not, mailers will face, over the next five years and beyond, the dim prospect of continuing rate increases well above any they have experienced before. For many mailers, rate increases of this magnitude may

represent an existential threat to their businesses. In the face of such increases, mailers will be more strongly incentivized to seek substitutes for postal services (*i.e.*, alternative ways of reaching their respective audiences). Hence, large institutional mailers may not wait to see exactly what the Postal Service does with its now increased rate authority. Mailers who alter their business models and practices may not come back even if prospective price increases fail to materialize, or if the rate of price increase slackens in the future. It is for these reasons the price elasticity estimates we have cited above are likely to understate the extent to which additional rate increases will result in volume decreases.²²

4. Analysis of the Medium-Term Implications of Order No. 5337

47. We have undertaken analysis in order to demonstrate in quantitative terms some of the potential implications of the Commission’s current proposal. In this analysis, we rely on information from a variety of sources, including:
- the indicative rate increases taken from Order No. 5337 and presented in Table 1;
 - price elasticity parameters, trend parameters, and parameters associated with other drivers of postal product volume, including employment and investment, from the Postal Service’s most recent demand equations;²³
 - the data used in those demand estimations;
 - Postal Service data on delivery points;²⁴
 - other historical data provided by the Commission in another docket;²⁵ and

²² In 2013, the United States Postal Service Office of Inspector General commissioned a study by Christensen Associates, which analyzed the question of whether postal customers are becoming more sensitive, based on data through FY2012. *See* United States Postal Service Office of Inspector General, “Analysis of Postal Price Elasticities,” Report Number RARC-WP-13-008, May 1, 2013. That study concluded that elasticities are “relatively stable,” and failed to find evidence of significant changes in response to the Great Recession (*Id* at 6). This does not, however, preclude the possibility that elasticities have changed over the past seven years in the face of increasing digitization, or that they will change in the future in response to the threat of unprecedented and sustained price increases implied by the current proposal.

²³ *See* Postal Service Econometric Estimates of Demand Elasticity for All Postal Products, FY 2019, January 21, 2020.

²⁴ United States Postal Service, USPS Annual Tables, FY 2018 TFP (Total Factor Productivity).

²⁵ Postal Regulatory Commission, Library Reference PRC-LR-RM2017-1-2, Dkt. No. RM2017-1, August 7, 2018.

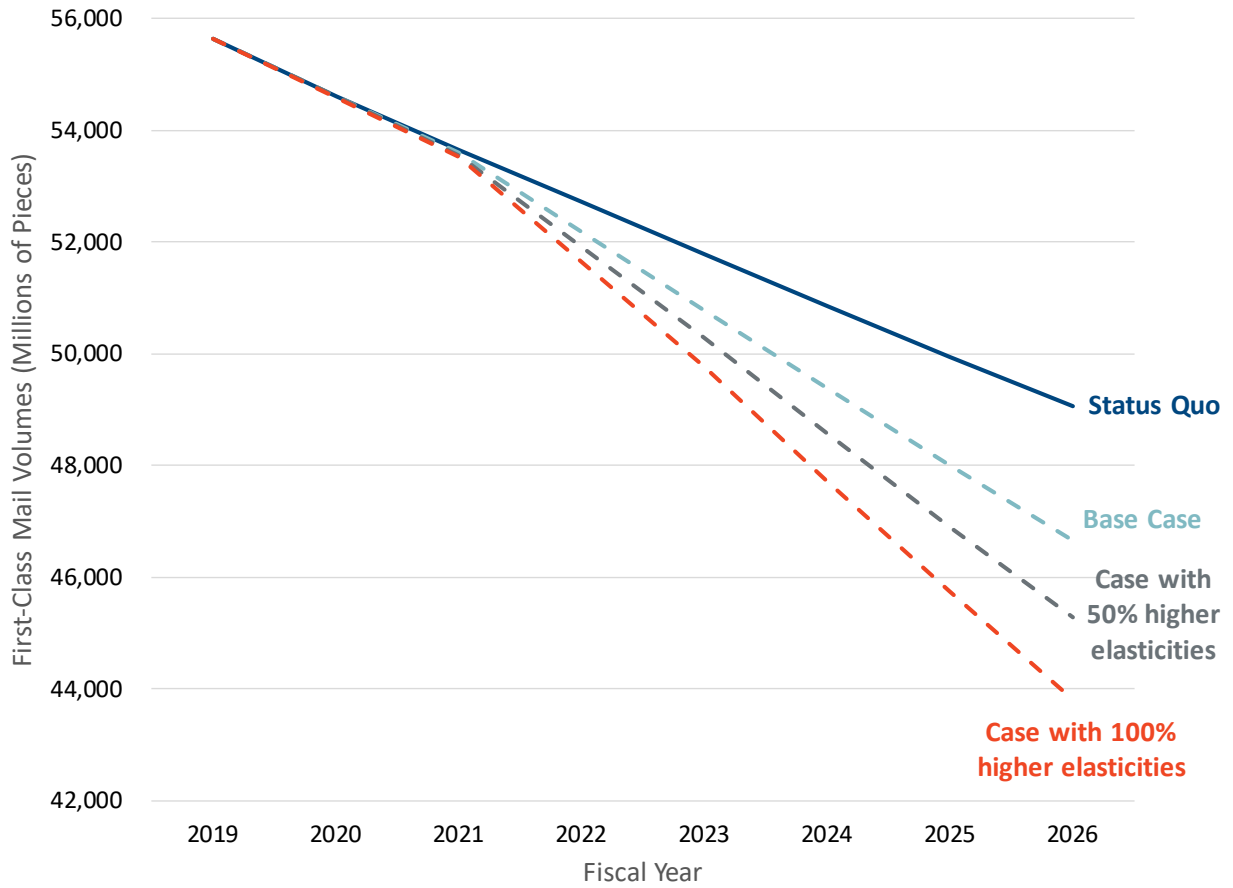
- the Cost and Revenue Analysis Reports filed by the Postal Service in Dkt. Nos. ACR2018 and ACR2019.²⁶
48. We use these data to create a variety of forward-looking scenarios, including:
- a “status quo” scenario, which provides an indication of how rates and market dominant volumes could evolve over the next several years if the price cap in its current format is maintained, and rates increase only with inflation;
 - a “base case” scenario, which provides an indication of how rates and market dominant volumes could evolve over the next several years if the proposal contained in Order No. 5337 is adopted in its current format; and
 - scenarios where Order No. 5337 is adopted as proposed, but, consistent with the preceding discussion, we find demand to be more responsive to these large price increases than the current Postal Service elasticity estimates would suggest.
49. In any scenario where Order No. 5337 is assumed to have been adopted, we update the density rate authority recursively; in other words the effects on volume of above-inflation rate increases in the first years after Order No. 5337 is implemented are factored into subsequent density rate authority calculations.²⁷
50. Consistent with the preceding discussion, the results of this analysis indicate that, even under the most optimistic scenario, the above-inflation rate increases contained in Order No. 5337 have the potential to accelerate volumes significantly. For example, Figure 3 and Figure 4 illustrate potential time paths for first-class and marketing mail volumes, respectively, between FY19 and FY26. In each chart, the solid navy blue line corresponds to volume under the status quo scenario described above (where rate growth is capped at CPI-U). The three scenarios that incorporate the likely volume effects associated with the increased rate authority prescribed in Order No. 5337 are plotted in dotted lines of various colors. Beginning in FY21, the effects of the increased rate authority begin to accelerate volume losses of these two important classes of market dominant mail.²⁸

²⁶ United States Postal Service, Library Reference USPS-FY18-1, Dkt. No. ACR2018, December 27, 2019; United States Postal Service, Library Reference USPS-FY19-1, Dkt. No. ACR2019, December 27, 2019.

²⁷ The methodology and other assumptions are discussed in more detail in “Scenario Analysis Methodology.docx,” a document contained in ANM et al-RM2017-3/7.

²⁸ The exact timing of when the increased rate authority would be rewarded and thus when customers will begin to face higher rates is unclear. For the purpose of our analysis, we follow the timing used by the Commission in its hypothetical retirement rate example, presented on pp. 100-101 of Order No. 5337. We assume that all rate increases tied to supplemental rate authority will be implemented in September, and that the first such increase will take place in September of 2021. Accordingly, FY22 is the first full fiscal year with the increased rates, and FY26 is the fifth such fiscal year. The overall

Figure 3: First-Class Mail Volumes Under Different Scenarios, FY19-FY26

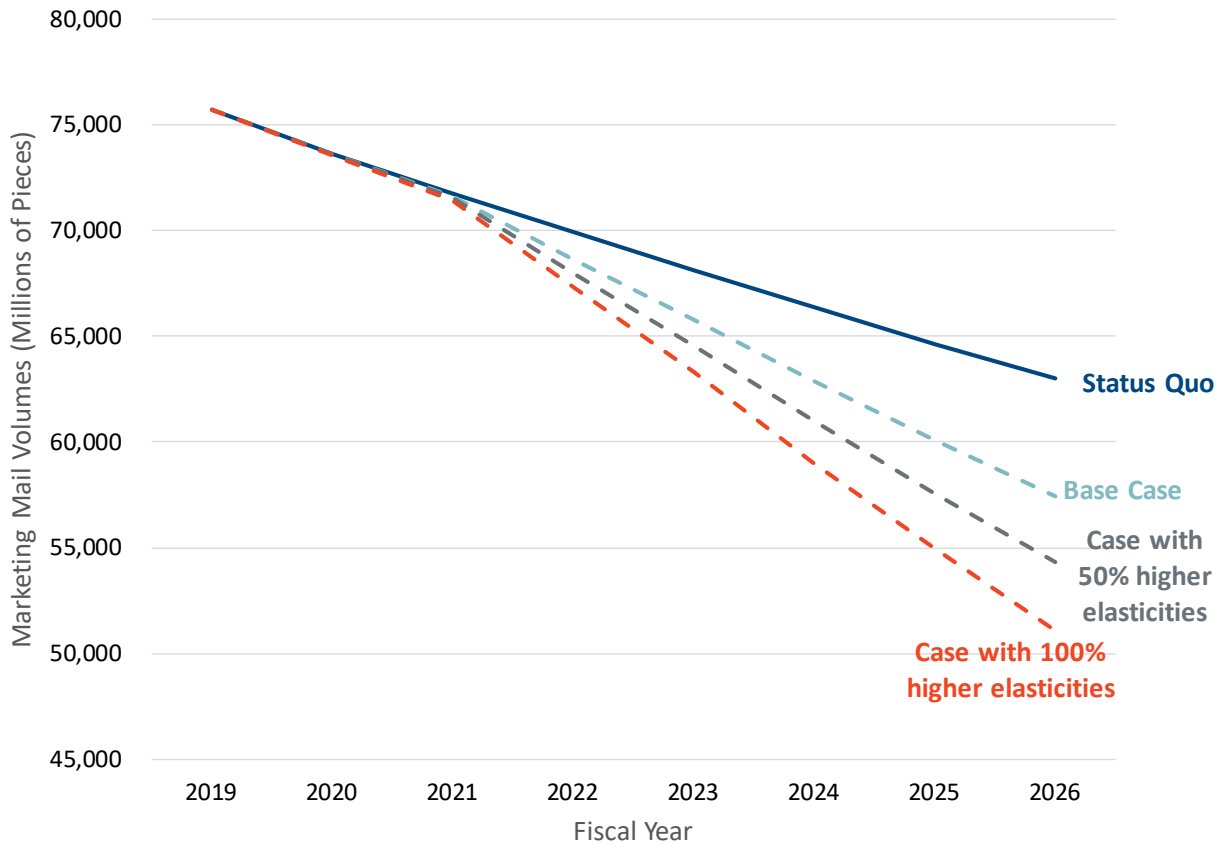


Notes and Sources:

This chart plots First-Class mail volumes that can be expected to result from the analysis of the various scenarios, as described above.

medium-term implications of our analysis are generally robust to changes in the timing of the rate increases.

Figure 4: USPS Marketing Mail Volumes Under Different Scenarios, FY19-FY26



Notes and Sources:

This chart plots Marketing Mail volumes that can be expected to result from the analysis of the various scenarios, as described above.

51. Table 2 provides a different perspective on the extent to which volume decreases would likely accelerate under the Commission’s proposal. As the table indicates, under the “status quo” scenario, First-Class mail volumes can be expected to decrease by roughly 4.6 billion pieces between FY21 and FY26. Across the three scenarios that incorporate the increased rate authority, the resulting 5-year decreases in First-Class mail volumes range from 7.0 billion pieces to 9.7 billion pieces, figures that are 51% to 111% higher than under the status quo. Likewise, Marketing Mail losses over the same period, even without the additional rate authority, can be expected to amount to 8.8 billion pieces, but could be 62% to 131% higher once the effects of the increased rate authority are factored in. The additional rate authority would have a more modest but still significant effect on Periodical volume decreases; the 5-year decreases would be 18% to 37% higher under the Commission’s proposal. The variation in the extent to which volume losses would accelerate under the Commission’s proposal is closely related to differences in the price elasticities of the products in each mail class. The Postal Service estimates indicate that demand for Marketing Mail is the most price sensitive while the demand for Periodicals is the least price sensitive.

Table 2: Volume Changes (in Millions of Pieces) by Mail Class and Scenario, FY 2021 – FY 2026

		Status Quo	Base Case	50% Higher Elasticities	100% Higher Elasticities
		[A]	[B]	[C]	[D]
First-Class Mail					
Absolute Change	[1]	(4,588.4)	(6,939.8)	(8,267.7)	(9,700.9)
As a % of Status Quo Loss	[2]		51%	80%	111%
USPS Marketing Mail					
Absolute Change	[3]	(8,801.4)	(14,222.2)	(17,197.6)	(20,339.7)
As a % of Status Quo Loss	[4]		62%	95%	131%
Periodicals					
Absolute Change	[5]	(954.3)	(1,124.9)	(1,215.9)	(1,311.0)
As a % of Status Quo Loss	[6]		18%	27%	37%

Notes and Sources:

[1], [3], [5]: Outputs from the analysis described above. These present the absolute change in mail volumes, in millions of pieces, of the specified class between FY2021 and FY2026 under each of the specified scenarios.

[2] = [1] / [A][1].

[4] = [3] / [A][3].

[6] = [5] / [A][5].

The calculations in rows [2], [4], and [6] describes the extent to which, under the specified scenario, the volume losses can be expected to increase.

Other market dominant classes have been omitted for brevity, as they are considerably smaller than the three mail classes presented here. They are available in “Scenario Analysis.xlsx”, contained in ANM et al-RM2017-3/7.

52. While the analysis presented here does not constitute a definitive projection, it illustrates very clearly the medium-term impacts of the Commission’s proposal. The Postal Service’s current view of the effects of time and exogenous factors such as employment, investment, and population growth are held constant across the four scenarios; the differences between the scenarios are all driven by: (1) rate increases pursuant to the additional rate authority in Order No. 5337; and (2) variation in the responsiveness of demand to those rate changes.
53. Under the base case scenario, volume losses in the classes of Market Dominant mail that generate the greatest contribution are shown to accelerate significantly over the five-year time horizon contemplated. However, this case presumes that the Postal Service’s current price elasticity estimates provide reliable predictions of how mail volumes will respond to the rate increases in the Commission’s order. As discussed above, there are reasons to doubt their applicability to rate increases of this frequency and magnitude; far greater responses to rate increases are very plausible. The mere possibility of sustained and unprecedentedly large rate increases may trigger sudden and potentially significant volume losses. Furthermore, it

is not difficult to imagine a scenario in which a tipping point is reached – a large exodus of mail volume in a given year triggers a large density authority related rate increase in a subsequent year, setting the Postal Service on a vicious cycle where a dwindling number of mailers pay ever-increasing rates to cover the costs of the increasingly oversized and under-utilized Postal Service network. Given the high degree of uncertainty in how volumes would respond, the Commission should proceed cautiously.

C. Disconnect Between the Commissions’ “Financial Health Cycle” Rationale and Its Performance-Based Rate Authority Proposal

54. The Commission’s justification for granting performance-based rate authority is that that this authority is needed in order for the Postal Service to “reenter the financial health cycle.” The Commission believes that additional rate authority will allow the Postal Service to make “greater capital investment,” which will in turn allow it to realize productivity improvements.
55. Apart from this justification, the proposal put forward by the PRC is inconsistent with the traditional theory of price cap regulation, for a variety of reasons.
56. First, as Professor Willig has explained, under price caps, productivity improvements provide their own reward; any cost savings achieved by the regulated entity fall to the bottom line, becoming retained earnings.²⁹ If the Postal Service has failed to respond to these incentives under the current price cap system it is not clear why the Postal Service needs an additional reward in order to motivate it to reduce costs, or why it can be expected to respond to additional incentives beyond those that it already faces.
57. Second, the proposal put forward by the PRC fails to replicate the outcomes that would be seen in a competitive market. As Professor Willig has explained, in a competitive market a portion of the benefits generated by innovation are passed along to consumers in the form of lower prices. It is for this reason that most price cap regulation schemes take the form of “price index minus X,” where X, a reduction in price increase authority, accounts for – and assures – the transfer to consumers of a portion of the benefits of productivity growth.³⁰
58. The PRC’s proposed performance-based rate authority rejects the argument that consumers should benefit from innovation, allowing the Postal Service to retain all of the benefits of any cost reduction that it achieves. In fact, the PRC’s proposal would penalize consumers for productivity gains by imposing on them additional rate increases.

²⁹ Willig Declaration, paragraph 27.

³⁰ *Ibid.*, paragraph 14.

59. Simple numerical calculations illustrate how far the PRC’s proposal departs from traditional price cap regulation. Consider the hypothetical case of a product or service produced by a regulated entity for the cost of \$10.00 per unit and sold to consumers at a price of \$11.00. Consider then the following scenarios:
- *Price cap regulation of a private enterprise with a 1 percent per year X factor.* If the private regulated entity reduces cost by 1.5%, this reduction translates into cost savings of 15 cents. Because of the X factor, it must reduce its price by 11 cents, leaving it with additional pretax profits of 4 cents per unit. After paying corporate taxes of 21%, it is left with additional net after tax profit of 3.16 cents per unit.
 - *Price cap regulation of a private enterprise with a 1 percent per year X factor.* If the private regulated entity reduces cost by 2.0%, this reduction translates into cost savings of 20 cents. Because of the X factor, it must reduce its price by 11 cents, leaving it with additional pretax profits of 9 cents per unit. After paying corporate taxes of 21%, it is left with additional net after tax profit of 7.11 cents per unit. Note that under the traditional system of price cap regulation the incremental rewards from more aggressive pursuit of productivity gains are substantial.
 - *Price cap regulation of a private enterprise with no X factor.* If the private regulated entity reduces cost by 1.5%, this reduction translates again into cost savings of 15 cents, leaving it with additional pretax profits of 15 cents per unit. After paying corporate taxes of 21%, it is left with additional net after tax profit of 11.85 cents per unit.
 - *Price cap regulation of the Postal Service under the original PAEA system.* If the Postal Service reduces cost by 1.5%, this reduction translates again into cost savings of 15 cents, leaving it with additional pretax profits of 15 cents per unit. Because it does not pay taxes, it also enjoys additional after-tax profits of 15 cents per unit.³¹
 - *The PRC’s new proposal.* If the Postal Service reduces cost by 1.5%, this reduction translates again into cost savings of 15 cents per unit. As a reward for achieving this gain, the Postal Service is allowed to increase its price by 1%, generating additional pretax profits of 11 cents per unit, leaving it with additional pretax profits of 26 cents per unit. Because it does not pay taxes, it also enjoys additional after tax profits of 26 cents per unit.
60. These calculations illustrate a number of important points. Even under the existing price cap regime, the Postal Service is richly rewarded for the productivity gains it achieves. Its

³¹ Although the Postal Service is nominally liable for payment of taxes on earnings associated with the sale of competitive profits, those savings are actually rebated to the Postal Service. See USPS OIG, “Taxing the Postal Service?” (Sept. 17, 2012) available at <https://www.uspsoig.gov/blog/taxing-postal-service> (explaining that the PAEA requires USPS to compute assumed federal income tax, but that the Postal Service “essentially pays itself” as this “money is transferred from the Competitive Products Fund to the Postal Service Fund.”)

incentives are amplified, relative to those that would face an otherwise comparable regulated private enterprise, both by the absence of any provision for sharing the benefits of productivity increases with consumers and by the Postal Service's exemption from the obligation to pay corporate income taxes. There is little reason to believe that the existing system is insufficiently generous.

61. Third, because the PRC's proposal would base the potential "reward" of additional rate authority on future actions by the Postal Service, it would run counter to one of the primary goals of price cap regulation, which is to focus the attention and efforts of the regulated entity *away* from gaming of the regulatory system, and *towards* the ongoing improvement of its products, technology and operations. As Professor Willig points out, under the PRC's proposal the Postal Service enjoys the same one percent of additional rate authority whether it exceeds the target level of productivity increase by a small amount or a large amount. Because its bottom line reward is so strongly influenced and enhanced by this receipt of this reward, the Postal Service has an incentive to game the system by managing its productivity improvement efforts over time to assure its ability to reap the reward in all years.³² He attributes these perverse incentives to the fact that the PRC proposal operates on an annual, retrospective basis, rather than on the fixed forward-looking basis that typically characterizes price cap regulation.³³
62. Furthermore, the "financial health cycle" argument by which the Commission justifies this element of its proposal suffers from a number of significant flaws. In its Order the Commission implies that once the Postal Service has retained sufficient earnings to make the needed capital investments, productivity gains will subsequently become easier to finance, and thus to achieve. The logical conclusion of the Commission's theory is thus that once it has reentered the financial health cycle, the Postal Service's ability to generate retained earnings, and thus to make subsequent productivity-enhancing investments, will be significantly improved. However, there are a number of flaws in the Commission's arguments.
63. The Commission fails to demonstrate that productivity improvements by the Postal Service have been hindered by a shortage of funds for productivity enhancing investments. The Commission argues that cumulative deficits and exhaustion of its borrowing authority "can restrict the ability to fund capital improvements."³⁴ Nonetheless, in each of the past three years the Postal Service has spent between \$1.3 and 1.4 billion on investments in property and equipment.³⁵ In its latest report to Congress on borrowing authority, the Postal Service

³² Willig Declaration, paragraph 27.

³³ *Ibid.*, paragraph 28.

³⁴ Order 5337 at page 114.

³⁵ Postal Service Form 10-K for 2019, page 54.

indicated plans for \$6.3 billion in capital investments in FY2020.³⁶ Thus, from the Postal Service's own statements it is unclear whether the problem that the Commission's productivity proposal purports to solve is one that actually exists.

64. In addition, the design of the Commission's productivity proposal is logically inconsistent with the justification offered for it. One must assume that any investment forgone due to liquidity constraints would, if they were actually made, generate additional revenues and/or cost savings to cover their costs and provide an adequate investment return. If this condition were not met, there would be no economic justification for carrying out the investments in the first place. But if that condition is met, this would imply that the liquidity problem identified by the Commission is only a temporary constraint created by the fact that the Postal Service has reached its borrowing limit. This reasoning implies that any additional rate authority awarded to address liquidity constraints need only be temporary.³⁷
65. However, rather than grant the increased rate authority temporarily, the Commission has proposed to increase it on annual basis, seemingly in perpetuity.
66. It is also the case that by its very design the productivity proposal put forward by the Commission fails to address the problem that the Commission has argued makes it necessary. This proposal would not immediately provide the Postal Service with any additional resources for funding productivity enhancing capital investments. Instead, it would only reward the Postal Service after the fact for any productivity gains achieved in this way. For this reason the Commission's proposal would not by itself enable the Postal Service to "reenter the financial health cycle." Instead, it would only reward the Postal Service once it had managed to get there on its own.
67. There is, in fact, a risk that the powerful financial incentives embedded in the Commission's proposal could cause the Postal Service to waste funds on uneconomic investments. In a situation in which the Postal Service were at risk of narrowly missing its productivity target, it could fund an investment that made no economic sense on its own, but that nonetheless could provide a small near-term payoff sufficient to push the Postal Service over the necessary threshold, and provide it with the ability to impose a rate increase on market dominant mailers that more than made up for the losses on the otherwise ill-considered investment.

³⁶ See United States Postal Service Fiscal Year 2020 Budget Congressional Submission at II-14, (March 11, 2019) (reporting actual capital investments of \$1.573 billion in FY 2018 and estimated investments of \$1.849 billion in FY 2019 and \$6.302 billion in FY 2020). <https://www.prc.gov/docs/108/108499/USPS%20FY2020%20Congressional%20Submission.pdf>.

³⁷ In fact, it is not even clear that there is any need even for a temporary award of additional rate authority. At the end of FY2019, the Postal Service held \$8.8 billion in unrestricted cash and cash equivalents, and \$4.0 billion in available borrowing authority. See United States Postal Service, 2019 Form 10-K (39, 41).

68. Finally, we question the decision of the Commission to rely on Total Factor Productivity, or TFP, as its measure of productivity change. Although this measure has some theoretical appeal, it has been criticized for its complexity, and more significantly, its lack of transparency. In a recent review of TFP calculations for the Postal Service, Northwest Postal Consulting commented at some length about the lack of transparency of this measure, noting among other things, that there is no documentation that clearly explains how TFP is calculated or how it works; that there is no documentation that explains when and how calculation methodologies change as new labor categories are implemented or, on the output side, as products change; that the results are not prepared in a manner that makes them readily useful or meaningful; and that how it is calculated beyond a general conceptual level is not widely understood.³⁸ These concerns were echoed by Lyudmila Y. Bzhilyanskaya, an econometrician for the Commission, in comments filed in this docket. Dr. Bzhilyanskaya notes that the Postal Service’s annual filing on TFP, contains only a short letter to accompany the spreadsheet, and does not include any documentation with an explanation of the methodology underlying the tables and calculated indexes.³⁹ She also notes that the methodology underlying the TFP indexes calculated on behalf of the Postal Service was developed more than 30 years ago, and questions how relevant the conclusions of the 25-year old PRC TFP Study are to the actual current Postal Service TFP.⁴⁰ In his declaration, Mr. Robert Fisher expands on the concerns listed here.⁴¹
69. A further problem with the use of TFP as a productivity measure is that it is based on a measure of output that includes both the volume of mail delivered, as well as the number of delivery points served.⁴² This measure thus duplicates some of the work that is already being done by the Commission’s proposed density adder.
70. In 2016 the weight placed on delivery point growth in calculating the composite output measure used in the TFP calculation was increased from 28.2 percent to 37 percent, a change whose effect was to noticeably increase output and thus also TFP growth.⁴³ The Northwest Postal Consulting report notes that “there is no documented explanation for this weighting change.”⁴⁴ The fact that an obscure and undocumented technical change of this nature would, under the Commission’s proposal, potentially affect the rates paid by millions of market dominant mailers is, in our view, a significant problem.

³⁸ Northwest Postal Consulting, “Adequacy of the Postal Service’s TFP Model,” March 27, 2017, page 70.

³⁹ Declaration Of Lyudmila Y. Bzhilyanskaya For The Public Representative, RM2017-3, (March 20, 2017), page 5.

⁴⁰ *Ibid.*, page 6.

⁴¹ Declaration of Robert Fisher, Dkt. No. RM2017-3, February 3, 2020.

⁴² Northwest Postal Consulting, “Adequacy of the Postal Service’s TFP Model,” March 27, 2017, page 1.

⁴³ *Ibid.*, page 72.

⁴⁴ *Ibid.*

71. If the Commission is committed to altering the incentives it places on the Postal Service to pursue productivity improvements, we would urge it to drop its current proposal, and instead implement what has become the conventional way to address this issue in the context of price cap regulation. The commission should implement an “X factor” reduction in the amount of price increase authority that it grants to the Postal Service. The size of the X factor should be calibrated to reflect achievable progress by the Postal Service toward reducing the burden of institutional costs covered by market dominant mailers. The huge burden of these costs, incurred to support a massive infrastructure and overhead designed to support a business that has dramatically changed and substantially diminished, is the gravest threat to the Postal Service’s long term financial viability.

KEVIN NEELS
Principal Emeritus

Washington, DC

+1.202.955.5050

Kevin.Neels@affiliate.brattle.com

Dr. Kevin Neels is the former head of the Transportation Practice at the Brattle Group. Dr. Neels has more than 35 years experience as a consultant and expert witness in the rail, trucking, courier, postal, aviation, and automotive industries. He has led many significant engagements relating to competition, market structure, pricing, revenue management, distribution strategy, regulation, and public policy. His work has addressed issues related to system planning, competition policy, privatization, and congestion management.

Prior to joining *The Brattle Group*, and Dr. Neels served as Vice President and leader of the transportation practice at Charles River Associates. He has also served as a researcher in the Urban Policy Program at the Rand Corporation and the Transportation Studies Program at the Urban Institute, as a Director in the Transportation Practice at the consulting firm of Putnam, Hayes & Bartlett, as a Management Consultant in the Transportation Practice of the firm now known as KPMG. Dr. Neels is a former Chairman of the standing Committee on Freight Transportation Economics and Regulation of the Transportation Research Board, an arm of the National Academy of Sciences. He is currently a member of the Transportation Research Board's standing Committee on Airport and Airway Capacity and Delay.

Dr. Neels has published numerous research reports, monographs and articles for peer-reviewed journals. He has often been asked to offer expert testimony in legal and regulatory proceedings. He regularly serves as an invited speaker at conferences and industry forums, and his opinions and observations on industry developments are frequently quoted in the popular and trade press. Dr. Neels earned his Ph.D. from Cornell University.

A sample of the project experience of Dr. Neels is shown below.

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EXPERIENCE

Freight Transportation

- ◆ On behalf of the Railway Supply Institute's Committee on Tank Cars Dr. Neels reviewed the Pipeline and Hazardous Materials Safety Administration's (PHMSA) proposed regulations regarding standards and operational controls for trains and tank cars transporting high-hazard flammable liquids. The primary focus of the proposed regulations, and of Dr. Neels' analysis, was on the rapidly growing use of rail transportation for crude oil from non-conventional production area and its continuing use for ethanol for motor fuel use. He conducted detailed analyses of the geographic structure and growth trends of these markets, and carefully evaluated to the ability of the current and projected tank car fleet to meet their transportation needs. He identified conflicts between the proposed schedule for retrofitting the existing care fleet to meet new proposed new safety standards, and the capacity of the network of existing and proposed modification facilities to carry out the required work in a timely fashion, and compared the economic impacts of the proposed schedule with those of an alternative schedule designed to minimize the down time caused by the upgrade process while prioritizing the upgrading of those portions of the existing fleet posing the greatest safety risks. He also conducted a detailed review of the PHMSA regulatory impact analysis, showing that the agency had underestimated the overall costs of complying with the proposed new regulations while at the same time overstating likely safety benefits. He presented his finding in presentations and written comments with regulatory officials in the U.S. and Canada.
- ◆ Dr. Neels served as the principal competition witness for the acquiring party in a proceeding before the Surface Transportation Board regarding the merger of the two largest short line railroad holding companies in the U.S. In connection with this work he analyzed every point of contain between the rail systems owned by these two companies, an analyzed the competitive implications of placing the combined networks under common control.
- ◆ For an Ex Parte proceeding before the Surface Transportation Board Dr. Neels provided written testimony regarding procedures for settling disputes over the reasonableness of rail transportation rates. His testimony related to aspects of the Standalone Cost methodology employed by the Board in resolving these disputes, focusing in particular on the role that third party traffic plays in such analyses, and the manner in the revenues associated with such traffic are assigned to different portions of the routes followed by such traffic. His testimony discussed the typical structure of North American freight rail networks, and the roles that gathering, branch and main lines play in assuring the overall economic viability of the network as a whole.
- ◆ For a major U.S. based freight railroad, Dr. Neels developed a system of models to predict traffic levels and revenues by carrier for the North American freight rail market under alternative scenarios regarding market structure and regulatory policy. This modeling system incorporated detailed representations of the North American rail and highway networks, algorithms for

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determining shipment routing under alternative operating policies, and a series of statistical models capturing the underlying structure of freight traffic flows.

- ◆ For a non-U.S. government client, Dr. Neels led the team serving as fairness advisors in connection with the privatization of a government owned railroad. This engagement involved review of and commentary upon the bidding procedures employed in the transaction, analysis of the extent to which different bidders addressed and resolved policy concerns expressed by government officials, and advising government officials regarding the extent to which the various bids received reflected the full market value of the operation.
- ◆ On behalf of a provider of services to long-distance trucking firms, Dr. Neels offered expert testimony on the status of the trucking market, and on the extent to which a downturn in that market affected the value and economic viability of trucking firm service providers during a period in which his client concluded a series of acquisitions.
- ◆ In support of a key economic witness in a hearing regarding refined petroleum product pipeline rates before the Federal Energy Regulatory Commission, Dr. Neels conducted an analysis of the relationship between product prices in the different geographic areas linked by the pipeline system. He also examined alternative transportation modes and concentration in the pipeline's origin markets.
- ◆ For a major U.S. railroad involved in a commercial dispute over trackage rights and trackage fees, Dr. Neels conducted a detailed analysis of over-the-track incremental operating costs. This analysis involved, among other things, extensive use of the Uniform Rail Costing System maintained by the Surface Transportation Board.
- ◆ For a major North American rail car manufacturer involved in a patent infringement lawsuit Dr. Neels offered expert testimony on the economic value of an innovative car design relative to existing designs, and on the damages imposed on the manufacturer as a result of infringement of its patents on this new design.

Postal

- ◆ Over a multiyear period Dr. Neels has provided technical analysis and consultation to UPS on a wide range of economic and regulatory issues before the Postal Regulatory Commission. His work has involved detailed analyses and critical reviews of Postal Service costing procedures, provision economic commentary on a wide range of regulatory proposals, review and analysis of Postal Service investment programs, analysis of Postal Service incentives and behavior, and examination of Postal Service impacts on private parcel delivery markets.
- ◆ Dr. Neels was retained by the Public Representative of the Postal Regulatory Commission to provide testimony on the regulatory implications of the service standard cutbacks the U.S. Postal Service was seeking to implement. These service standards were part of a major cost-cutting initiative on the part of the Postal Service. Testimony prepared by Dr. Neels examined

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the price cap regulatory structure established following passage of the Postal Accountability and Enhancement Act in 2006, and explained the played by service standards in this and other price cap regulatory regimes. While acknowledging the severity of the Postal Service's fiscal problems, He argued that under price cap regulation relaxation of mandated service standards was conceptually equivalent to relaxation of the price cap constraint on rates.

- ◆ Dr. Neels provided expert testimony on behalf of a global provider of courier services in an investor dispute filed under an international free trade agreement. This dispute alleged that the respondent national government had granted the national postal operator monopoly control over basic postal services and other special privileges, and then allowed the postal operator to compete with private entities in the competitive courier service market without exercising adequate regulatory oversight to assure that the postal operator complied with the equal treatment provisions of the free trade agreement to which the national government was a signatory. Dr. Neels' work involved a thorough review of the postal operator's pricing and cost allocation procedures. His testimony also defined what equal treatment meant in the context of courier services, and analyzed evidence indicating the extent to which the postal operator was complying with its equal treatment obligations.
- ◆ Following the passage of the Postal Accountability and Enhancement Act (PAEA) on December 20, 2006 Dr. Neels was retained by UPS to provide regulatory consultation and strategic advice regarding the implementation of its provisions. The PAEA substantially changed the regulatory structure under which the U.S. Postal Service operated, dismantling the system of cost-based regulation that had been in place since 1970, and establishing a much looser regulatory framework intended to provide the Postal Service with greater pricing freedom while at the same time maintaining safeguards to protect users of monopoly services and prevent cross-subsidization of competitive services. The Postal Regulatory Commission (formerly the Postal Rate Commission) was charged by the PAEA with developing and maintaining regulations for a modern system of rate regulation, preventing cross-subsidization or other anticompetitive postal practices, promoting transparency and accountability, and adjudicating complaints. During the implementation process the Postal Regulatory Commission conducted hearings, sought comments, and issued a variety of regulations and orders regarding pricing practices, data reporting, administrative procedures and other matters. Dr. Neels assisted UPS in preparing comments, reviewing proposed regulations, and understanding the implications of the new regulatory process for the structure and operation of the product markets within which UPS and the Postal Service competed.
- ◆ In R2006, the last rate case litigated before the Postal Rate Commission before passage of the Postal Accountability and Enhancement Act fundamentally changed the regulatory structure to which the U.S. Postal Service was subject, Dr. Neels again offered testimony on behalf of UPS on issues relating to the structure and variability of mail processing and purchased transportation costs.

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- ◆ In testimony before the U.S. Postal Rate Commission, Dr. Neels offered expert testimony analyzing the procedures used by the U.S. Postal Service to measure the transportation costs associated with its various products. His analysis addressed a wide range of issues, including the Service's use of its dedicated air network for transportation of expedited products, fieldwork procedures used to collect data on composition of the mail stream at different points in the rail network, potential biases in the assignment of transportation costs to products, and flaws in econometric analyses of transportation cost variability introduced by other witnesses in the proceeding.
- ◆ For an express package delivery carrier intervening in a rate case before the U.S. Postal Rate Commission, Dr. Neels conducted a critical review of econometric studies of cost variability introduced into evidence by a witness testifying on behalf of the U.S. Postal Service. He identified a number of serious conceptual and methodological flaws in this analysis, and demonstrated that the substantive conclusions of the analysis were sensitive to relatively minor change in its design. On the basis of his testimony the Commission rejected the arguments of the Postal Service in the Commission's final ruling.

Airline Industry

- ◆ On behalf of a major air carrier Dr. Neels assisted an academic expert in drafting his report and preparing for trial testimony in an antitrust dispute involving global distribution systems for airline, hotel and rental care bookings.
- ◆ For a major U.S. network air carrier Dr. Neels was a key member of a team of consultants charged with the development of an operations research strategy aimed at improving the carrier's performance and competitive standing across a broad range of areas of operation, including financial planning, scheduling, crew management, maintenance, flight operations, air cargo sales, marketing, reservations and distribution. This engagement involved extensive onsite interviews with numerous operating personnel at the carrier's headquarters. It identified a lengthy list of investment opportunities involving the application of a variety of advanced decision support tools.
- ◆ For a major international air carrier accused of monopoly leveraging and attempted monopolization of a key market, Dr. Neels prepared a report analyzing the carrier's use of corporate discounts and travel agent override commissions, and rebutting arguments that these agreements could be construed as exclusive dealing.
- ◆ For a major U.S. air carrier, Dr. Neels conducted an extensive empirical investigation of the responses of travel agents to carriers' incentive and override programs. Using the results of this investigation, he evaluated his client's sales force management and travel agent incentive strategies to identify specific ways in which redesign and or retargeting could increase their net revenue yields.

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- ◆ Working on behalf of a major air carrier in an antitrust case involving allegations of predatory pricing, Dr. Neels worked directly with the lead litigator for the case to develop a strategy to guide discovery. Subsequently, he conducted a variety of econometric analyses measuring the extent to which plaintiffs were harmed by the alleged predation.
- ◆ For a consortium of major U.S. air carriers accused of engaging in collusion and price fixing, Dr. Neels directed a major economic analysis of industry pricing strategy and pricing dynamics. Drawing upon detailed data on daily fare changes, Dr. Neels prepared testimony and exhibits demonstrating the difficulty of engaging in coordinated pricing behavior.
- ◆ In an antitrust dispute in the airline industry, Dr. Neels was retained by the defendant to critique and rebut damage calculations prepared by experts for plaintiffs. Dr. Neels conducted a detailed analysis of the assumptions underlying plaintiff estimates of lost profits, documenting numerous instances in which specific assumptions were contradicted by industry experience or by business plans prepared by the plaintiff prior to litigation. He showed that correcting these errors resulted in dramatic reductions in estimates of plaintiff damages. The case was eventually dismissed without an award of damages.
- ◆ Dr. Neels assisted in the preparation of statistical exhibits and an expert affidavit for submission by a major U.S. carrier in a rulemaking proceeding regarding airline computerized reservation systems conducted by the U.S. Department of Transportation.
- ◆ To support expert testimony in an antitrust case between two major U.S. air carriers, Dr. Neels developed and estimated a set of statistical models for estimating the effects of GDS display bias on the booking patterns and revenues of the affected airlines. As part of this effort Dr. Neels conducted an extensive analysis of the histories of the carriers in questions and of the development of these computerized systems as the primary channel of distribution for airline tickets. He also prepared damage estimates, assisted in the deposition of opposing expert witness, prepared trial exhibits and advised counsel on cross-examination strategy during the course of the trial.

Airport and Airway System

- ◆ Dr. Neels conducted a detailed analysis of the potential benefits of space-based Automatic dependent surveillance—broadcast (ADS-B). This analysis considered a broad range of potential impacts of this new technology, including fuel and other operating costs savings from the enhanced ability of trans-oceanic flights to follow optimal flight trajectories, reductions in delays at the boundaries between procedure and radar controlled airspaces, faster and more precise responses to oceanic air disasters, and more precise and complete coverage of remote terrestrial regions.
- ◆ For the International Air Transport Association, Dr. Neels conducted an analysis and critique of a proposed change in the structure of air traffic control user charges levied on foreign carriers entering the U.S. and overflying its territory. He pointed out a number of serious flaws in the

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empirical analysis that formed the basis for the new system of charges. Implementation of the new charges was halted by a federal judge.

- ◆ Dr. Neels played a critical role in a project for the Air Transport Association (ATA) of the United States to evaluate proposals for reforming the nation's air traffic control (ATC) system and to develop an effective financial and organizational structure for a reformed ATC. The plan, developed under extremely tight deadlines, required an assessment of ATC technological capabilities, estimation of the cost effects of ATC on the airline industry, an economic analysis of current and proposed ATC organizational forms and detailed financial assessment of proposed ATC entities. Dr. Neels presented his analysis and proposal to airline chief executive officers at a meeting of the ATA board.
- ◆ For the public authority responsible for the operation of one of the largest international gateway airports in the country, Dr. Neels conducted a comprehensive review of sources of information on air cargo movements. Based upon the results of this review, he worked with authority staff to devise a strategy for monitoring trends in shipments by ultimate origin and destination, commodity, carrier and type of service, and for factoring this information into an improved process for planning and executing air cargo facility improvements.
- ◆ For the operator of a major U.S. hub airport, Dr. Neels developed a series of forecasting models for use in evaluating likely passenger responses to the introduction of new types of ground access services.
- ◆ For the government of a Mexican province, Dr. Neels developed a framework for use in evaluating proposals for new airport development.
- ◆ For a conference sponsored by the National Academy of Sciences, Dr. Neels analyzed the policy issues raised by proposals for using pricing to manage demand and reduce delays at major airports. His analysis used standard antitrust tools to assess the extent of concentration in the market for airport services, and evaluated the potential for anticompetitive behavior in that market.
- ◆ To support the development of an airport system plan for a major metropolitan area, Dr. Neels prepared long-range activity forecasts for air carriers, regional airlines and general aviation.
- ◆ For an international gateway airport, he evaluated the impacts and effectiveness of a wide range of strategies for reducing delays. The policies considered included regulatory constraints on aircraft size, diversion of service to adjacent airports, a variety of pricing and slot allocation mechanisms, and expansion of facility capacity.

Aerospace Manufacturing

- ◆ For a foreign manufacturer of high-end business jet aircraft Dr. Neels offered testimony on the structure of the market within which these aircraft are sold and the relationship between this market and the market aftermarket retrofits and modifications. His testimony examined the

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turnover of the existing fleet of high end business jet aircraft, trends over time in resale values, the relationship between new aircraft sales and trade-ins of previously owned aircraft, and the factors influencing the commercial success of aftermarket modifications under FAA supplemental types certificates.

- ◆ For a consortium of aerospace manufacturers, Dr. Neels examined and evaluated the economic, financial and policy arguments for including manufacturers as members of government sponsored insurance against war and terrorism risks. His analysis examined the nature of the risks in question, the state of the commercial market for insurance against them, the realities of multi-party tort litigation in settings where the parties enjoy dramatically different levels of insurance coverage, and the likely long-term economic impacts if aerospace manufacturers were because of the shut down of the commercial insurance market, forced involuntarily to self-insure against these risks.
- ◆ For a major manufacturer of business jet aircraft accused of monopoly leveraging and attempted monopolization Dr. Neels conducted an analysis of the structure of the business jet aircraft market, evaluating the extent to which availability of comparable models from other manufacturers constrained the ability of the defendant in the dispute to exercise market power.
- ◆ For a U.S. based manufacturer of business aircraft, Dr. Neels quantified the damages resulting from significant defects in a major subcontractor-supplied aircraft component. These defects had resulted in a number of plane crashes and the eventual grounding of a significant portion of the manufacturer's fleet. Dr. Neels developed a sophisticated econometric model that controlled for the effects of a number of market-related background factors, and isolated the effects of the component defects on sales, revenues and profits.
- ◆ For a manufacturer of high end business jet aircraft involved in a dispute over the closure of a manufacturing plant, Dr. Neels offered expert testimony on the status of the business jet aircraft market at the time of the closure and its effects on new orders, backlog and revenue for the manufacturer. His analysis focused in particular on the effects on the business jet aircraft market of the economic downturn that began in 2001 and the events on September 11, 2001. In response to testimony offered by opposing experts, he also analyzed the decision making process that led to closure of the plant, the options open to management, and the economic justifications for closing the plant.

Automotive Industry

- ◆ For a group of automobile dealers, he conducted an econometric analysis to quantify the extent to which these dealers had suffered economic injury as a result of a scheme in which executives of the auto manufacturer accepted bribes from a subset of dealers in exchange for providing them with extra allotments of highly profitable car models. The settlement of this litigation awarded a payment of several hundred million dollars to the non-bribe paying dealers.

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- ◆ For a major auto manufacturer contemplating litigation over an alleged theft of trade secrets, he developed a system of economic forecasting models to calculate the effects of the theft of sales of the company's products in a number of major international markets. Results of this confidential investigation played a key role in the company's subsequent decision to seek redress through the courts.
- ◆ For a group of automobile dealers engaged in a dispute with a distributor, Dr. Neels offered expert testimony analyzing the new auto allocation procedures used by the distributor, the distributor's policies regarding accessorization of new vehicles, and their economic effects of individual dealers. This work involved extensive econometric modeling of the dynamics of dealer inventories and the determinants of time to sale for individual vehicles.
- ◆ For a consortium of U.S., European and Japanese auto manufacturers and related firms, Dr. Neels played a key role in a major investigation of long-term trends in mobility. This study was worldwide in scope, addressing urban, rural and intercity passenger and freight transportation in both the developed and the developing world. Its particular focus was on the sustainability of the current transportation system, and the extent to which exhaustion of fossil fuels, environmental constraints, infrastructure shortages or institutional barriers were likely to constrain mobility over the next several decades.

Other Project Experience

- ◆ For a public sector toll road development and operation authority Dr. Neels conducted a comprehensive cost benefit analysis of a proposed toll road extension, taking into account construction, maintenance and long term repair and reconstruction costs, value of travel time savings, value of lives saved and injuries avoided, and reductions in auto emissions. He demonstrated that the proposed extension offered significant net social benefits as a standalone project, regardless of whether later phases of the overall project were eventually completed.
- ◆ For an operator of vehicle and passenger ferry services to offshore islands, Dr. Neels conducted a detailed analysis of fares, costs, market structure, the extent to which particular services are subsidized, the structure of the market for ferry services, and the likely effects of changes in conditions of entry.
- ◆ For a major U.S. manufacturer that had been the target of industrial espionage and the organized theft of technology and other trade secrets, Dr. Neels offered testimony involving the stolen technology and, using a reasonable royalties approach, the damages suffered by the U.S. manufacturer as a result of the theft. At the conclusion of a jury trial in the United States, the manufacturer received a substantial damage award.
- ◆ For the U.S. Department of Energy, Dr. Neels conducted an extensive investigation of the technological, institutional and economic factors influencing the demand for residential heating fuels.

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- ◆ For a Gas Research Institute study of natural gas usage in the steel industry, Dr. Neels provided consultation on statistical issues and worked closely with a team of analysts examining the economics of fuel substitution.
- ◆ Dr. Neels directed the team of economists responsible for conduct of the damages study for plaintiff in a major patent infringement lawsuit in the consumer products industry. His work included development of econometric models to forecast product sales in eight major world markets, analysis of the effects of incremental changes in sales volumes on company profits, review of historical pricing strategies and calculation of economic damages for a wide range of “but-for” pricing and product introduction strategies. He and his team also played a key role in the analysis of the case put forth by the opposing side and in the development of cross-examination strategies for opposing expert witnesses. He was designated as an expert witness in this matter, but was not called upon to testify.
- ◆ As leader of a project funded jointly by the Ford Foundation, the U.S. Department of Housing and Urban Development and a consortium of local corporations, Dr. Neels directed a year-long study by the Rand Corporation of strategies for privatizing municipal services in Saint Paul, Minnesota. A major component of this project was a detailed analysis of the incentives created by different financing mechanisms, organizational structures and personnel management systems. Findings of the study were published in a major report entitled *The Entrepreneurial City*.
- ◆ Dr. Neels played a major role in the preparation of expert testimony on behalf of a group of major domestic oil companies accused of conspiring to depress the prices paid to producers of a major input to tertiary oil recovery projects. This testimony focused on an examination of purchase contracts involving the defendants to establish market prices for the input in question over the alleged damage period.
- ◆ For the New York State Science and Technology Foundation, Dr. Neels participated in a project to facilitate the transfer to civilian firms and the commercial exploitation of photonics technology developed for military applications at a research center established at a major New York State military installation. This project included an assessment of the commercial value of the technology, the identification of firms in the vicinity of the research center with the research focus and capabilities to absorb the technology, and the design of institutional mechanisms for facilitating and supporting technology transfer.

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Before the U.S. District Court, District of Maryland, Testimony in the matter of Borman Motor Company Limited Liability Co., et al. vs. American Honda Motor Company Inc., et al. Civil Action MDL-1069, August 1998.

Before the U.S. Postal Rate Commission, Postal Rate and Fee Changes, Docket R97-1. Expert Report and Live Testimony, February 1998.

Before the U.S. District Court, District of Kansas, Testimony in the matter of Timothy Mellon vs. The Cessna Aircraft Company. Civil Action 96-1454-JTM, Expert Report, November 1997.

Before the U.S. District Court, Southern District of New York, Testimony in the matter of Virgin Atlantic Airways Limited vs. British Airways PLC. Civil Action No. 93-7270 (MGC). Affidavit, August 1997.

Before the U.S. District Court, Western District of Pennsylvania, Testimony in the matter of Lazy Oil Co., John B. Andreassi and Thomas A. Miller Oil Co. vs. WITCO Corporation; Quaker State Corporation; Quaker State Oil Refining Corp.; Pennzoil Company; and Pennzoil Products Company. Civil Action No. 94-110E, Class Action. Expert Report, March 1996; live testimony April 28, 1997.

Before the U.S. District Court, Eastern District of Pennsylvania, Testimony in the matter of Stephen M. Clifton and Stephen M. Clifton Ultra Sonoco vs. Sun Refining & Marketing Company. Civil No. 95-CV-7694. Expert Report, February 1997.

Before the U.S. District Court, Northern District of Georgia, Testimony in the matter of ValuJet Airlines, Inc., vs. Trans World Airlines, Inc., and Delta Air Lines, Inc. Civil Action No. 1:95-cv-2896-GET. Expert Report, June 1996.

Before the State of Michigan, Testimony in the matter of Wayne State University, Lumigen, Inc. and A. Paul Schaap vs. Irena Bronstein and Tropix. Circuit Court Case No. 88-804-627CK, Court of Claims Case No. 88-11871CM. December 13, 1994.

Before the U.S. District Court, Central District of California, Testimony in the matter of Blecher &

KEVIN NEELS

Collins vs. Northwest Airlines. Case No. 92-7073-RG (SHx). November 15, 1993.

Before the U.S. District Court, District of Maine, Testimony in the matter of Penobscot Bay Women's Health Center vs. Penobscot Bay Medical Center. Civil Action No. 86-0110-8. July 19, 1990.

February 3, 2020

NICHOLAS E. POWERS

Senior Associate

Washington, DC

+1.202.419.3369

Nicholas.Powers@brattle.com

Dr. Powers specializes in conducting econometric and economic analysis and applying concepts from industrial organization and regulatory economics in competition, regulatory, and other litigation matters.

His broad experience includes estimating cartel impacts in large-scale price-fixing cases, anticompetitive effects resulting from a proposed merger, and price effects of competitor entry and exit in proposed joint ventures. Dr. Powers regularly provides economic analysis of cartel behavior and also has experience analyzing exclusionary practices. Additionally, he conducts similar econometric work in antitrust and regulatory matters in the electric, postal, transportation, and other industries.

Dr. Powers has extensive experience conducting analysis for and submitting expert reports in regulatory proceedings. This includes the extensive analysis of regression-based costing models in the postal industry, econometric analysis of innovative pricing programs in the electric industry, rate of return analysis in the telecommunications industry, and econometric analysis of the renewable fuels market. He has also acted as both an independent evaluator and an advisor to several procurement processes in the electricity sector.

In other energy-related matters, Dr. Powers has conducted several key analyses of price effects, market power, and anticompetitive behavior. He supported expert testimony in three separate litigation proceedings arising from the California electricity crisis of 2000–2001. He has also overseen the statistical analyses in several New Source Review cases and performed damages and other analyses in energy-related litigation proceedings. For the Department of Energy, Dr. Powers coauthored two reports on electric grid infrastructure and approaches to valuation of various grid assets, and for multiple clients he has analyzed retail electric market conditions and regulatory developments. He has also estimated the cost and feasibility of renewables-only energy portfolios.

EDUCATION

- Ph.D., Business Economics, University of Michigan, Ross School of Business, 2010
- B.S., Applied Economics and Management, Cornell University, 2000

AREAS OF EXPERTISE

- Antitrust and Collusion
- Econometric Analysis
- Regulatory Costing Principles
- Transportation
- Electric Industry

EXPERIENCE

Antitrust

- In a large civil case concerning alleged collusion in the corrugated packaging industry, executed the econometric analysis forming the basis of a report critiquing plaintiff's damages estimates. Supported the expert testimony of Nobel laureate Daniel McFadden.
- On behalf of purchasers of air cargo (plaintiffs) in a class action civil suit, conducted econometric and other statistical analyses in order to estimate economic damages from alleged price-fixing. Supported the expert testimony of Nobel laureate Daniel McFadden.
- Advise counsel representing a large multinational industrial firm by estimating overcharges stemming from a series of price-fixing conspiracies covering several input commodities.
- Analyzed the anti-competitive impacts resulting from a proposed merger in the television broadcast industry.
- Performed econometric estimates of the price effects resulting from competitor entry and exit in geographic product markets to support expert testimony that assessed anti-competitive effects from a proposed joint venture in the airline industry.
- Conducted econometric analysis in evaluation of expert testimony that sought to quantify network effects in the payment card industry.
- Identified flaws in the econometric analysis of opposing experts in the context of settlement negotiations arising from price-fixing allegations in the plastics manufacturing industry.
- Oversaw preparation of expert report and quantification of damages, on behalf of plaintiffs, stemming from exclusionary conduct.
- Supported testifying expert, on behalf of plaintiffs, in a competition matter related to vertical restraints.

Regulatory

- On behalf of United Parcel Service, manage analysis and support expert witness in several regulatory dockets before the Postal Regulatory Commission. Apply regulatory economic principles and econometric expertise to detailed knowledge of USPS costing models; provide input on economic arguments and regulatory strategy. Conducted econometric analyses and assisted in the preparation of reports and testimony in a number of Dockets before the Postal Regulatory Commission, including Dockets ACR2014, RM2015-7, RM2016-2, and RM2016-3.

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Coauthored expert report critiquing a proposed change to costing principles in the Purchased Highway Transportation cost segment, in Docket RM2016-12.

- For multiple regulated utilities in Pennsylvania, on multiple occasions, designed and managed the procurement of solar photovoltaic alternative energy credits (SPAECs). Responsibilities included: (i) designing the auction rules and bid forms; (ii) building a financial model to determine the likely value of the solar energy credits; (iii) providing a benchmarking study to determine if the bids were reflective of market fundamentals; and (iv) drafting a report to the Pennsylvania Public Utility Commission to secure approval of the procurements.
- In conjunction with a Commission-mandated time-of-use (“TOU”) pricing pilot, analyze the impacts of TOU prices on peak load and conservation in three Maryland electric utilities. Designed and implemented a matching-based regression methodology.
- For an express package delivery carrier, managed the construction of an integrated Excel-based cost and demand financial forecasting model of the United States Postal Service (USPS), based on public USPS data and filings in previous Postal Regulatory Commission dockets.
- For an expert report submitted as part of a revenue requirements proceeding, benchmarked BC Hydro’s non-fuel operations and maintenance costs against those of U.S. investor-owned utilities.
- Submitted an expert report analyzing the rate of return of a land-based telecommunications network in Alaska for a proceeding before the Federal Communications Commission.
- On behalf of Growth Energy, coauthored a report analyzing the role that higher ethanol blends of gasoline (E85) could play in meeting the proposed 2017 renewable volume obligations (RVOs) under the Renewable Fuel Standards (RFS) program. The report was filed with Growth Energy’s comments in the Environmental Protection Agency’s rulemaking docket regarding proposed renewable fuel standards for 2017.
- Researched alternative rate plans and presented results to senior management of a mid-sized electric utility as part of a regulatory strategy consulting engagement.
- For a mid-Atlantic utility, estimated economic benefits to ratepayers from natural gas service, as portion of eventual PUC filing justifying investments related to storm resilience of distribution system.

Other Energy and Environmental

- For the California parties, conducted several key pieces of analysis evaluating effects of tariff violations in the Summer of 2000 on CAISO market prices and drafted portions of expert testimony, in a litigation matter before the FERC arising from the California electricity crisis.
- For the California parties, conducted econometric analyses detecting the exercise of market power and price discrimination in the 2001 “CERS” period of the California electricity crisis. This analysis formed the basis of key parts of the testimony of two expert witnesses.
- Supervised the analysis for four cases in support of testimony relating to alleged New Source Review (NSR) violations at coal-fired power plants. For a Southeastern power cooperative, analysis of government's claims included examination of alternative baseline emission calculations, analysis of changes in fuel quality, and evaluation of long-run patterns in utilization, generation, and emissions, as well as econometric analysis of the determinants of emissions. For a Midwestern utility, analysis consisted of identifying long-term trends in pricing strategy, market dispatch outcomes, and emissions prices to inform PROMOD runs in order to generate emissions projections that are consistent with NSR regulations. For a Mid-Atlantic utility, the analysis focused on long-run variation in coal plant operations, including analysis of changing market conditions that influenced that variation.
- For a valuation matter concerning a back-office IT services provider to retail energy suppliers, supervised the analysis for and supported industry witness in a report assessing the status and prospects of the retail energy service business in restructured states.
- For the Department of Energy and Pacific Northwest National Laboratory, coauthored a baseline report on electric transmission, distribution, and storage infrastructure in the United States as part of the inaugural Quadrennial Energy Review process.
- For the Department of Energy and Pacific Northwest National Laboratory, coauthored a report on the valuation of electric power systems and technologies as part of the Quadrennial Energy Review process.
- Coauthored a report analyzing the economics and reliability of alternative energy portfolios (approaching 100% renewable power) for the City of Memphis.
- For a Southeastern generation and transmission electric cooperative, oversaw preparation of expert damages report and advised counsel on same in the context of an arbitration proceeding stemming from an alleged breach of contract.

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- Advised a large nonprofit energy buying consortium in a procurement of retail electric service for their members, assessing offers over a variety of products, services, and geographic areas, and assisting in negotiations with several large retail electric suppliers.
- For a utility in the Southeastern United States, conducted a review of NERC region load forecasts. This consisted of econometric analysis to weather-normalize actual loads and evaluate the portion of the forecast error that could be attributed to variations in weather.

Other Litigation

- In a lawsuit brought by the City of Ontario, CA against Los Angeles World Airports, evaluated the reliability of plaintiff's claim for damages in excess of \$3 billion for alleged mismanagement of the Ontario airport.
- For a class of Australian owners of Volkswagen vehicles, analyzed the impact of the diesel emissions issue on resale prices for VW vehicles affected by non-compliant emissions "defeat devices."

PROFESSIONAL AFFILIATIONS

- American Economic Association
- Energy Bar Association

ACADEMIC HONORS AND FELLOWSHIPS

- Thomas W. Leabo Memorial Award (University of Michigan), 2007
- Fred and Barbara Erb Fellowship (University of Michigan), 2005-2009

EXPERT REPORTS AND REGULATORY FILINGS

"Evaluation, Measurement and Verification Plan for the PC44 Time-of-Use Rate Pilots," by Sanem Sergici, Ahmad Faruqui, and Nicholas Powers. Prepared for Maryland Public Service Commission PC44 Rate Design Work Group, June 2018.

"Rate of Return Analysis of GCI's TERRA Network," by William P. Zarakas, Agustin J. Ros, and Nicholas E. Powers. Prepared for GCI Communication Corp., March 2018.

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“Report of Dr. Kevin Neels and Dr. Nicholas Powers to Accompany UPS Comments in Docket No. RM2016-12” (before the Postal Regulatory Commission, related to costing principles in the highway transportation segment), October 2016. Reply Report also submitted.

“Peeking Over the Blendwall: An Analysis of the Proposed 2017 Renewable Volume Obligations,” by Marc Chupka, J. Michael Hagerty, Nicholas E. Powers, and Sarah Germain. Prepared for Growth Energy, July 2016; filed with comments in Docket EPA-HQ-OAR-2016-0004.

ACADEMIC PUBLICATIONS

“Competitive Effects of Exchanges or Sales of Airport Landing Slots,” by James D. Reitzes, Brendan McVeigh, Nicholas E. Powers, and Samuel Moy, *Review of Industrial Organization*, August 2014.

“Measuring the Impact of the Toxics Release Inventory: Evidence from Manufacturing Plant Births,” by Nicholas E. Powers, U.S. Census Bureau Center for Economic Studies Working Paper Series, March 2013.

“Does Disclosure Reduce Pollution? Evidence from India's Green Rating Project,” by Nicholas E. Powers, Allen Blackman, Thomas P. Lyon, and Urvashi Narain, *Environmental and Resource Economics*, March 2011.

“Do State Renewable Portfolio Standards Promote In-state Renewable Generation?” (with Haitao Yin) *Energy Policy*, February 2010.

OTHER REPORTS

“Power to Memphis: Options for a Reliable, Affordable, and Greener Future,” by Jürgen Weiss, Judy Chang, Nicholas E. Powers, and Kai Van Horn. Prepared for Friends of the Earth, January 2019.

“Valuation of Electric Power System Services and Technologies,” by Ira H. Shavel, Michael Hagerty, Nicholas E. Powers, Yingxia Yang, and Roger Lueken. Prepared for the U.S. Department of Energy, Office of Electricity Delivery and Energy Reliability, August 2016.

“Electricity Baseline Report for the US Power System,” by Ira Shavel, J. Michael Hagerty, Nicholas Powers, and Yingxia Yang. Prepared for Pacific Northwest National Laboratory and the Department of Energy, April 2015.

“Developing a Market Vision for MISO - Supporting a Reliable and Efficient Electricity System in the Midcontinent,” by Samuel A. Newell, Kathleen Spees, and Nicholas E. Powers. Prepared for the Midcontinent Independent System Operator, Inc. (MISO), January 2014.

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SELECTED PRESENTATIONS

“The Incremental Cost Test When Technology Choice is Endogenous” at the Center for Research in Regulated Industries Eastern Conference (2018)

“Analyzing the Competitive Effects of Exchanges or Sales of Airport Landing Slots” at the International Industrial Organization Conference (2012)

“The Toxics Release Inventory and Manufacturing Plant Births” at Penn State University (2010), University of Maryland (2010), U.S. Census Center for Economic Studies (2009)

“Does Disclosure Reduce Pollution? Evidence from India's Green Rating Project”, at Association for Public Policy Analysis and Management Fall Conference (2009), Allied Social Sciences Association Annual Meetings (2008), Southern Economics Association Annual Meetings (2007)