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Making the Postal Service Great Again

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The Postal Accountability and Enhancement Act (PAEA) of 2006 mandates that revenues from competitive products cover an "appropriate share" of the Postal Service's "institutional costs," and directs the Postal Regulatory Commission (PRC) to determine and review the level of the appropriate share at least every five years.[1] Institutional costs are the costs that the Postal Service claims it cannot attribute to any single product.[2] The Postal Service does not attempt through its costing methodologies to attribute costs jointly caused by a subset of two or more products (but fewer than all of its products collectively).[3] If the Postal Service did attempt to attribute these "combinatorial costs" to subsets of two more of its products, the enterprise's institutional costs would shrink and would consist exclusively of the costs incurred jointly by all product lines, such as the cost of the Postmaster General's desk.[4] With that fuller extent of possible cost attribution, the controversy over how to fairly allocate the relatively small residual of institutional costs that remained

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[1] Pub. L. No. 109-435, 120 Stat. 3206–07, codified at 39 U.S.C. § 3633(a)–(b).

[2] *See id.* § 3633(a)(3); Postal Regulatory Commission, Notice of Proposed Rulemaking to Evaluate the Institutional Cost Contribution Requirement for Competitive Products, Dkt. No. RM2017-1, 83 Fed. Reg. 6758, 6758 (Feb. 14, 2018) [hereinafter 2018 NPRM in RM2017-1] ("Institutional costs are residual costs that cannot be specifically attributed to either market dominant or competitive products through reliably identified causal relationships.").

[3] *See* 39 U.S.C. § 3633(a). The requirement that each product cover its attributable costs contains an enormous loophole because it does not explicitly require each subset of two of more products to cover the costs that the subset causes jointly. The PRC has refused to interpret section 3633(a) to encompass combinatorial costs. The recent decision in United Parcel Serv., Inc. v. Postal Reg. Comm'n, No. 16-1354 (D.C. Cir. May 22, 2018), confirms that the U.S. Court of Appeals for the D.C. Circuit finds such obstinance permissible under Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, 467 U.S. 837, 842–43 (1984).

[4] *See* Brief for Amicus Curiae J. Gregory Sidak in Support of Petitioner at 16–22, United Parcel Serv., Inc. v. Postal Reg. Comm'n, Nos. 16-1354, 16-1419 (D.C. Cir. Feb. 10, 2017), 2017 WL 550146, at *16–22 [hereinafter 2017 Sidak Amicus Brief].

would subside. But, of course, the controversy appears nowhere close to subsiding.

It is therefore important to understand at the outset that what the Postal Service calls institutional costs are simply what the Postal Service calls institutional costs. The measurement of such costs is a black box. Though obscure, this exercise in regulatory costing is consequential. Under the status quo, the PRC deems institutional costs to be large, and thus the agency ensures that the allocation of costs—among market-dominant products on the one hand, and competitive products on the other hand—will remain an insoluble controversy for as long as the Postal Service continues to exist. The proper identification of institutional costs and the proper contribution that competitive products should make to the Postal Service's recovery of those institutional costs have managed to cause an extraordinary sight in the first several months of 2018: presidential tweets,[5] cable news commentary,[6] and major newspaper analysis[7] addressing arcane questions of postal cost recovery. This is the appropriate share's moment in the sun.

Then, on April 12, 2018, President Trump issued an executive order establishing a "Task Force [that] shall conduct a thorough evaluation of the operations and finances of the [Postal Service],"[8] which the executive order said "is on an unsustainable financial path."[9] President Trump declared: "It shall be the policy of my Administration that the United States postal system operate

[5] @realDonaldTrump, Twitter (Apr. 3, 2018, 6:55 AM), https://twitter.com/realDonaldTrump/status/981168344924536832; @realDonaldTrump, Twitter (Apr. 2, 2018, 6:35 AM), https://twitter.com/realDonaldTrump/status/980800783313702918; @realDonaldTrump, Twitter (Mar. 31, 2018, 5:52 AM), https://twitter.com/realDonaldTrump/status/980065419632566272; @realDonaldTrump, Twitter (Mar. 31, 2018, 5:45 AM), https://twitter.com/realDonaldTrump/status/980063581592047617; @realDonaldTrump, Twitter (Mar. 29, 2018, 4:57 AM), https://twitter.com/realDonaldTrump/status/979326715272065024.

[6] *See, e.g.*, Eugene Kim, *Amazon and UPS Have Been Quietly Fighting Over the Post Office's Cost Structure—Long Before Trump*, CNBC (Apr. 5, 2018), https://www.cnbc.com/2018/04/05/amazon-and-ups-disagree-postal-regulatory-commission-public-filings-post-office-cost-structure.html; Dennis Fitzgerald, *Amazon Volume Not Enough for Postal Service to Avoid Losses*, Fox Bus. (Feb. 14, 2018), https://www.foxbusiness.com/markets/amazon-volume-not-enough-for-postal-service-to-avoid-losses.

[7] *See, e.g.*, Nick Wingfield, *Is Amazon Bad for the Postal Service? Or Its Savior?*, N.Y. Times (Apr. 4, 2018), https://www.nytimes.com/2018/04/04/technology/amazon-postal-service-trump.html; Barney Jopson, *Trump's Battle with Amazon Raises Post Trauma*, Fin. Times (Apr. 6, 2018), https://www.ft.com/content/75da2b2e-3929-11e8-8b98-2f31af407cc8; Steven Pearlstein, *Is the Post Office Making or Losing Money Delivering Amazon Packages?*, Wash. Post (Apr. 9, 2018), https://www.washingtonpost.com/news/wonk/wp/2018/04/04/is-the-post-office-making-or-losing-money-delivering-amazon-packages/?noredirect=on&utm_term=.338d89226a10; Editorial Board, *Trump's Postal Service Audit Is Actually a Welcome Chance for Reform*, Wash. Post (Apr. 17, 2018), https://www.washingtonpost.com/opinions/trumps-postal-service-audit-is-actually-a-welcome-chance-for-reform/2018/04/17/b45f1b10-4276-11e8-8569-26fda6b404c7_story.html?utm_term=.adfed44ee730.

[8] Executive Order on the Task Force on the United States Postal System, Exec. Order No. 13,829, 83 Fed. Reg. 17,281, 17,282 (Apr. 12, 2018) [hereinafter Executive Order on USPS]; *see also* Michael D. Shear, *Trump, Having Denounced Amazon's Shipping Deal, Orders Review of Postal Service*, N.Y. Times (Apr. 12, 2018), https://www.nytimes.com/2018/04/12/us/politics/trump-postal-service-amazon.html; Philip Rucker & Josh Dawsey, *Trump Orders Review of Postal Service's Business Model*, Wash. Post (Apr. 12, 2018), https://www.washingtonpost.com/politics/trump-orders-review-of-postal-services-business-model/2018/04/12/f7affe5e-3ebe-11e8-a7d1-e4efec6389f0_story.html?utm_term=.e89ae154e440.

[9] Executive Order on USPS, *supra* note 8, § 1(a).

under a sustainable business model to provide necessary mail services to citizens and businesses, and to compete fairly in commercial markets."[10] The task force created by the executive order shall evaluate, among other things, "the expansion and pricing of the package delivery market and the USPS's role in competitive markets[,]" "the decline in mail volume and its implications for USPS self-financing and the USPS monopoly over letter delivery and mailboxes[,]" and "the state of the USPS business model, workforce, operations, costs, and pricing."[11] President Trump's April 2018 executive order underscores that the PRC cannot ignore, in its relatively arcane and compartmentalized regulatory dockets, the larger question of whether the Postal Service can plausibly survive in a future of declining volumes of letter mail.

In its first review of the appropriate share in 2012, the Commission decided to maintain the appropriate share at its initial level of 5.5 percent.[12] In other words, the PRC determined that the Postal Service was obligated to price its competitive products such that they would generate enough free cash flow to pay for not less than 5.5 percent of the Postal Service's institutional costs. I have previously filed an initial declaration and a reply declaration on behalf of United Parcel Service (UPS) in the PRC's 2018 rulemaking proceeding on this topic.[13] In my initial declaration, filed in 2016, I explained that the PRC's 2012 analysis was flawed, and that the Commission relied upon a now-outdated and erroneous understanding of the Postal Service's business model.[14] In my reply declaration in that docket, filed in 2017,[15] I principally challenged the opinions that Professor John Panzar expressed in his declaration on behalf of Amazon that "the Commission should eliminate the minimum contribution requirement"[16] altogether, a position that the Postal Service echoed in its submission.[17]

10 *Id.* § 1(b).

11 *Id.* § 3.

12 Postal Regulatory Commission, Order Reviewing Competitive Products' Appropriate Share Contribution to Institutional Costs, Dkt. No. RM2012-3, at 5, 27 (Aug. 23, 2012) [hereinafter PRC, 2012 Appropriate Share Review], https://www.prc.gov/docs/85/85017/Order_1449.pdf.

13 Declaration of J. Gregory Sidak on Behalf of United Parcel Service, Institutional Cost Contribution Requirement for Competitive Products, Postal Regulatory Commission, Dkt. No. RM2017-1 (Jan. 23, 2017) [hereinafter 2017 Sidak Initial Declaration]; Reply Declaration of J. Gregory Sidak on Behalf of United Parcel Service, Institutional Cost Contribution Requirement for Competitive Products, Postal Regulatory Commission, Dkt. No. RM2017-1 (Mar. 9, 2017) [hereinafter 2017 Sidak Reply Declaration].

14 *See* 2017 Sidak Initial Declaration, *supra* note 13.

15 *See* 2017 Sidak Reply Declaration, *supra* note 13 (discussing Declaration of John C. Panzar for Amazon Fulfillment Services, Inc., Institutional Cost Contribution Requirement for Competitive Products, Postal Regulatory Commission, Dkt. No. RM2017-1 (filed Jan. 23, 2017) [hereinafter 2017 Panzar Initial Declaration]).

16 2017 Panzar Initial Declaration, *supra* note 15, at 2.

17 *See* Initial Comments of the United States Postal Service at 1, Institutional Cost Contribution Requirement for Competitive Products, Postal Regulatory Commission, Dkt. No. RM2017-1 (filed Jan. 23, 2017) ("The current state of the competitive delivery market provides no basis for an appropriate share requirement at this time, and certainly not for one higher than the current 5.5 [percent] level.").

The Postal Service also said in 2017 that its "competitive products have consistently contributed more than 5.5 percent to institutional costs [from 2012 to 2016]."[18] In fiscal year 2017, competitive products supposedly covered 23.2 percent of the Postal Service's institutional costs.[19] Some mislabel that 23.2-percent figure as a "surcharge" that the Postal Service was supposedly obliged to apply to its competitive products.[20] That characterization is false. The 23.2-percent contribution was a discretionary allocation that the Postal Service decided to make, and exceeded the mandatory 5.5-percent contribution that the PRC had established. Given that competitive products accounted for nearly 30 percent of the Postal Service's revenue in fiscal year 2017,[21] it is entirely plausible that, if properly measured, the appropriate share of institutional cost recovery for competitive products would exceed 23.2 percent.

On February 14, 2018, the PRC issued a notice of proposed rulemaking (NPRM) for conducting its second statutorily mandated review of the Postal Service's appropriate-share requirement.[22] The NPRM proposes that "a formula be used to calculate the minimum amount that competitive products as a whole are required to contribute to institutional costs annually (i.e., the appropriate share)."[23] I analyze in this article the PRC's formula-based approach and explain why the proposed rule is unscientific and unreliable as an economic matter.

Before one delves into the flaws of the 2018 NPRM, it is important to recognize what the PRC does not do. It does not ask more generally, "What are good regulatory regimes to adopt?" In its 2018 NPRM, the PRC does not cite, let alone incorporate, major insights from the rich literature on the economics of regulation. For example, Jean Tirole won the Nobel Prize in economics in 2014 in part for his scholarship analyzing the asymmetric exchange of information between regulators and the firms that they regulate.[24] Part of Tirole's insight is that incentive regulation works best when

18 *Id.* at 18.

19 2018 NPRM in RM2017-1, *supra* note 2, at 52 tbl.IV-7.

20 *See* Pearlstein, *supra* note 7 ("Currently, the way the Postal Service calculates its package-delivery costs is to start with the incremental costs directly attributable with package delivery, or any of its 'competitive' business lines, and then add an 'appropriate' surcharge to cover common, or institutional, costs. For all of the Postal Service's competitive lines of business, including third-class mail and package delivery, this surcharge now covers 23.2 percent of all of the Postal Service's common costs, significantly higher than the minimum 5.5 percent level required by federal law.").

21 *See* U.S. Postal Service, Final Revenue, Pieces, and Weight by Classes of Mail and Special Services for Fiscal Year 4–5 (2017), http://about.usps.com/who-we-are/financials/revenue-pieces-weight-reports/fy2017.pdf.

22 2018 NPRM in RM2017-1, *supra* note 2.

23 *Id.* at 6758.

24 *See* Royal Swedish Academy of Sciences, Scientific Background on the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2014: Jean Tirole: Market Power and Regulation 2–3 (2014), https://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/2014/advanced-economicsciences2014.pdf.

the regulator provides options from which the regulated firm can choose, because such regulation enables the regulated firm to reveal its preferences and reduce the information asymmetry between the regulator and the regulated firm.[25] Other economists—including prior Nobel laureates George Stigler,[26] Oliver Williamson,[27] and Michael Spence,[28] as well as Paul Joskow,[29] William Baumol,[30] Richard Schmalensee,[31] David Sappington and Dennis Weisman,[32] and Ian Bradley and Catherine Price[33]—have contributed other important insights on incentive regulation. The PRC might have honed a more economically sound methodology in its 2018 NPRM had it engaged with that scholarly literature.[34]

I begin, in Part I of this article, by explaining that the PRC's continued mischaracterization in its 2018 NPRM of the findings by the Federal Trade Commission (FTC) in 2007 on the net economic effect of the statutory monopolies enjoyed by the Postal Service[35] is so egregious as to be arbitrary and capricious, unsupported by substantial evidence, and clearly erroneous. Despite acknowledging that "prevailing competitive conditions in the market and market uncertainties . . . have changed since FY 2007,"[36] the Commission continues to mischaracterize and rely on the incomplete and outdated analysis contained in the FTC's 2007 report to support the PRC's conclusion that, notwithstanding its right to exploit statutory monopolies, the Postal Service

25 *See* Royal Swedish Academy of Sciences, *supra* note 24, at 6–10; Jean-Jacques Laffont & Jean Tirole, *Using Cost Observation to Regulate Firms*, 94 J. Pol. Econ. 614, 636 (1986). For Tirole's own nontechnical explanation of this insight, see Jean Tirole, Economics for the Common Good 456–57, 462–63 (Princeton Univ. Press 2017).

26 George J. Stigler, *The Theory of Economic Regulation*, 2 Bell J. Econ. & Mgmt. Sci. 3 (1971).

27 Oliver E. Williamson, *Franchise Bidding for Natural Monopoly—In General and with Respect to CATV*, 7 Bell J. Econ. & Mgmt. Sci. 73 (1976).

28 A. Michael Spence, *Monopoly, Quality and Regulation*, 6 Bell J. Econ. & Mgmt. Sci. 417 (1975).

29 Paul L. Joskow, *Incentive Regulation in Theory and Practice: Electricity Distribution and Transmission Networks*, *in* Economic Regulation and Its Reform: What Have We Learned? 291 (Nancy L. Rose ed., Univ. of Chicago Press 2014).

30 William J. Baumol, *Productivity Incentive Clauses and Rate Adjustment for Inflation*, 110 Pub. Util. Fort. 11 (1982).

31 Richard Schmalensee, *Good Regulatory Regimes*, 20 RAND J. Econ. 417 (1989).

32 David E.M. Sappington & Dennis L. Weisman, *Designing Superior Incentive Regulation: Modifying Plans to Preclude Recontracting and Promote Performance*, 132 Pub. Util. Fort. 27 (1994); *see also* David E.M. Sappington & Dennis L. Weisman, Designing Incentive Regulation for the Telecommunications Industry (MIT Press & AEI Press 1996).

33 Ian Bradley & Catherine Price, *The Economic Regulation of Private Industries by Price Constraints*, 37 J. Indus. Econ. 99 (1988).

34 I have previously written that the PRC could converge on a profit-maximizing price for the Postal Service's competitive products by gradually increasing the prices for those products and observing empirically the corresponding change in the Postal Service's profits. *See* J. Gregory Sidak, *Maximizing the U.S. Postal Service's Profits from Competitive Products*, 11 J. Competition L. & Econ. 617, 657–66 (2015).

35 Federal Trade Commission, Accounting for Laws That Apply Differently to the United States Postal Service and Its Private Competitors (2007) [hereinafter FTC, Accounting for Laws], https://www.ftc.gov/sites/default/files/documents/reports/accounting-laws-apply-differently-united-states-postal-service-and-its-private-competitors-report/080116postal.pdf.

36 2018 NPRM in RM2017-1, *supra* note 2, at 6766.

operates at a competitive disadvantage *in 2018*.[37] By erecting its proposed rule in 2018 on that false foundation and by ignoring its own published estimates to the contrary, the Commission, to borrow a phrase from the late Judge Robert Bork, has "done a remarkable job of rebutting the presumption of its own expertise."[38]

In Part II, I summarize the PRC's proposed formula-based approach for calculating the Postal Service's appropriate-share requirement. The PRC's proposed formula is unsound and unscientific as a matter of economic analysis. Its components are individually unreliable and misleading.

In Part III, I explain that the Lerner Index, when properly used to measure a firm's market power, assumes that the firm in question seeks to maximize profits. As I have written previously, it is not credible for the PRC or anyone else to call the Postal Service a profit maximizer. To propose a rule that relies on the Lerner Index, as the PRC purports to do in its 2018 NPRM, the PRC first must prove that the Postal Service maximizes profits. That proof is impossible for the Commission to deliver. The Postal Service has incurred losses for more than a decade. Rather than having an incentive to maximize profit, the Postal Service far more plausibly has the incentive to expand its scale *at the expense of earning maximum profit*.[39] I also explain that the PRC's calculation of its proposed "Postal Service Lerner Index" for competitive products in aggregate would necessarily distort the measurement of market power for any individual competitive product. Likewise, even for a single product, a single measure of the Lerner Index is misleading if the firm in question faces high levels of peak demand but lower levels of baseline demand—as is certainly the case for the Postal Service, given the cyclicality of package volumes during the year. Moreover, the PRC's proposal to use average revenue per unit as a proxy for price would violate the requirements of a properly calculated Lerner Index and would necessarily produce misleading and unreliable results.

In Part IV, I explain that the PRC's measure of its proposed "Competitive Market Output" is also unsound on economic grounds. Entry by large retailers through vertical integration (in the form of self-delivery, ship-to-store delivery, or delivery to designated pickup locations) might reduce the PRC's proposed measure of Competitive Market Output without actually changing the volume of last-mile delivery. In that case, the PRC's Competitive Market Output measure would fail to capture dynamic changes in the market.

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[37] *Id.* at 6786 ("[T]he Commission concludes that the FTC's finding that the Postal Service operates with a net economic disadvantage in offering competitive products continues to be valid.").

[38] Alltel Corp. v. FCC, 838 F.2d 551, 562 (D.C. Cir. 1988) (Bork, J.).

[39] *See* Sidak, *Maximizing the U.S. Postal Service's Profits from Competitive Products*, *supra* note 34, at 662; David E.M. Sappington & J. Gregory Sidak, *Are Public Enterprises the Only Credible Predators?*, 67 U. Chi. L. Rev. 271, 285–86 (1999); David E.M. Sappington & J. Gregory Sidak, *Competition Law for State-Owned Enterprises*, 71 Antitrust L.J. 479, 505 (2003).

Moreover, measuring output on the basis of revenue rather than volume (that is, the number of units of the product or service sold) could produce scenarios in which the Postal Service's delivery volume (and its competitors' delivery volumes) for competitive products rises despite the appearance of a decreasing Competitive Market Output (as measured by revenue). Using revenue as a measure of industry output would also be inconsistent with the volume-based methodologies that other U.S. regulatory agencies have adopted in analyzing competitive conditions in network industries.

More important, I explain in Part V that the PRC offers no economic justification for the peculiar configuration of its proposed formula. From an economic perspective, the PRC's decision to weight its Postal Service Lerner Index and its Competitive Market Output equally is utterly arbitrary. It has no theoretical or empirical foundation in economics. It is unscientific. There is similarly no economic justification for the PRC's decision to ignore (or to give zero weight to) other standard economic measures of competitive conditions, including barriers to entry and the rate of innovation. The calculation of the Postal Service's appropriate-share requirement should be grounded in sound economic analysis, not *ad hoc* weights that the PRC applies to vaguely defined or poorly calculated variables. Moreover, the PRC fails to demonstrate that its recursive formulation would not produce an appropriate-share requirement that is either so high as to drive the Postal Service from the market for competitive products or so low as to write the appropriate-share requirement out of the statute.

I explain in Part VI that, contrary to the PRC's conclusions in its 2018 NPRM, the PRC's proposed formula fails to capture the prevailing competitive conditions in the package-delivery industry. I demonstrate that neither the Postal Service Lerner Index nor the Competitive Market Output has a direct causal relationship with the Postal Service's competitive advantage, with changes in the Postal Service's market share, or with changes in the market and competitors.

I explain in Part VII that the PRC's responses (in section VI of its 2018 NPRM) to my previous submission are so nonresponsive, erroneous, and unsupported as to be arbitrary and capricious. The PRC fails to provide a meaningful response to my arguments concerning the Postal Service's competitive advantage, the Postal Service's failure to attribute combinatorial costs, the Postal Service's incentive to price competitive products below the level of a profit-maximizing firm, and the harm to market-dominant mailers and the harm to dynamic competition caused by the Postal Service's inefficient pricing of competitive products.

As a final matter, in Part VIII, I explain that the Postal Service's and Amazon's recommendations that the PRC should eliminate the appropriate-share requirement rests on erroneous assumptions. Both the Postal

Service and Amazon incorrectly assume (1) that the Postal Service operates at a competitive disadvantage relative to private competitors and (2) that competitive conditions weigh in favor of eliminating the appropriate-share requirement. In addition, Amazon makes the arbitrary assumption that an increased appropriate-share requirement would necessarily suppress price competition by forcing the Postal Service to raise the prices of its competitive products. Neither the Postal Service nor Amazon provides a sound economic explanation for making those assumptions. Consequently, their recommendations to the PRC are unreliable and unhelpful.

I. The PRC's False Characterization in 2018 of the Conclusions and Relevance of the FTC's 2007 Report on the Postal Service's Competitive Advantage

The PRC's characterization in its 2018 NPRM of the FTC's 2007 report, "Accounting for Laws That Apply Differently to the United States Postal Service and Its Private Competitors,"[40] is clearly erroneous. Consequently, any analysis by the PRC in its 2018 NPRM that relies on the agency's mischaracterization of the FTC's 2007 report is also clearly erroneous, if not also arbitrary and capricious, and unsupported by substantial evidence.

The PRC cites the FTC's 2007 report to support its conclusion that "the FTC's finding that the Postal Service operates with a net economic disadvantage in offering competitive products continues to be valid."[41] I have previously submitted comments to the PRC explaining why the PRC's characterization of the FTC's 2007 findings was false, misleading, and incomplete in the PRC's first review of the Postal Service's appropriate-share requirement.[42] The Commission ignored that explanation and, in its 2018 NPRM, it continues to mischaracterize the FTC's 2007 findings.

In its 2018 NPRM, the PRC summarizes the FTC's findings in the following three sentences:

> In accounting for the differences between the various implicit subsidies and legal constraints placed on competitive products due to the Postal Service's unique legal status, the FTC determined that the Postal Service's costs were $330 million to $782 million higher than they would be otherwise, while the implicit subsidies the Postal Service enjoyed totaled $39 million to $117 million. Therefore, the FTC determined the Postal Service incurred costs between $213 million to $743 million higher due to its legal status. As a result, the FTC concluded that the Postal Service's unique legal status

[40] FTC, Accounting for Laws, *supra* note 35.
[41] 2018 NPRM in RM2017-1, *supra* note 2, at 6780.
[42] 2017 Sidak Initial Declaration, *supra* note 13, at 5–7.

causes it to have a net competitive disadvantage relative to its private competitors.[43]

That summary is incomplete and misleading. The FTC reported that conclusion in 2007 with the significant caveat that it had excluded key Postal Service benefits that the FTC could not quantify.[44] Those unquantifiable benefits included "the ability to acquire property through eminent domain, disparate customs treatment, the use of highways from which commercial vehicles are restricted, . . . the ability to take advantage of the FTCA [Federal Tort Claims Act]," and, most notably, the "postal and the mailbox monopolies."[45]

The PRC's failure to acknowledge the FTC's 2007 caveat in the 2018 NPRM is materially misleading because the PRC *itself* has quantified both the value of the postal monopoly and the value of the letter-box monopoly.[46] The PRC first disclosed third-party estimates of those values in a 2008 report.[47] In every subsequent year, the PRC itself has quantified the values of the postal and letter-box monopolies, and it has produced those updated estimates in its *Annual Report to the President and Congress*.[48] In the latest of

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43 2018 NPRM in RM2017-1, *supra* note 2, at 6775 (citing FTC, Accounting for Laws, *supra* note 35, at 64).

44 FTC, Accounting for Laws, *supra* note 35, at 64 ("[The Postal Service's] legal constraints still would cause it to incur costs that are $213–$743 million higher than they might otherwise be, with the caveat that this range is based only on estimates of those burdens and benefits that we have been able to quantify.").

45 *Id.*

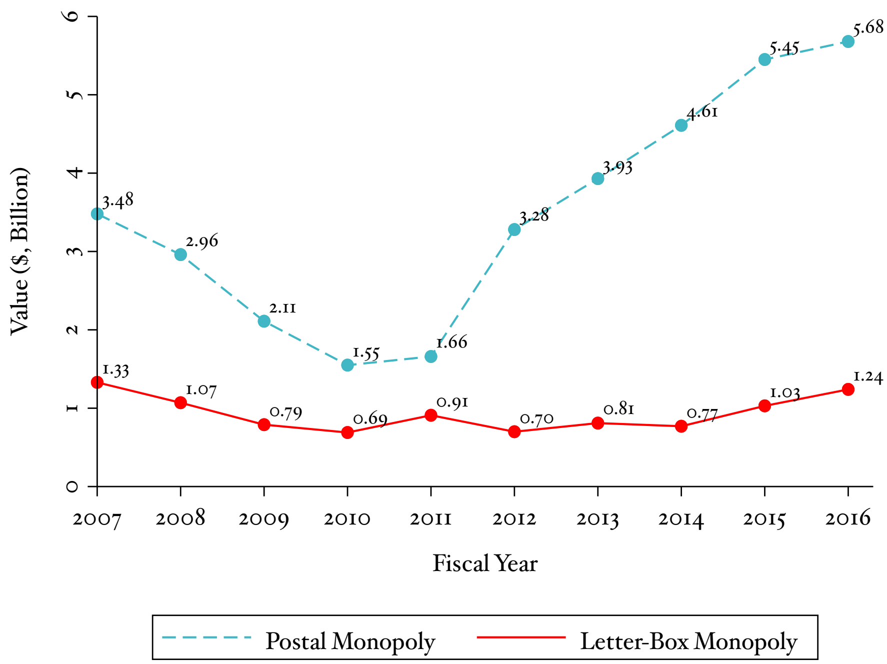
46 The PRC defines the value of its postal monopoly as "an estimate of the profit that the Postal Service would lose if both the mailbox and letter monopolies were lifted, and the Postal Service were subject to competition for mail currently covered by the postal monopoly." Postal Regulatory Commission, Annual Report to the President and Congress: Fiscal Year 2017, at 54 (2018) [hereinafter PRC, FY 2017 Annual Report to the President and Congress], https://www.prc.gov/docs/103/103595/PRC%20FY%202017%20Annual%20Report.pdf. The PRC defines the mailbox (letter-box) monopoly as "the Postal Service's exclusive right to deliver to and collect from mailboxes," and it defines the letter monopoly as "the Postal Service's exclusive right to carry and deliver most addressed, paper-based correspondence." *Id.*

47 Postal Regulatory Commission, Report on Universal Postal Service and the Postal Monopoly 143–44 (2008), https://www.prc.gov/Docs/61/61628/USO%20Report.pdf.

48 Postal Regulatory Commission, Annual Report to the President and Congress: Fiscal Year 2009, at 30–32 (2010) [hereinafter PRC, FY 2009 Annual Report to the President and Congress], https://www.prc.gov/sites/default/files/reports/Annual%20Rpt_2009_456.pdf; Postal Regulatory Commission, Annual Report to the President and Congress: Fiscal Year 2010, at 30–31 (2010), https://www.prc.gov/docs/71/71322/PRC_AR_2010_highres_1558.pdf; Postal Regulatory Commission, Annual Report to the President and Congress: Fiscal Year 2011, at 43 (2011), https://www.prc.gov/docs/78/78904/PRC_AR_2011_FINALVERSION_2350.pdf; Postal Regulatory Commission, Annual Report to the President and Congress: Fiscal Year 2012, at 39–40 (2013) [hereinafter PRC, FY 2012 Annual Report to the President and Congress], https://www.prc.gov/docs/86/86069/PRC_2012_Annual_Report_w-links.pdf; Postal Regulatory Commission, Annual Report to the President and Congress: Fiscal Year 2013, at 31–32 (2014), https://www.prc.gov/docs/88/88871/AR2013%20FINAL-REVISED%20PDF%20(2)_3465.pdf; Postal Regulatory Commission, Annual Report to the President and Congress: Fiscal Year 2014, at 47–48 (2015), https://www.prc.gov/sites/default/files/reports/PRC-Annual-Report-2014-Online.pdf; Postal Regulatory Commission, Annual Report to the President and Congress: Fiscal Year 2015, at 48 (2016), https://www.prc.gov/sites/default/files/reports/PRC%20Annual%20Report%20FY%202015.pdf; Postal Regulatory Commission, Annual Report to the President and Congress: Fiscal Year 2016, at 48 (2017), https://www.prc.gov/sites/default/files/reports/2016%20Annual%20Report%20Final.pdf; PRC, FY 2017 Annual Report to the President and Congress, *supra* note 46, at 54.

those reports (filed on January 26, 2018, approximately one week before the Commission issued its 2018 NPRM), the PRC said that it now estimates the value of the postal monopoly in fiscal year 2016 to have been $5.68 billion.[49] Of that $5.68 billion of estimated value, the PRC attributed $1.24 billion to the value of the letter-box monopoly.[50] Figure 1 reports the PRC's estimated values of the postal and letter-box monopolies from fiscal year 2007 to fiscal year 2016.

Figure 1. The Value of the Postal Monopoly and the Value of the Letter-Box Monopoly from Fiscal Year 2007 to Fiscal Year 2016, as Reported by the PRC



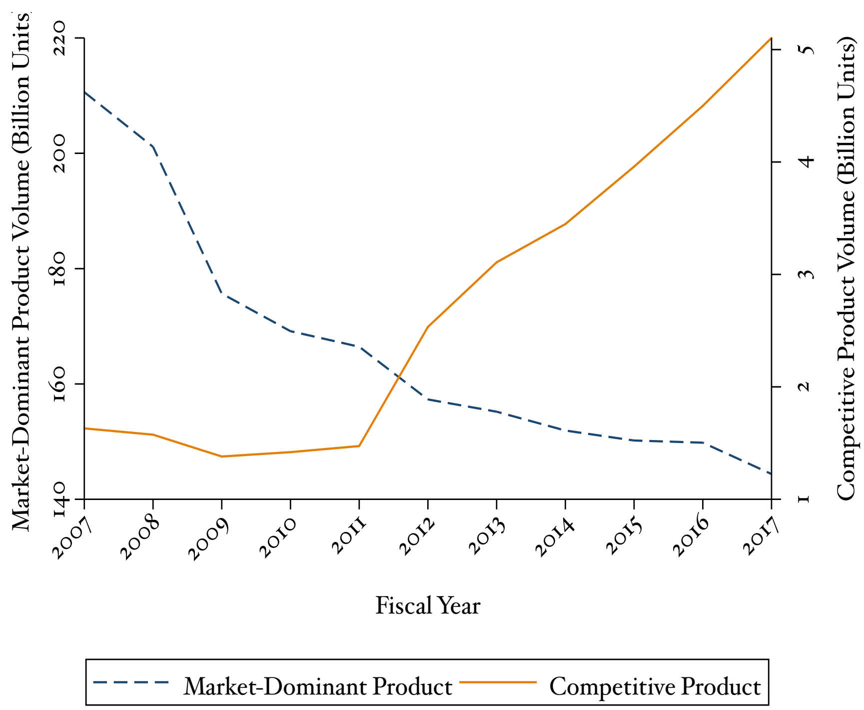
Sources: PRC, FY 2017 Annual Report to the President and Congress, *supra* note 46, at 54; PRC, FY 2012 Annual Report to the President and Congress, *supra* note 48, at 40; PRC, FY 2009 Annual Report to the President and Congress, *supra* note 48, at 32.

As Figure 1 shows, the PRC's estimated value of the postal monopoly increased rapidly beginning in fiscal year 2011. Likewise, the PRC's estimated value of the letter-box monopoly increased (although more moderately) after fiscal year 2012. It is worth noting that, although the PRC's estimated value of the postal and letter-box monopolies increased from fiscal year 2012 to

49 PRC, FY 2017 Annual Report to the President and Congress, *supra* note 46, at 54.
50 *Id.*

fiscal year 2016, the Postal Service's unit volume of market-dominant products fell and its unit volume of competitive products rose.[51] Figure 2 reports the Postal Service's annual volume from market-dominant products and its annual volume from competitive products from fiscal year 2007 to fiscal year 2017.

Figure 2. The Postal Service's Volume from Market-Dominant Products and Volume from Competitive Products, Fiscal Year 2007 to Fiscal Year 2017, as Reported by the PRC



Sources: Postal Regulatory Commission, Library Reference PRC-LR-RM2017-1/1—Order No. 4402 Supporting Data and Sources, Dkt. No. RM2017-1, at tab 3 ("Postal Service Volume Data") (Feb. 8, 2018), https://www.prc.gov/dockets/document/103726.

That the increase in the value of the postal and letter-box monopolies coincided with an increase in competitive-product volume (and a decrease in market-dominant volume) indicates that the value of the postal and letter-box monopolies has increasingly accrued to the Postal Service's competitive products. Consequently, it is highly plausible that the value of the postal and letter-box monopolies that accrues to the Postal Service's competitive

[51] President Trump's April 2018 executive order notes "the steep decline in First-Class Mail volume." Executive Order on USPS, *supra* note 8, § 1(a).

products exceeds the net disadvantage that the FTC identified in its 2007 analysis.

That conjecture comports with the findings of third-party analyses. In a 2018 white paper commissioned by UPS, Dr. Robert Shapiro estimated the value of the Postal Service's letter-box monopoly attributable to *competitive products alone* to be $3.9 billion in fiscal year 2016,[52] which exceeds by more than three times the PRC's reported estimate of the value of the letter-box monopoly attributable to *all products* ($1.24 billion),[53] and by more than five times the FTC's 2007 upper-bound estimate of the Postal Service's competitive disadvantage ($743 million).[54] Moreover, the Office of Inspector General (OIG) for the Postal Service estimated in 2011 that (1) delivery to centralized letter boxes in cities costs the Postal Service $160.51 per delivery point, per year, (2) delivery to a curbside letter box in cities costs $224.09 per delivery point, per year, and (3) delivery to a customer's door in cities costs $353.02 per delivery point, per year.[55] In other words, as of 2011 it would have cost the Postal Service between 1.58 and 2.20 times as much to deliver to the recipient's door—as private competitors do—than to deliver to the recipient's letter box.[56] Had the PRC attempted to account for those benefits in its 2018 NPRM, it would have found (contrary to the conclusions reported in the NPRM) that the Postal Service experienced a net *advantage* relative to its private competitors.

The PRC acknowledges in its 2018 NPRM that "section 703 [of the PAEA] direct[s] the Commission, when revising regulations under 39 U.S.C. [§] 3633, to consider the FTC's recommendations as well as subsequent events that affect the continuing validity of the FTC's net economic effect finding."[57] However, the PRC implausibly construes "subsequent events" in its 2018 NPRM to include only changes *in the law* since the FTC's 2007 report:

52 Declaration of Robert J. Shapiro at 2, Institutional Cost Contribution Requirement for Competitive Products, Postal Regulatory Commission, Dkt. No. RM2017-1 (Apr. 16, 2018) [hereinafter Shapiro Declaration].

53 That is, $3.9 billion ÷ $1.24 billion = 3.15.

54 That is, $3.9 billion ÷ $743 million = 5.25. This discrepancy is even greater if one compares Dr. Shapiro's 2018 estimate of the value of the letter-box monopoly attributable to competitive products with the PRC's upper-bound estimate of the "updated" net economic effect of $730 million (that is, $3.9 billion ÷ $730 million = 5.34) found in its 2018 NPRM. *See* 2018 NPRM in RM2017-1, *supra* note 2, at 6777.

55 U.S. Postal Service Office of Inspector General, DR-AR-11-006, Audit Report on Modes of Delivery 9 (2011), https://www.uspsoig.gov/sites/default/files/document-library-files/2015/DR-AR-11-006.pdf.

56 That is, $353.02 ÷ $160.51 = 2.20, and $353.02 ÷ $224.09 = 1.58.

57 2018 NPRM in RM2017-1, *supra* note 2, at 6774; *see also* Pub. L. 109-435, 120 Stat. 3244, § 703(d) (2006) ("The Postal Regulatory Commission shall take into account the recommendations of the Federal Trade Commission, and subsequent events that affect the continuing validity of the estimate of the net economic effect, in promulgating or revising the regulations required under section 3633 of title 39, United States Code.").

> The FTC's net economic effect finding was based on the implicit subsidies and legal constraints that the FTC could quantify, each of which was linked to specific federal or state laws. Therefore, the Commission determines [that] 'subsequent event' in section 703(d) refers to changes to federal or state laws quantified in the FTC's estimate of the net economic effect. As a result, the Commission finds the scope of its review under section 703(d) is limited to considering whether the laws behind the implicit subsidies and legal constraints *quantified* by the FTC have changed since the FTC Report's issuance, and if so, whether those changes affect the continuing validity of the FTC's estimate of the net economic effect of those laws.[58]

In the PRC's tortured reading of section 703, Congress inexplicably cares not a whit about how "subsequent events" of an *economic* nature "affect the continuing validity of the [FTC's 2007] estimate of the net *economic* effect" of the postal monopolies.[59] That reasoning is mendacious.

The PRC does purport to perform a "supplementary analysis" in its 2018 NPRM to update its estimate of the costs that unique statutory constraints impose on the Postal Service.[60] But, when the Commission calculates its "updated estimated *net* economic effect,"[61] it conspicuously neglects to update its estimate of the unique statutory benefits that the Postal Service enjoys, or to reference its own estimates of the value of the postal and letter-box monopolies that it has reported to Congress every year since January 2010. The resulting calculation in the PRC's 2018 NPRM is an exercise in cherry picking, because it ignores changes in the value of the Postal Service's statutory benefits.

In sum, the PRC's mischaracterization in 2018 of the FTC's 2007 report continues to be false, misleading, and unscientific. Substantial evidence indicates that the Postal Service has benefitted from its postal and letter-box monopolies in its provision of competitive products. The PRC has not "cogently explain[ed] why it . . . exercised its discretion" to ignore those benefits.[62] The Commission's conclusion in the 2018 NPRM that the Postal Service operates at a net competitive disadvantage consequently is arbitrary and capricious.[63]

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58 2018 NPRM in RM2017-1, *supra* note 2, at 6776–77 (emphasis added).

59 Pub. L. 109-435, 120 Stat. 3244, § 703(d) (2006) (emphasis added).

60 2018 NPRM in RM2017-1, *supra* note 2, at 6776.

61 *Id.* at 6777 (emphasis added).

62 Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto Ins. Co., 463 U.S. 29, 48 (1983).

63 *See id.* at 48–49; Sierra Club v. EPA, 671 F.3d 955, 965–66 (9th Cir. 2012) ("By March of 2010, EPA knew that a new computer modeling tool was available and had access to data compiled through the use of the more current tool. That data told a different story than that told by the earlier data. . . . EPA, in its final rule approving the 2004 SIP [state implementation plan], however, did not analyze this new data or explain why it chose not to analyze the data in considering the 2004 SIP. EPA did not 'cogently explain why it . . . exercised its discretion' not to consider the new and available data." (quoting *State Farm*, 463 U.S. at 48)); Resolute Forest Prods. Inc. v. U.S. Dep't of Agriculture, 187 F. Supp. 3d 100, 123 (D.D.C. 2016) ("[W]here an agency has relied on incorrect or inaccurate data or has not made a reasonable effort

II. The PRC's Proposed Formula

The PRC's 2018 NPRM proposes a formula-based approach to calculating the Postal Service's appropriate-share requirement, which supposedly would "annually capture changes in the market and the Postal Service's position in that market: the Postal Service Lerner Index and the Competitive Market Output."[64] In each fiscal year, the PRC would purportedly calculate the Postal Service's appropriate-share requirement for the following fiscal year by multiplying the baseline appropriate-share requirement in the current fiscal year by the sum of (1) one, plus (2) the percentage change in the so-called "Postal Service Lerner Index" over the previous two fiscal years, plus (3) the percentage change in the so-called "Competitive Market Output" over the previous two fiscal years.[65] The PRC contends that, "[b]y using the current fiscal year's appropriate share in the calculation of the next fiscal year's appropriate share, this formula includes the cumulative effects on the appropriate share from prior fiscal years."[66]

The PRC first purports to "gaug[e] the Postal Service's market power . . . quantitatively through a Lerner Index,"[67] which it would calculate in each fiscal year using the following equation:

$$LI_t = (p_t - vvc_t) \div p_t, \tag{1}$$

where LI_t is the Postal Service Lerner Index for competitive products in fiscal year t, p_t is revenue-per-piece for competitive products (that is, total competitive revenue divided by total competitive volume) in fiscal year t, and vvc_t is unit volume-variable cost for competitive products (that is, total volume-variable cost for competitive products divided by total competitive volume) in fiscal year t.[68] The PRC calculates p_t by dividing the sum of total competitive-product revenue by total competitive-product volume, using data from the Postal Service Product Finances Analysis (PFA).[69] The PRC calculates vvc_t by dividing the total competitive-product volume-variable costs by total competitive-product volume using data from the PFA.[70]

Next, the PRC purports to "measure[] the overall size of the competitive market" by calculating the Competitive Market Output in each fiscal year using the following equation:

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to ensure that appropriate data was relied upon, its decision is arbitrary and capricious and should be overturned.").

64 2018 NPRM in RM2017-1, *supra* note 2, at 6761.
65 *Id.* at 6766.
66 *Id.*
67 *Id.* at 6762.
68 *Id.* at 6762–63.
69 *Id.* at 6763. The Commission uses the Postal Service's Cost and Revenue Analysis (CRA) report as inputs to its PFA. *Id.* at 6762.
70 *Id.* at 6762.

$$CMO_t = R_{USPS,t} + R_{Competitors,t}, \tag{2}$$

where CMO_t is the total competitive market output (in terms of revenue) in fiscal year t, $R_{USPS,t}$ is the Postal Service's revenue from competitive products in fiscal year t, and $R_{Competitors,t}$ is the revenue from "'similar products' offered by the Postal Service's competitors" in fiscal year t.[71] The PRC obtains data for $R_{USPS,t}$ from the PFA.[72] In addition, the PRC obtains $R_{Competitors,t}$ by combining data for the "Couriers and Messengers" subsector (NAICS code 492) from the Quarterly Services Survey (QSS) and the Service Annual Survey (SAS) conducted by the U.S. Census Bureau.[73]

Using those calculated values of the Postal Service Lerner Index and the Competitive Market Output, in each fiscal year, the PRC proposes to calculate the Postal Service's appropriate-share requirement for the following fiscal year using the following formula:

$$AS_{t+1} = AS_t \times (1 + \%\Delta LI_{t-1} + \%\Delta CMO_{t-1}), \tag{3}$$

where AS_{t+1} is the Postal Service's appropriate-share requirement in fiscal year t+1, AS_t is the appropriate-share requirement in fiscal year t, $\%\Delta LI_{t-1}$ is the percentage change in the Postal Service Lerner Index from fiscal year t–2 to fiscal year t–1, and $\%\Delta CMO_{t-1}$ is the percentage change in the Competitive Market Output from fiscal year t–2 to fiscal year t–1.[74] Although the PRC's proposed formula for calculating the appropriate-share requirement is recursive, it differs from the formula used in traditional price-cap regulation. Under traditional price-cap regulation, observe Sappington and Weisman,

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71 *Id.* at 6764.

72 *Id.*

73 *Id.* The Postal Service's fiscal year ends on September 30 of each year. U.S. Postal Service, FY2017 Annual Report to Congress 29 (2017), https://about.usps.com/who-we-are/financials/annual-reports/fy2017.pdf. Thus, the PRC combines quarterly data from the QSS such that its measure of competitors' annual revenue "correspond[s] with the Postal Service's fiscal years." 2018 NPRM in RM2017-1, *supra* note 2, at 6764. For example, to calculate competitors' total revenue in the Postal Service's fiscal year 2010, the PRC aggregates competitors' quarterly revenue from the fourth quarter of calendar year 2009 to the third quarter of calendar year 2010. However, because the QSS data are unavailable before 2009, the PRC uses SAS data to derive competitors' annual revenue between 2007 and 2009. *Id.* at 6765. Although the PRC purports to limit competitors' output to packages that weigh less than 70 pounds, I have found no such adjustment in the PRC's submitted Library Reference. *See id.* at 6764 ("The second group is 'similar products' offered by the Postal Service's competitors. This group excludes any competitors' products that the Postal Service does not actually compete with. For example, the Postal Service does not accept parcels weighing more than 70 pounds, so competitors' parcels over 70 pounds are excluded from the competitive market definition."); Postal Regulatory Commission, Library Reference PRC-LR-RM2017-1/1—Order No. 4402 Supporting Data and Sources, Dkt. No. RM2017-1 (Feb. 8, 2018) [hereinafter PRC, Library Reference PRC-LR-RM2017-1/1 in RM2017-1], https://www.prc.gov/dockets/document/103726. Thus, the PRC's calculation of the Competitive Market Output, as currently reported in its 2018 NPRM, likely misrepresents the revenue from competitors' products that are supposedly "similar" to the Postal Service's competitive products.

74 2018 NPRM in RM2017-1, *supra* note 2, at 6766.

"[t]he level of the price cap is adjusted on a periodic basis to reflect inflation, productivity, and various exogenous factors."[75]

III. The Unsound, Unreliable, and Misleading "Postal Service Lerner Index"

The PRC proposes an unprecedented application of the Lerner Index that lacks any support in the scholarly literature on antitrust or regulatory economics. The PRC distorts the Lerner Index as it is currently understood in that economic literature; the PRC concocts its own ersatz index that the agency then wrongly claims is a legitimate extension of the reasoning producing the authentic Lerner Index.

A. The PRC's Unscientific and Misleading Use of the Lerner Index to Infer Market Power, or the Lack of Market Power, When a Firm Does Not Maximize Profits

In his seminal 1934 article, *Monopoly and the Measurement of Monopoly Power*, Abba Lerner sought to measure a monopolist's degree of monopoly power using "the ratio of the divergence of price from marginal cost to price."[76] This ratio came to be known as the Lerner Index. As Lerner said, "[t]he monopolist is normally assumed to tend to fix the price at the level at which [it] makes the greatest profit or 'monopoly revenue.'"[77] Therefore, as Kenneth Elzinga and David Mills have noted, the Lerner Index measures "the difference between the firm's price and its marginal cost at the *profit-maximizing* rate of output."[78] In economic terms, that the firm in question maximizes profits is a necessary condition for the Lerner Index to reliably measure the firm's degree of market power.

In the scholarly literature on antitrust law and economics, William Landes and former Judge Richard Posner provided the canonical definition of market power in their 1981 article in the *Harvard Law Review*: "the ability of a firm (or a group of firms, acting jointly) to raise price above the competitive level without losing so many sales so rapidly that the price increase is

[75] Sappington & Weisman, Designing Incentive Regulation for the Telecommunications Industry, *supra* note 32, at 55; *see also* Jean-Jacques Laffont & Jean Tirole, Competition in Telecommunications 4 (MIT Press 2000).

[76] Abba Lerner, *The Concept of Monopoly and the Measurement of Monopoly Power*, 1 Rev. Econ. Stud. 157, 169 (1934).

[77] *Id.* at 157.

[78] Kenneth G. Elzinga & David E. Mills, *The Lerner Index of Monopoly Power: Origins and Uses*, 101 Am. Econ. Rev.: Papers & Proc., May 2011, at 558, 558 (emphasis added); *see also* William M. Landes & Richard A. Posner, *Market Power in Antitrust Cases*, 94 Harv. L. Rev. 937, 939–40 (1981) (showing that the Lerner Index "measures the proportional deviation of price at the firm's profit-maximizing output from the firm's marginal cost at that output"); Laura Spierdijk & Michalis Zaouras, *The Lerner Index and Revenue Maximization*, 24 Applied Econ. Letters 1075, 1075 (2017) ("[A] zero value [Lerner Index] reflects competitive behavior, while a positive value [Lerner Index] is associated with market power . . . [and] is directly derived from profit-maximizing behaviour.").

unprofitable and must be rescinded."[79] Landes and Judge Posner explained that "it is the response of the firm's output to a change in its price that determines the degree to which it has market power."[80] Put differently, a firm's market power depends on the own-price elasticity of demand for its product. For example, if the demand for a firm's product is highly price-elastic and substitutes exist for that product, then the firm has limited ability to profitably raise prices—that is, the firm has limited market power.[81] By similar reasoning, the less price-elastic is the demand for a firm's product, the greater is the firm's market power.

Because the Lerner Index equals the inverse of the own-price elasticity of demand *only* at the profit-maximizing level of output, when the firm in question maximizes profits, a higher Lerner Index denotes greater market power because demand is less price-elastic.[82] Similarly, at the profit-maximizing level of output, a lower Lerner Index denotes less market power because demand is more price-elastic. Because the Lerner Index differs from the inverse of the own-price elasticity of demand at any level of output other than the profit-maximizing level of output, one cannot reliably infer a firm's degree of market power by examining the Lerner Index when the firm does not maximize profits.[83]

Of course, the Postal Service, like many state-owned enterprises, has the incentive to sacrifice profit to expand its scale, in part due to explicit statutory mandates and policy goals that diverge from profit maximization.[84] It is telling that the Postal Service's incentive compensation explicitly rewards managers with bonuses that are tied to measures of scale, including deliveries per hour and total revenue, rather than profit.[85] Even the OIG acknowledges that the

[79] Landes & Posner, *supra* note 78, at 937.

[80] *Id.* at 941 n.8.

[81] *Id.* at 941 ("[T]he higher the elasticity of demand for the firm's product at the firm's profit-maximizing price, the closer that price will be to the competitive price, and the less, therefore, the monopoly overcharge will be.").

[82] *See id.* at 941–42.

[83] *See id.* at 943 ("[T]he utility of the Lerner index as a measure of monopoly power may be questioned on the ground that for a firm to 'use' the index, and hence for the index to predict correctly the price that the firm will charge relative to its marginal cost, the firm would have to know the elasticity of demand facing it at its profit-maximizing output.").

[84] *See* Sidak, *Maximizing the U.S. Postal Service's Profits from Competitive Products*, *supra* note 34, at 662; J. Gregory Sidak, *Why Should the Postal Service Deter Amazon's Competitive Entry into Last-Mile Parcel Delivery?*, 2 Criterion J. on Innovation 101, 111–14 (2017); Sappington & Sidak, *Competition Law for State-Owned Enterprises*, *supra* note 39, at 499–503; Sappington & Sidak, *Are Public Enterprises the Only Credible Predators?*, *supra* note 39, at 285–86 (explaining that a public enterprise might have a greater incentive than does a private firm to engage in predatory pricing); William J. Baumol, *Toward a Theory of Public Enterprise*, 12 Atlantic Econ. J. 13, 14 (1984) ("For at least part of the analysis of the role of public enterprise may well proceed on the assumption that the distinguishing characteristics of a firm owned and operated by government is the absence of incentives for efficiency. Its employees need not be paid by results, its management's performance is not judged by profit, and subsidies may make it unnecessary for its total costs to be covered.").

[85] *See* Letter from Jeffrey C. Williamson, Chief Human Resources Officer, U.S. Postal Service, to Officers, Fiscal Year 2014 Pay for Performance Program and National Performance Assessment Corporate and Unit Indicators 4 (Sept. 30, 2013), http://www.nalc3825.com/PFP-Prog-FY-2014-31.pdf;

Postal Service's goals diverge from profit maximization. In a November 2016 report, the OIG said that "the Postal Service's primary goal is to serve the public interest, rather than to maximize profits for shareholders."[86]

The Postal Service's objective function therefore likely maximizes some weighted average of profit and scale, rather than profit alone. Indeed, this conjecture finds empirical support in the Postal Service's actual record of chronic losses.[87] President Trump notes in his April 2018 executive order that "the USPS has incurred $65 billion of cumulative losses since the 2007-2009 recession,"[88] and that "the Government Accountability Office has had the USPS on its high-risk list since 2009 because of a serious financial situation that puts the USPS mission of providing prompt, reliable, and efficient universal mail services at risk."[89] It is implausible that a profit-maximizing entity would operate at a loss for more than a decade, particularly without any major overhaul of its operations.[90]

As David Sappington and I have shown, when a firm's objective function includes factors other than profit (as in the case of the Postal Service), that reduced focus on profit reduces the firm's concern about covering its marginal costs. Consequently, the firm sets a price having a lower markup above marginal cost than a profit-maximizing firm would set.[91] Consider a multiproduct state-owned enterprise (SOE) that seeks to maximize a weighted average of revenue and profit. That SOE's objective function is:

$$w \times \left[\sum_{i=1}^{n} p_i Q_i(p) \right] + \left[1 - w \right] \times \left[\sum_{i=1}^{n} p_i Q_i(p) - C(Q) \right], \tag{4}$$

where the first term in square brackets in Equation 4 is the SOE's total revenue—that is, the sum of the revenue derived from the sale of each of the SOE's *n* products. The revenue derived from the sale of any particular

U.S. Government Accountability Office, GAO-08-996, U.S. Postal Service: New Delivery Performance Measures Could Enhance Managers' Pay for Performance Program (2008), http://www.gao.gov/assets/290/280446.pdf.

86 U.S. Postal Service, Office of Inspector General, Governance of the U.S. Postal Service, RARC Report No. RARC-WP-17-002, at 7 (2016), https://www.uspsoig.gov/sites/default/files/document-library-files/2016/RARC-WP-17-002.pdf. The OIG report identifies a list of 19 stakeholders whose "differing concerns" the Board of Governors "must navigate . . . as they steer the organization." *Id.* at 12 fig.1.

87 U.S. Postal Service, FY2017 Annual Report to Congress, *supra* note 73, at 2; U.S. Government Accountability Office, GAO-17-317, High-Risk Series: Progress on Many High-Risk Areas, While Substantial Efforts Needed on Others 130 (2017), https://www.gao.gov/assets/690/682765.pdf ("The U.S. Postal Service (USPS) faces a serious financial situation that is putting its mission of providing prompt, reliable, and efficient universal mail services at risk. It reported a net loss of $5.6 billion in fiscal year 2016—its 10th consecutive year of net losses.").

88 Executive Order on USPS, *supra* note 8, § 1(a)(i).

89 *Id.* § 1(a)(iii).

90 *Cf. Why America's Post Office Should Be Privatised*, Economist (Apr. 19, 2018), https://www.economist.com/leaders/2018/04/19/why-americas-post-office-should-be-privatised (arguing that the task force appointed by President Trump to "examine USPS's finances" should "recommend privatising USPS").

91 Sappington & Sidak, *Competition Law for State-Owned Enterprises*, *supra* note 39, at 505.

product i is simply the product of the number of units of the product sold (Q_i) and the price (p_i) at which each unit is sold. The last term in square brackets in Equation 4 is the SOE's profit, which is the difference between total revenue and total operating cost ($C(Q)$). Thus, with the weight w applied to revenue and the weight ($1 - w$) applied to profit, Equation 4 is simply the aforementioned weighted average of revenue and profit. Note that if $w = 0$, Equation 4 collapses to the objective function of a private multiproduct firm, which includes profit only:

$$\sum_{i=1}^{n} p_i Q_i(p) - C(Q). \tag{5}$$

It is well known that a firm will maximize profit in this setting by raising prices above marginal production costs by amounts that are inversely proportional to the sensitivity of customer demand to price.[92] One can obtain the preferred prices of a profit-maximizing multiproduct firm by deriving the first-order condition of Equation 5. The following inverse-elasticity rule summarizes that private firm's pricing strategy:

$$\frac{p_i - \dfrac{\partial C_i(Q)}{\partial Q_i}}{p_i} = \frac{1}{\varepsilon_i}, \quad \text{for } i = 1, \ldots n, \tag{6}$$

where ε_i is the own-price elasticity of demand for product i, which measures the rate at which customer purchases decline as the price of product i increases.[93] Similarly, one can obtain the preferred prices of an SOE whose objective function is Equation 4 by deriving the first-order condition of Equation 4. The following modified inverse-elasticity rule summarizes that SOE's pricing strategy:

$$\frac{p_i \left([1 - w] \dfrac{\partial C_i(Q)}{\partial Q_i} \right)}{p_i} = \frac{1}{\varepsilon_i}, \quad \text{for } i = 1, \ldots n, \tag{7}$$

Equations 6 and 7 reveal that, relative to a profit-maximizing firm's pricing rule, an SOE's pricing rule scales down marginal costs by a factor of $1 - w$ to reflect the SOE's reduced focus on profit. The greater is its focus on revenue rather than profit (that is, the larger is w), the more the SOE discounts

[92] *See* Frank P. Ramsey, *A Contribution to the Theory of Taxation*, 37 Econ. J. 47 (1927); William J. Baumol & David F. Bradford, *Optimal Departures from Marginal Cost Pricing*, 60 Am. Econ. Rev. 265 (1970); Marcel Boiteux, *Sur la Gestion des Monopoles Publics Astreints à l'Équilibre Budgetaire*, 24 Econometrica 22 (1956).

[93] Notice that the own-price elasticity of demand, ε_i, is written here as a positive number.

marginal costs in the modified inverse-elasticity rule.[94] This discounting of marginal costs reflects the fact that, as the SOE becomes more concerned with revenue relative to profit, it becomes less averse to the higher costs that arise from increased output.[95] Consequently, the SOE favors more highly the expanded output and revenue that result from low prices on those products for which competition from alternative suppliers is most pronounced. The rule indicates that, when such competition exists (as is the case for the Postal Service's competitive products), a reduced focus on profit can lead the SOE to set particularly low prices for the products on which it faces the most intense competition.[96] In those circumstances, the traditional Lerner Index in the economic literature would not accurately reflect the level of competition that the SOE faces.

It is thus false and misleading as a matter of economic analysis to use the Lerner Index purportedly to infer the degree of market power of the Postal Service, an SOE that manifestly seeks to maximize something other than profit (such as a weighted average of revenue and profit).

B. The PRC's Incorrect Application of the Lerner Index to a Group of Products Rather Than an Individual Product

The PRC says in its 2018 NPRM that the Postal Service Lerner Index "indicates whether the Postal Service has engaged in predatory pricing for its competitive products *as a whole*, because if such were the case then the index value would be negative."[97] However, it is economic nonsense to speak of a Lerner Index for a group of different products taken together. For a multiproduct firm that produces j products, economists typically derive a Lerner Index for each of those j products.[98] It is misleading to calculate a single Postal Service Lerner Index across *all* competitive products, because, even if the Postal Service Lerner Index is positive, the Lerner Index of an *individual* competitive product could still be negative. Application of the Lerner Index across a group of products will enable the Postal Service to engage in below-cost pricing for individual competitive products.

For example, suppose (for simplicity of exposition) that the Postal Service offers three competitive products: Product A, Product B, and Product C.

[94] If the SOE is concerned only with profit, then $w = 0$, and the pricing rule for the SOE is the same as that given by Equation 3 for a private firm.

[95] This fact may be seen most readily by noting that Equation 1 can be written as the difference between revenue and modified cost, where modified cost is total cost scaled by the factor $1 - w$.

[96] This conclusion supports John Lott's observation that an SOE might price a product below its marginal cost of production. *See* John R. Lott, Jr., *Predation by Public Enterprises*, 43 J. Pub. Econ. 237 (1990).

[97] 2018 NPRM in RM2017-1, *supra* note 2, at 6767 (emphasis added).

[98] *See, e.g.*, Jean-Jacques Laffont & Jean Tirole, *The Regulation of Multiproduct Firms: Part I: Theory*, 43 J. Pub. Econ. 1, 2 (1990); Franco Mariuzzo, Patrick Paul Walsh & Ciara Whelan, *Firm Size and Market Power in Carbonated Soft Drinks*, 23 Rev. Indus. Org. 283, 292–93 (2003); Robert D. Cairns, *Reflections on Lerner's Index of Monopoly Power*, 10 Rev. Indus. Org. 83, 91–93 (1995).

Suppose further that the Postal Service sets the price of each product at $10 per unit, and that the marginal cost of Product *A* is $5, the marginal cost of Product *B* is $11, and the marginal cost of Product *C* is $12. Table 1 summarizes the price, marginal cost, and Lerner Index of the three products, as well as the estimated Postal Service Lerner Index.

Table 1. Hypothetical Comparison of the Postal Service Lerner Index and Individual Lerner Index Values for Each of Three Competitive Products

Competitive Product	Price Per Unit	Marginal Cost	Lerner Index	Postal Service Lerner Index
	[A]	[B]	[C] = ([A] – [B]) ÷ [A]	[D] = ([A]$_{average}$ – [B]$_{average}$) ÷ [A]$_{average}$
A	$10	$5	0.50	0.07
B	$10	$11	−0.10	0.07
C	$10	$12	−0.20	0.07

Source: Original analysis.

As Table 1 shows, when one analyzes the average price and average marginal cost across all three products in this hypothetical example, the Postal Service Lerner Index is positive. However, when one analyzes each of the three products individually, it is evident that the Postal Service is pricing Product *B* and Product *C* below marginal cost, and (if the Postal Service is breaking even) that it is cross-subsidizing its losses from those products with its profits from Product *A*. Thus, even if the Postal Service Lerner Index is positive, that observation alone does not ensure the absence of below-cost (or predatory) pricing for each competitive product. Below-cost pricing for even a single product is sufficient to harm competition.[99]

The OIG in 2012 correctly recognized that the Postal Service is a multiproduct firm with "different cost characteristics" for *each* of its products, such that an "average" measure of costs across different products "does not provide a meaningful number."[100] The PRC has surely read this OIG report—it even cites the report in its 2018 NPRM.[101] Thus, one can only conclude that the PRC has chosen willfully to ignore this fundamental economic principle

99 *See* Sappington & Sidak, *Competition Law for State-Owned Enterprises*, *supra* note 39, at 507 ("Productive inefficiency arises when a service is produced by a firm that is not the least-cost provider of the service. Pricing below marginal cost can introduce productive inefficiency by rendering unprofitable the operation of the most efficient producers. Industry costs increase, and thus the net benefits to society decline, when below-cost pricing limits or precludes production by the least-cost supplier.").

100 U.S. Postal Service Office of Inspector General, A Primer on Postal Costing Issues RARC Report No. RARC-WP-12-008, at 2 (2012), https://www.uspsoig.gov/sites/default/files/document-library-files/2015/rarc-wp-12-008_0.pdf ("The Postal Service is a multiproduct firm—This characteristic is important because average cost . . . has no meaning in a multiproduct firm. . . . Each of [the Postal Service's] products has different cost characteristics, so dividing total cost by number of total pieces of mail does not provide a meaningful number.").

101 *See* 2018 NPRM in RM2017-1, *supra* note 2, at 6763 n.39.

about market power; instead, the PRC intends to adopt a "Lerner index for the Postal Service's competitive products *as a whole*" that uses "the average unit volume-variable cost and revenue-per-piece for *all* competitive mail."[102]

The OIG's finding is consistent with my conclusion that the Postal Service Lerner Index for competitive products would be a meaningless, unscientific, and unreliable tool for measuring the Postal Service's market power.

C. The PRC's Incorrect Application of the Lerner Index to Measure Market Power in a Market with Seasonal Variation in Demand

Abba Lerner said that "[t]he primary unit to which our measure of monopoly applies is the firm in the *very shortest period*."[103] Consistent with that statement, an annual Lerner Index does not measure market power accurately in industries characterized by wide variations in peak and off-peak demand. Economists have found that, in such industries, Lerner Index values are higher in periods of peak demand than in periods of off-peak demand.[104] Consequently, an annual Lerner Index would exaggerate the Lerner Index during periods of off-peak demand and understate the Lerner Index during periods of peak demand. The Postal Service, of course, experiences huge variations in package-delivery volume during any given year. Figure 3 shows the Postal Service's monthly volume for competitive products from April 2014 to February 2018.

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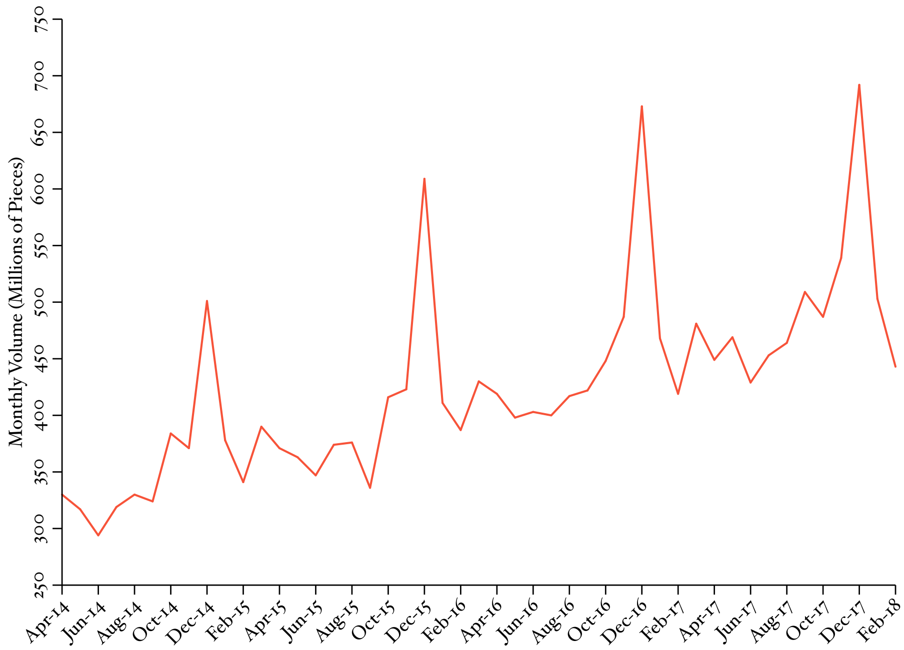
102 *Id.* at 6762 (emphasis added).

103 Lerner, *supra* note 76, at 171 (emphasis added).

104 *See, e.g.*, Catherine D. Wolfram, *Measuring Duopoly Power in the British Electricity Spot Market*, 89 Am. Econ. Rev. 805, 813 (1999) (showing that the average value of the Lerner Index in periods of higher demand was 0.554 and that the average value of the Lerner Index in periods of lower demand was 0.018); Severin Borenstein & James Bushnell, *An Empirical Analysis of the Potential for Market Power in California's Electricity Industry*, 47 J. Indus. Econ. 285, 309 (1999) (showing a model of electricity demand producing higher estimates of the Lerner Index in months of peak demand); *cf.* Michael A. Crew, Chitru S. Fernando & Paul R. Kleindorfer, *The Theory of Peak-Load Pricing: A Survey*, 8 J. Reg. Econ. 215 (1995) (explaining that pricing products differently in periods of peak demand and periods of off-peak demand can mitigate inefficiencies caused by uniform prices).

Figure 3. The Postal Service's Monthly Competitive Product Volume, April 2014 to February 2018



Source: USPS Preliminary Financial Information (Unaudited) (Apr. 2014–Feb. 2018).

Because the PRC's Postal Service Lerner Index is an annual estimate, it necessarily will overestimate the Lerner Index during months of off-peak demand (for example, in April) and underestimate the Lerner Index during months of peak demand (for example, in December).

Moreover, as Figure 3 shows, the magnitude of the seasonal spike in demand for the Postal Service's competitive products has increased over time. If peak demand for competitive products increases relative to off-peak demand, the Postal Service Lerner Index could increase without any corresponding change in market power (and vice versa). For example, if overall demand remains constant, but demand in December increases from year to year, one would expect to see an increase in the Postal Service Lerner Index. That change is entirely unrelated to any change in the Postal Service's market power, which would depend on factors such as the product offerings of the Postal Service's competitors or the ability of those competitors to contest any given package delivery by the Postal Service. Similarly, if growth in ecommerce increases off-peak demand, then the relative magnitude of peak demand (as a percentage of average monthly demand) could decrease. In that case, the PRC's proposed rule would incorrectly interpret the decrease in seasonality as a decrease in the Postal Service's market power.

In sum, in industries characterized by seasonal demand, such as the package-delivery industry, an annual measure of the Lerner Index does not accurately measure market power either in periods of peak demand or in periods of off-peak demand. Moreover, with changes in the degree of seasonality, the Postal Service Lerner Index would change for reasons that are entirely unrelated to the Postal Service's market power. Because the PRC ignores the issue of seasonality of demand, its Postal Service Lerner Index is unscientific and unreliable.

D. The Distortion to the Lerner Index When Using Revenue-Per-Piece to Measure Price

As I explain in Part III.A, because the Postal Service does not maximize profits, no identifiable relationship exists between the Postal Service Lerner Index and the Postal Service's market power. However, even if one assumes for sake of argument (but contrary to fact) that the Postal Service is a profit-maximizing firm, the Postal Service Lerner Index still will not reliably measure the Postal Service's market power if the PRC uses revenue-per-piece to measure price.

The Lerner Index and its relationship to market power are characterized by the relationship between price, *marginal* revenue, and own-price elasticity demand. In any market other than a perfectly competitive market, a critical condition in deriving the firm's profit-maximizing price is that price exceeds marginal revenue for the firm.[105] Replacing price with average revenue, as the PRC's proposed Postal Service Lerner Index does, would violate this fundamental economic principle because it would necessarily overstate "price" and bias the estimation of the Postal Service's market power. As Elzinga and Mills observe, "[w]here a firm's 'average revenues' are taken for its price, the Lerner Index overstates departures from the social optimum when a firm uses familiar nonlinear pricing tactics."[106]

The numerator of the Lerner Index is the difference between price and marginal cost. A profit-maximizing firm produces such a quantity of output

[105] Because a firm faces a downward-sloping demand curve in any market that is not perfectly competitive, its marginal revenue is necessarily lower than price. *See, e.g.*, Robert S. Pindyck & Daniel L. Rubinfeld, Microeconomics 341 (Prentice Hall 9th ed. 2018) ("When the demand curve is downward sloping, the price (average revenue) is greater than marginal revenue because all units are sold at the same price. If sales are to increase by 1 unit, the price must fall. In that case, all units sold, not just the additional unit, will earn less revenue."); *see also* Hal R. Varian, Microeconomic Analysis 235 (W.W. Norton & Co. 3d ed. 1992) ("However, when [quantity]>0, the marginal revenue from selling an extra unit of output must be less than the price since the only way to sell the additional output is to reduce the price, and this reduction in the price will affect the revenue received from all the inframarginal units sold.").

[106] Elzinga & Mills, *supra* note 78, at 559; *cf.* Bradley & Price, *supra* note 33 (explaining the inefficiency of price regulation based on average revenues).

that its marginal revenue equals its marginal cost.[107] Consequently, for a profit-maximizing firm, the Lerner Index also measures the difference between price and marginal revenue at the profit-maximizing price. Demand for a product is more elastic when there are many close substitutes available for that product. If demand for a firm's product is more elastic, price is closer to marginal revenue.[108] Consequently, the smaller the difference between price and marginal revenue, the more competition there is for a given product, and the less market power the seller will possess. However, to capture that relationship, one must accurately measure price.

A firm's average revenue might be an inaccurate and unreliable measure of price for several reasons. For example, a firm might engage in price discrimination by separating consumers into different groups with different own-price elasticities of demand (such as commercial and residential consumers), such that the firm's average revenue includes both sales to consumers with less price-elastic demand (typically at higher prices) and sales to consumers with more price-elastic demand (typically at lower prices).[109] Similarly, a firm might engage in price discrimination through the use of declining block pricing or volume discounts.[110] In either case, average revenue will decrease as quantity sold increases.[111] Regardless of the method of price discrimination, the marginal unit is typically sold at a price that is lower than the average price.[112] Consequently, when a firm engages in price discrimination, average revenue will typically overstate price and the Lerner Index—if distorted to use average revenue as a proxy for price—will typically overstate the difference between price and marginal costs.

This general problem (that average revenue overstates price) is exacerbated by the specific fact, relevant to the PRC's 2018 NPRM, that the Postal Service engages in price discrimination in its provision of (competitive) package-delivery services by virtue of its use of (confidentially) negotiated service agreements (NSAs), which are contracts with large mailers by which the Postal Service offers discounted rates for shipping a large volume of packages or extremely urgent mail and, in many cases, for injecting those items

107 *See, e.g.*, Walter Nicholson & Christopher Snyder, Intermediate Microeconomics and Its Applications 254 (Cengage 12th ed. 2015).

108 For a firm with inverse demand given by $p(q)$, marginal revenue = $p(q) + q[\delta p(q)/\delta q]$. Because demand curves slope downward, the bracketed derivative is negative, as is the entire second term, which ensures that price will exceed marginal revenue. The less responsive quantity demanded is to changes in price, the greater the difference between marginal revenue and price. Quantity demanded is less responsive when demand is inelastic. *Id.* at 258.

109 *Id.* at 358.

110 *See, e.g.*, Roger Sherman & Michael Visscher, *Rate-of-Return Regulation and Two-Part Tariffs*, 97 Q.J. Econ. 27, 27 (1982).

111 *See, e.g.*, Jeffrey M. Perloff, Microeconomics: Theory and Applications with Calculus 426–27 (Pearson 3d ed. 2014).

112 *See id.*

at some intermediate point in the mail stream.[113] The Postal Service uses national average per-package costs for Parcel Select to construct attributable costs for its Parcel Select NSAs, without regard to cost differences between individually mailed Parcel Select packages and Parcel Select packages mailed pursuant to an NSA.[114] However, as the U.S. Government Accountability Office (GAO) recognized, that methodology fails to account for the fact that large or heavy packages delivered under NSAs require extra delivery costs,[115] such that the methodology effectively creates a floor (above which the Postal Service must price its NSAs) that is lower than the actual costs that the Postal Service would incur under any particular NSA. Because the Postal Service's NSAs are large-volume agreements, the Postal Service's incentives to offer low prices to increase output are particularly pronounced with respect to its NSAs. Lower prices under the Postal Service's NSAs may increase the difference between average revenue and the price of the marginal unit.

Using average revenue instead of actual price in the calculation of the Postal Service's Lerner Index will overstate its value. The NSAs already generate increased incentives for the Postal Service to offer low prices, and the Postal Service Lerner Index might aggravate this bias. Even if the Postal Service did maximize profits, because the Lerner Index is biased by the use of an incorrect input, it is an unreliable and unscientific measure of the Postal Service's market power in competitive markets.

IV. The Irrelevance of "Competitive Market Output" to Actual Market Conditions

The PRC's measurement of total industry output is another fundamental flaw in the appropriate-share formula that the Commission proposes in its 2018 NPRM. The PRC incorrectly asserts that "the Commission's proposed formula-based approach is designed to address changes in both static and dynamic efficiency because it raises the appropriate share in response to . . . growth in the overall market, whether such growth is based on increases in demand, entry of new firms, or innovations in the industry."[116] However, as William Nordhaus has observed, existing measures of real output and real incomes do not account for changes in quality and efficiency of goods and service; such measures therefore "fail to capture the major

[113] U.S. Government Accountability Office, GAO-15-408, U.S. Postal Service Improved Management Procedures Needed for Parcel Select Contracts 2 (2015), https://www.gao.gov/assets/670/669822.pdf; *see also* Sidak, *Maximizing the U.S. Postal Service's Profits from Competitive Products*, *supra* note 34, at 639–40.
[114] U.S. Government Accountability Office, GAO-15-408, U.S. Postal Service Improved Management Procedures Needed for Parcel Select Contracts, *supra* note 113, at 19.
[115] *Id.* at 17–18.
[116] 2018 NPRM in RM2017-1, *supra* note 2, at 6781.

shifts in technologies" and "underestimate long-term economic trends."[117] Consequently, if adopted, the proposals in the PRC's 2018 NPRM—despite being ostensibly predicated on the PRC's desire to advance dynamic efficiency as well as static efficiency—would in fact be arbitrary and capricious, unsupported by substantial evidence, and clearly erroneous.

A. The Competitive Market Output's Failure to Account for Dynamic Changes in Markets for Competitive Services

The PRC's proposed methodology does not capture dynamic changes in the package-delivery industry. The PRC says that, "[i]f a firm enters the market and generates new business, the Competitive Market Output would increase."[118] That claim is unconvincing. How would the PRC account for self-delivery by large retailers such as Amazon and Walmart? Although entry by large retailers might theoretically increase the Competitive Market Output that the PRC purports to measure, those retailers' delivery "revenue" will likely be integrated into their end-to-end shipping costs, and those data (belonging to private, unregulated firms) are unlikely to be available to the PRC, let alone to the public. In that case, the PRC's proposed methodology for calculating the Competitive Market Output would erroneously neglect the effects of such vertical entry.

The PRC acknowledges that "[t]he delivery industry since the enactment of the PAEA has been defined by innovation and entry, including . . . the growth of Amazon as both a customer of, *and competitor to*, other delivery services."[119] Indeed, it is an open secret that Amazon has vertically integrated into operating its own logistics network. In the words of a *Bloomberg* report from February 2018, "Brick by brick, Amazon has been building itself into a package delivery company to satisfy not only the voracious demands of Amazon shoppers but also anyone else who wanted to move merchandise from one place to another."[120]

In 2017 alone, Amazon invested *$13.2 billion* in its "warehouses and other logistics buildup," an amount that was "five times the comparable figure in 2015."[121] Also in 2017, Amazon announced a $1.4 billion investment in the CVG cargo airport, in the Cincinnati-Northern Kentucky area, which

[117] William D. Nordhaus, *Do Real-Output and Real-Wage Measures Capture Reality? The History of Lighting Suggests Not*, *in* The Economics of New Goods 29 (Timothy F. Bresnahan & Robert J. Gordon, eds., Univ. of Chicago Press 1997).
[118] 2018 NPRM in RM2017-1, *supra* note 2, at 6769.
[119] *Id.* at 6781 (emphasis added).
[120] *See, e.g.*, Shira Ovide, *Amazon's Delivery Dream Is a Nightmare for FedEx and UPS*, Bloomberg (Feb. 9, 2018), https://www.bloomberg.com/gadfly/articles/2018-02-09/amazon-s-delivery-dream-is-a-nightmare-for-fedex-and-ups.
[121] *Id.*

Amazon expects to use as its primary air freight hub.[122] Amazon already operates Amazon Flex, an Uber-like delivery network in more than fifty U.S. cities.[123] Through "Deliver with Amazon," Amazon contracts with local delivery companies to deliver Amazon's packages to end customers.[124] That program operates in twelve metropolitan areas as of April 2018, and Amazon states on its delivery provider application page that it plans to expand.[125] In 2018, Amazon reportedly plans to deploy "Shipping with Amazon"—a last-mile delivery service for companies—which will place Amazon in direct competition with UPS and FedEx.[126]

Walmart has also vertically integrated into last-mile delivery. In 2016, Walmart started "testing grocery delivery through crowd-sourced services like Uber."[127] As of February 2018, Walmart offers grocery delivery in San Jose, Phoenix, Tampa, Orlando, Dallas, and Denver.[128] In May 2017, Walmart started enlisting its employees to deliver packages on their way home from work.[129] In September 2017, Walmart acquired Parcel, "a technology-based, same-day and last-mile delivery company."[130] Walmart said that it "plan[s] to leverage Parcel for last mile delivery . . . for both general merchandise as well as fresh and frozen groceries."[131]

As Amazon and Walmart increasingly rely on their own delivery networks to reach end customers, they presumably will rely less on the networks of the Postal Service and traditional carriers (such as UPS and FedEx). In other words, vertical entry by those retailers will decrease traditional carriers' volumes, and therefore revenues, from package delivery. Furthermore,

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122 *Amazon and CVG*, CVG, http://www.cvgairport.com/about/next/amazon-and-cvg.

123 *Amazon Flex*, Amazon, https://flex.amazon.com/about/. As of April 2018, the cities include Akron, Atlanta, Austin, Baltimore, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Columbus (Ohio), Denver, Detroit, Greensboro, Houston, Indianapolis, Jacksonville, Las Vegas, Los Angeles, Lubbock, Milwaukee, Minneapolis, Nashville, Orlando, Palm Desert (California), Philadelphia, Phoenix, Pittsburgh, Portland (Oregon), Raleigh, Richmond (Virginia), Sacramento, San Antonio, San Diego, St. Louis, Stockton, Tucson, and Virginia Beach. *Id.*

124 *Deliver with Amazon—Apply*, Amazon, https://logistics.amazon.com/apply.

125 *Id.* As of April 2018, those metropolitan areas are Los Angeles, San Diego, San Francisco, San Jose, Oakland, Seattle, Chicago, Dallas, Austin, Phoenix, Philadelphia, and Metro New York City. *Id.*

126 *See* Arjun Kharpal, *Amazon Reportedly Launching a Delivery Service for Businesses; FedEx, UPS Shares Slide*, CNBC (Feb. 9, 2018), https://www.cnbc.com/2018/02/09/amazon-reportedly-launching-a-delivery-service-for-businesses.html; Jacob Siegal, *Amazon Will Launch Its Own Delivery Service to Compete with FedEx, UPS*, BGR (Feb. 9, 2018), http://bgr.com/2018/02/09/amazon-delivery-service-swa-fedex-ups/.

127 Mike Turner, *Your Delivery Has Arrived* . . . With All Your Walmart Goodies, Walmart Today (Aug. 21, 2017), https://blog.walmart.com/innovation/20170821/your-delivery-has-arrivedwith-all-your-walmart-goodies.

128 Elaine Low, *Walmart Confirms Grocery Delivery-Related 'Wam!' Trademark Linked to Ongoing Projects*, Inv. Bus. Daily (Feb. 1, 2018), https://www.investors.com/news/wal-mart-confirms-wam-by-walmart-grocery-delivery-is-active-project/.

129 *See* Abha Bhattarai, *Walmart Is Asking Employees to Deliver Packages on Their Way Home from Work*, Wash. Post (June 1, 2017), https://www.washingtonpost.com/news/business/wp/2017/06/01/walmart-is-asking-employees-to-deliver-packages-on-their-way-home-from-work/?utm_term=.daee46f88638.

130 Press Release, Walmart, Walmart Announces the Acquisition of Parcel, a Technology-Based, Same-Day and Last-Mile Delivery Company (2017), https://corporate.walmart.com/article/walmart-announces-the-acquisition-of-parcel-a-technology-based-same-day-and-last-mile-delivery-company.

131 *Id.*

those retailers' package-delivery revenues likely will not be publicly available and will be integrated into their end-to-end shipping costs. Because the PRC's Competitive Market Output relies on the U.S. Census Bureau's public survey of the courier and messenger industry, it will not reflect package-delivery revenue that belongs to those large retailers. Therefore, the PRC's Competitive Market Output in its current form will misrepresent the package-delivery industry's actual output.

Moreover, retailers like Amazon and Walmart offer innovative methods of last-mile delivery, such as ship-to-store and delivery to designated lockers across the country.[132] Growth in those services might have a dynamic effect not only on the volume of last-mile deliveries by traditional carriers, but also on the price of those deliveries. For example, a customer might be more likely to select a free ship-to-store option than to pay a high surcharge for an urgent delivery. In that case, those innovations could affect the volume, price, and marginal cost of last-mile delivery by traditional carriers (including the Postal Service), which in turn would affect both the Competitive Market Output and the Postal Service Lerner Index.

In sum, despite purporting to capture dynamic changes in the market in which the Postal Service's competitive products compete, the methodology that the PRC proposes in its 2018 NPRM in fact will be incapable of capturing the dynamic market growth that large retailers cause by their vertical entry into last-mile delivery. The PRC's reliance on its proposed measure of Competitive Market Output would be akin to driving down the road by looking only into the rear-view mirror.

B. A Revenue-Based Competitive Market Output That Is Unreliable and Flouts Established Regulatory Practice

The PRC "determines that revenue, rather than volume, is the better measure of the overall size of the competitive market."[133] However, a firm's costs are more directly a function of its unit volume than of its revenue (which equals unit volume multiplied by unit price, assuming that the firm charges a uniform price). Measuring output on the basis of revenue can fail to capture market growth if competitive pressure decreases prices more rapidly than unit volume increases, or if growth in volume is driven by below-cost pricing.

For simplicity of exposition, suppose that the volume of packages delivered in a given fiscal year is 10 billion units, and that the average price per package is $10. In that fiscal year, the Competitive Market Output would be

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132 *See Amazon Locker*, Amazon, https://www.amazon.com/b?ie=UTF8&node=6442600011; *Store Pickup*, Walmart, https://www.walmart.com/cp/store-pickup/2281929.

133 2018 NPRM in RM2017-1, *supra* note 2, at 6764; *see also id.* ("Volume data would have to be adjusted for intra-industry transactions. The revenue data are also available for all firms in the relevant market, whereas volume data for the Postal Service's competitors is unavailable.").

$100 billion. Suppose further that, in the following fiscal year, the volume of delivered packages increases to 11 billion units, but the average price per package decreases to $9. In that case, the PRC's measure of Competitive Market Output would *decrease* to $99 billion, despite there being actual growth of 10 percent in package-delivery unit volume. In this example, the demand for package delivery is nearly unit-elastic.

Next, suppose that the demand for package delivery as a whole is price-inelastic. In that case, any decrease in price for package delivery would reduce total revenue.[134] For example, with price-inelastic demand, a 10-percent price decrease from $10 to $9 might lead to an increase in quantity demanded of only 5 percent. In that case, the quantity of delivered packages would increase from 10 billion units to 10.5 billion units, but revenue would fall from $100 billion to $94.5 billion (that is, 10.5 billion units × $9 per unit). Here, both the total volume of delivered packages and the total costs of delivering the incremental 500 million packages have increased. However, because the PRC purports to measure Competitive Market Output on the basis of revenue rather than volume, the required contribution of competitive products to the recovery of the Postal Service's institutional costs would *decrease*. In other words, measuring Competitive Market Output on the basis of revenue (as the PRC proposes in its 2018 NPRM) might produce perverse results in which an increase in the Postal Service's institutional costs due to an increase in the quantity of delivered packages leads to a decrease in the proportion of institutional costs recovered by those packages.

Moreover, using unit volume as a measure of industry output would be consistent with the approach that other U.S. regulatory agencies have adopted in analyzing competitive conditions in network industries. For example, the Federal Energy Regulatory Commission (FERC) analyzes total output of the natural gas industry in terms of billion cubic feet per day (Bcfd).[135] When assessing the market power of a seller of electricity, FERC examines, among other things, the firm's market share and the Herfindahl-Hirschman Index (HHI) of market concentration, both of which it measures on the basis of volume in megawatts (as opposed to revenue).[136] Similarly, in its annual *Mobile*

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[134] *See, e.g.*, N. Gregory Mankiw, Principles of Economics 96 (Cengage 8th ed. 2018) (showing that, when demand is inelastic, a decrease in price corresponds to a decrease in total revenue).

[135] *See, e.g.*, Federal Energy Regulatory Commission, Winter 2017–18 Energy Market Assessment 4 (2017), https://www.ferc.gov/market-oversight/reports-analyses/mkt-views/2017/10-19-17-A-3.pdf (measuring U.S. natural gas output in units of Bcfd).

[136] *See, e.g.*, Market-Based Rates for Wholesale Sales of Electric Energy, Capacity and Ancillary Services by Public Utilities, 119 FERC ¶ 61,295, at 8 (June 21, 2007) (codified at 18 C.F.R pt. 35), https://www.ferc.gov/whats-new/comm-meet/2007/062107/E-1.pdf. FERC's market-share analysis "measures for each of the four seasons whether a seller has a dominant position in the market based on the ***number*** of megawatts of uncommitted capacity owned or controlled by the seller as compared to the uncommitted capacity of the entire relevant market." *Id.* at 18 (emphasis added). Because FERC calculates market shares on the basis of volume, it necessarily follows that FERC's estimation of the HHI—which is the sum of the squared market-share values—also depends on volume. *Id.* at 61 n.93.

Wireless Competition Report, the Federal Communications Commission (FCC) considers "the number of wireless connections" and "wireless data volumes" as indicators of output in the wireless communication industry.[137] In the same report, the FCC analyzes market shares of wireless service providers on the basis of volume (measured by the number of connections and the number of subscribers), in addition to revenue.[138] Another standard metric of output of telecommunications carriers is minutes of use (MOU).[139] Similarly, megabits per second (Mbps) is a standard metric of broadband output.[140]

Other government agencies have also consistently analyzed market conditions on the basis of unit volume. For example, in evaluating the cumulative effects of mergers in the petroleum industry in 2004, the U.S. Government Accountability Office (GAO) measured market concentration on the basis of "crude oil distillation capacity."[141] Similarly, in its 1997 analysis of "truck and rail competition," the U.S. Department of Transportation "examine[d] the traffic lanes (by miles) and their density (by tons)."[142] In its *Domestic Airline Fares Consumer Report* for the third quarter of 2017, the U.S. Department of Transportation calculated airlines' market shares on the basis of their share of airline-passenger traffic volume rather than their shares of total revenues.[143]

In sum, measuring industry output on the basis of revenue rather than unit volume is the exception rather than the rule among federal regulatory agencies. Its use in the manner prescribed in the PRC's 2018 NPRM not only would misrepresent market conditions, but also would flout the established regulatory practice of using unit volume (rather than revenue) when analyzing an industry's competitive conditions. Consequently, the PRC's proposed definition of Competitive Market Output in its 2018 NPRM would inexplicably deviate from the established economic principles and methodologies that the federal government's other expert regulatory agencies routinely

137 Implementation of Section 6002(b) of the Omnibus Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, Including Commercial Mobile Services, Twentieth Report, 32 FCC Rcd. 8968, 8972 (2017) [hereinafter FCC, 20th Mobile Wireless Competition Report], https://apps.fcc.gov/edocs_public/attachmatch/FCC-17-126A1_Rcd.pdf.

138 *Id.* at 8987.

139 *See, e.g.*, *id.* at 8980; Ofcom, Mobile Call Termination Market Review 2015–18: Annexes 1 to 6, at 72 n.120 (2015), https://www.ofcom.org.uk/__data/assets/pdf_file/0025/76093/annex_1_to_annex_6.pdf.

140 *See, e.g.*, FCC, 20th Mobile Wireless Competition Report, *supra* note 137, at 8973.

141 U.S. Government Accountability Office, GAO-04-982T, Energy Market: Mergers and Other Factors That Affect the U.S. Refining Industry 10 (2004), https://www.gao.gov/assets/120/111137.pdf.

142 U.S. Department of Transportation, *Shipper Concerns and Modal Competition*, *in* 2 Comprehensive Truck Size and Weight Study, at IV-24 (1997), https://www.fhwa.dot.gov/reports/tswstudy/v2chap4.pdf; *see also id.* at IV-25–34 (analyzing freight modal competition on the basis of shipment units).

143 *See* U.S. Department of Transportation Office of Aviation Analysis, Domestic Airline Fares Consumer Report Information (2018), https://www.transportation.gov/sites/dot.gov/files/docs/mission/office-policy/aviation-policy/304941/domestic-airline-fares-consumer-report-2017-q3.pdf ("[T]he 'lowest fare carrier' is the carrier with the lowest average fare that has at least a 10 percent share of the traffic in the market.").

employ. The Commission's *ad hoc* approach would be arbitrary, unscientific, and unreliable.

V. The Proposed Formula's Lack of Scientific or Economic Legitimacy

In addition to containing individually flawed components, the PRC's proposed formula as a whole lacks a sound economic basis. Apart from asserting that the proposed formula in its 2018 NPRM "is recursive in order to fully incorporate changes in the Postal Service's market power and the overall market size from year to year,"[144] the PRC fails to provide any economic explanation that would justify the particular configuration of the Commission's proposed formula to set the appropriate share.

A. The PRC's Lack of Economic Justification for Weighting the Postal Service Lerner Index and Competitive Market Output Equally

The PRC says "[t]he Postal Service Lerner Index and Competitive Market Output are given equal weight in the calculation because the Commission considers both to carry equal importance in assessing the appropriate share of institutional costs."[145] The NPRM envisions this equal weighting supposedly "because it is necessary to balance changes in the competitive market with changes in the Postal Service's market power."[146] It is impossible to decipher what the PRC means by this enigmatic sentence.

From an economic perspective, the PRC's decision to weight the two components equally is completely arbitrary. The PRC does not analyze, for example, whether the two variables are endogenous, whether one variable is more highly correlated with the Postal Service's costs attributable to competitive products than the other, or how the appropriate-share calculation would evolve under different weighting scenarios. Because I am not a baker, it is impossible for me to know the correct ratio of flour to sugar in baking a sheet cake. Prudence requires that I conduct some research and analysis to find the correct ratio, and not simply use equal parts flour and sugar based on the assumption that both are "equally important" to baking the cake. The PRC's failure to offer a reasonable explanation for the particular configuration of its formula is arbitrary and capricious.[147]

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144 2018 NPRM in RM2017-1, *supra* note 2, at 6766.

145 *Id.*

146 *Id.*

147 *See* Appalachian Power Co. v. EPA, 251 F.3d 1026, 1034 (D.C. Cir. 2001) ("Even if the EPA [Environmental Protection Agency] finds on remand that its choice was the better one, failure to 'examine the relevant data and articulate a satisfactory explanation for its action' either is arbitrary decisionmaking or at least prevents a court from finding it non-arbitrary." (quoting Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 43 (1983))); *id.* at 1035 ("The EPA adopted this methodology without

B. The PRC's Neglect of Standard Economic Factors That Affect Market Conditions

From an economic perspective, a rigorous analysis of competitive conditions in a market must consider several economic factors, including barriers to entry and the rate of innovation. Although the PRC agrees that those factors are relevant for its analysis, it nonetheless chooses to include only two static measures of competitive conditions in the formula that it proposes in its 2018 NPRM: (1) the Postal Service's price-cost margins and (2) total industry revenue. The PRC's decision to ignore other standard economic factors in its formula is arbitrary.

In analyzing a market's competitive conditions, economists have examined whether there are persistent barriers to entry or high sunk costs associated with entry in the market, as well as the rate of innovation in the market.[148] For example, Aviv Nevo examines market concentration, price-cost margins, advertising-to-sales ratios, and the rate of introduction of new products to analyze competitive conditions in the ready-to-eat cereal industry.[149] Although he observes high price-cost margins in that industry, he concludes on the basis of other economic factors that the high price-cost margins in the ready-to-eat cereal industry do not reflect a "lack of price competition," but instead reflect "consumers' willingness to pay for their favourite brand, and pricing decisions by firms that take into account substitution between their own brands."[150] His results illustrate why one cannot reliably infer the degree of price competition in a market solely on the basis of price-cost margins.

offering any reasoned explanation for its choice. The EPA's decision . . . may well have been reasonable. . . . However, there is no way for us to tell because the EPA never offered an explanation. Merely asserting that the choice was 'reasonable' is not enough."); American Lung Ass'n v. EPA, 134 F.3d 388, 392–93 (D.C. Cir. 1998) ("In this case, the Administrator may well be within her authority to decide that 41,500 or some smaller number of exposed asthmatics do not amount to a public health problem warranting national protective regulation, or that three or six or twelve annual exposures present no cause for medical concern. But unless she describes the standard under which she has arrived at this conclusion, supported by a '[]plausible' explanation, we have no basis for exercising our responsibility to determine whether her decision is 'arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law; . . . [or] in excess of statutory . . . authority, or limitations.'" (alterations in original) (first quoting *State Farm*, 463 U.S. at 43; and then quoting 42 U.S.C. § 7607(d)(9)(A)–(C))); Sierra Club v. EPA, 167 F.3d 658, 663 (D.C. Cir. 1999) ("Although EPA said *that* it believed the combination of regulatory and uncontrolled data gave an accurate picture of the relevant MWIs' [medical waste incinerators'] performance, it never adequately said *why* it believed this." (emphasis in original)).

148 *See, e.g.*, Joe S. Bain, Barriers to New Competition: Their Character and Consequences in Manufacturing Industries 53–143 (Harvard Univ. Press 1956); Daniel Ackerberg, C. Lanier Benkard, Steven Berry & Ariel Pakes, *Econometric Tools for Analyzing Market Outcomes*, *in* 6A Handbook of Econometrics 4174, 4234 (James Heckman & Edward Leamer eds., 2007); Harold Demsetz, *Barriers to Entry*, 72 Am. Econ. Rev. 47, 56 (1982); David P. Baron, *Limit Pricing, Potential Entry, and Barriers to Entry*, 63 Am. Econ. Rev. 666, 666 (1973); Aviv Nevo, *Measuring Market Power in the Ready-to-Eat Cereal Industry*, 69 Econometrica 307, 307 (2001) (finding that there is "aggressive introduction of new products" in the ready-to-eat cereal industry); J. Gregory Sidak, *Abolishing the Letter-Box Monopoly*, 1 Criterion J. on Innovation 401, 428 (2016).

149 Nevo, *supra* note 148, at 307.

150 *Id.* at 308.

Similarly, I have written with the late Judge Robert Bork that "neither economic theory nor empirical evidence indicates a dispositive relationship between profit margins and the possession of market power."[151] High profit margins could be consistent with superior management or with robust dynamic competition, especially in industries with high sunk investments.[152] Likewise, I have written with Jerry Hausman that measures of market concentration (such as the HHI) alone might be insufficient to evaluate competitive conditions in a market.[153] A rigorous analysis of competitive conditions must consider various economic factors simultaneously.

Of course, the PRC recognizes that factors other than merely the Postal Service's price-cost margins and industry revenue are relevant to its analysis of competitive conditions. The PRC explicitly states that "[n]etwork industries, including the delivery industry in which the Postal Service competes, contain significant barriers to entering the market."[154] In addition, the PRC recognizes that "there have been significant innovative developments and changes in e-commerce and the delivery industry," such that "[i]t is important for the formula-based approach to incorporate such changes."[155] Yet, the PRC then effectively chooses to give those factors zero weight by accounting only for the Postal Service's profit margins and industry revenue in the formula that the Commission proposes in its 2018 NPRM. The PRC's neglect of standard economic factors affecting a market's competitive conditions is arbitrary and capricious, unsupported by substantial evidence, and clearly erroneous.

C. The PRC's Failure to Demonstrate the Stability of Its Proposed Recursive Formula

The PRC says in its 2018 NPRM that "[t]he appropriate share has historically avoided the extremes of both being set too high and being set too low," and it concludes that "the proposed formula-based approach would continue to do so."[156] To justify that conclusion, the PRC explains:

> [T]he Postal Service's actual contribution has exceeded the proposed formula-derived appropriate share in every year since FY 2007. This demonstrates that the proposed formula-based approach would not have forced the Postal Service to set prices too high. . . . The proposed formula would

[151] Robert H. Bork & J. Gregory Sidak, *The Misuse of Profit Margins to Infer Market Power*, 3 J. Competition L. & Econ. 511, 512 (2013).

[152] *See id.* ("Supracompetitive profits may result from a factor other than market power, such as superior management. Furthermore, in industries with high sunk investment, high profit margins are consistent with a dynamically competitive market.").

[153] Jerry A. Hausman & J. Gregory Sidak, *Evaluating Market Power Using Competitive Benchmark Prices Instead of the Herfindahl-Hirschman Index*, 74 Antitrust L.J. 387, 407 (2007) ("The HHI approach to analyzing SMP [significant market power], which we have shown often results in ambiguous findings, does not correspond to a correct economic analysis of market power.").

[154] 2018 NPRM in RM2017-1, *supra* note 2, at 6763.

[155] *Id.* at 6773.

[156] *Id.* at 6774.

> also prevent prices from being set too low because it responds to changes in the Postal Service's market power and the overall market size.[157]

Put differently, the PRC argues (1) that its proposed formula-based approach will shield against an appropriate-share requirement that is too high because the appropriate-share values that the PRC derived from historical data were lower than the Postal Service's historical contribution levels and (2) that the Commission's proposed formula-based approach will shield against an appropriate-share requirement that is too low because it will respond to changes in market conditions.

The PRC's explanation that its proposed formula will "prevent prices from being set too low" is demonstrably false. For reasons that I explained in Parts III and IV, the PRC's proposed formula lacks any reliable causal relationship with either the Postal Service's market power or the overall size of the package-delivery industry.

However, even setting aside that deficiency, it is nonsensical as an economic matter for the PRC to conclude (solely on the basis of the formula's supposed effectiveness in corresponding to historical data) that the formula will continue to be effective in the future. Because the PRC's proposed formula is recursive, there is the risk that an increase in one year's appropriate-share requirement could cause an increase in the appropriate-share requirement in the following years (and vice versa). Put differently, under the PRC's recursive formula, the appropriate-share requirement could either enter into a positive feedback loop and ultimately "prevent[] the Postal Service from competing in the market," or enter into a negative feedback loop and ultimately "allow[] the Postal Service to dominate the market."[158]

The PRC fails to demonstrate that its proposed formula will be sustainable outside the unique conditions that the industry experienced from 2007 to 2017. As the PRC recognizes, during that particular time period the industry faced one of the largest recessions in U.S. history *and* experienced rapid growth of last-mile package delivery.[159] Moreover, even under those specific conditions, the PRC does not consider that changes in the appropriate-share requirement might affect the behavior of market participants. For example, FedEx and UPS (through their pricing decisions) and Amazon (through its demand for self-delivery) would react strategically to the effect of the recursive appropriate share on their own future profits. In short, it is impossible to

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157 *Id.*

158 *Id.*

159 *See id.* at 6763 ("The global financial crisis of the late 2000's constituted a severe economic shock and reduced consumer demand."); *id.* at 6781 ("The delivery industry since the enactment of the PAEA has been defined by innovation and entry, including the introduction of more efficient vehicles, improved dynamic routing algorithms, Sunday delivery by the Postal Service, and the growth of Amazon as both a customer of, and competitor to, other delivery services.").

know whether the PRC's formula would be sustainable outside the particular conditions that the industry previously experienced. It is the PRC's burden to demonstrate that the adoption of its proposed formula would not produce extreme values of the appropriate-share requirement, especially given that the PRC itself recognizes the importance of ensuring against those extreme outcomes.[160]

VI. The Proposed Formula's Failure to Capture "Prevailing Competitive Conditions" in the Package-Delivery Industry

Section 3633(b) of the PAEA mandates that the PRC consider, among other things, "the prevailing competitive conditions in the market" in conducting its review of the appropriate-share requirement.[161] The PRC contends in its 2018 NPRM that its "proposed formula-based approach captures the prevailing competitive conditions in the market,"[162] supposedly because that approach "captures the three specific market conditions that the Commission has considered in its previous appropriate share determinations"[163]—namely, "(1) the existence (or nonexistence) of evidence suggesting that the Postal Service has benefitted from a competitive advantage with respect to competitive products; (2) changes to the Postal Service's market share with respect to competitive products since the Commission's last review; and (3) changes to the package delivery market and to the Postal Service's competitors since the Commission's last review."[164]

However, as an economic matter, the PRC's assertion that its proposed formula-based approach captures the prevailing competitive conditions in the market is demonstrably false. The PRC little more than speculates on the various scenarios under which its proposed formula *might* capture changes in those three conditions. The formula's components lack any direct relationship to the Postal Service's competitive advantage, to changes in the Postal Service's market share, or to changes in the market and competitors. Consequently, the PRC's 2018 NPRM fails to capture "the prevailing competitive conditions in the market"[165] in its proposed formula. Three points deserve scrutiny.

[160] *See id.* at 6774 ("Historically, the appropriate share has neither prevented the Postal Service from competing in the market, nor allowed the Postal Service to dominate the market.").

[161] 39 U.S.C. § 3633(b).

[162] 2018 NPRM in RM2017-1, *supra* note 2, at 6767.

[163] *Id.*

[164] Postal Regulatory Commission, Order Reviewing Competitive Products' Appropriate Share Contribution to Institutional Costs, Dkt. No. RM2012-3, at 14 (Aug. 23, 2012).

[165] 39 U.S.C. § 3633(b).

A. The Absence of Any Direct Relationship Between the Postal Service Lerner Index and the Postal Service's Actual Competitive Advantage

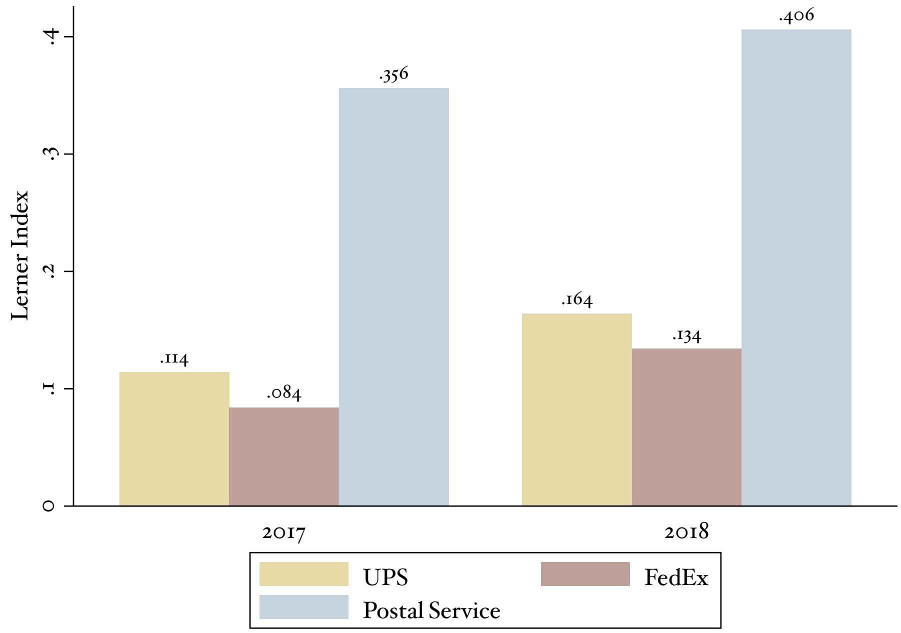
In analyzing the Postal Service's competitive advantage, the PRC's 2018 NPRM says that "sudden large increases [in the Postal Service Lerner Index] may indicate a competitive advantage *under certain circumstances*."[166] The Commission explains that, because "a Lerner index is not a zero-sum index[,] [i]n growing markets, competitors may experience similar increases in their Lerner indices."[167]

It is necessary to pause to highlight the ambiguity in this statement. It is unclear what the PRC envisions. Does the PRC expect UPS, FedEx, and other competitors of the Postal Service to calculate "their Lerner Indices" in the way that economic textbooks and scholarly journals define the Lerner Index? Or does the Commission expect these competitors to calculate "their Lerner Indices" in the idiosyncratic manner that the Postal Service Lerner Index formula proposes in the PRC's 2018 NPRM? If the Postal Service performs the calculation that NPRM envisions, but private competitors calculate their Lerner Indices according to the pre-existing economic literature on the subject, does the Commission believe that an apples-to-apples comparison will result?

Putting this ambiguity to one side, it bears emphasis that, in the previous passage quoted from the 2018 NPRM, the PRC acknowledges that an increase in the Postal Service Lerner Index would not reflect the Postal Service's competitive advantage in a growing market. Of course, because the Postal Service's competitive advantage is necessarily a relative measure, it follows that, if growth in the market causes the Postal Service Lerner Index and competitors' Lerner Indices to increase at the same rate, then an increasing Postal Service Lerner Index will not reflect an increasing competitive advantage (to the extent that one believes that the difference in Lerner Index values indicates the degree of competitive advantage or disadvantage). For example, suppose that the Postal Service Lerner Index and the Lerner Indices of two of the Postal Service's competitors (UPS and FedEx) each increase by 0.05 from 2017 to 2018, as Figure 4 shows.

166 2018 NPRM in RM2017-1, *supra* note 2, at 6767 (emphasis added).
167 *Id.*

Figure 4. An Increased Postal Service Lerner Index
Without an Increased Competitive Advantage

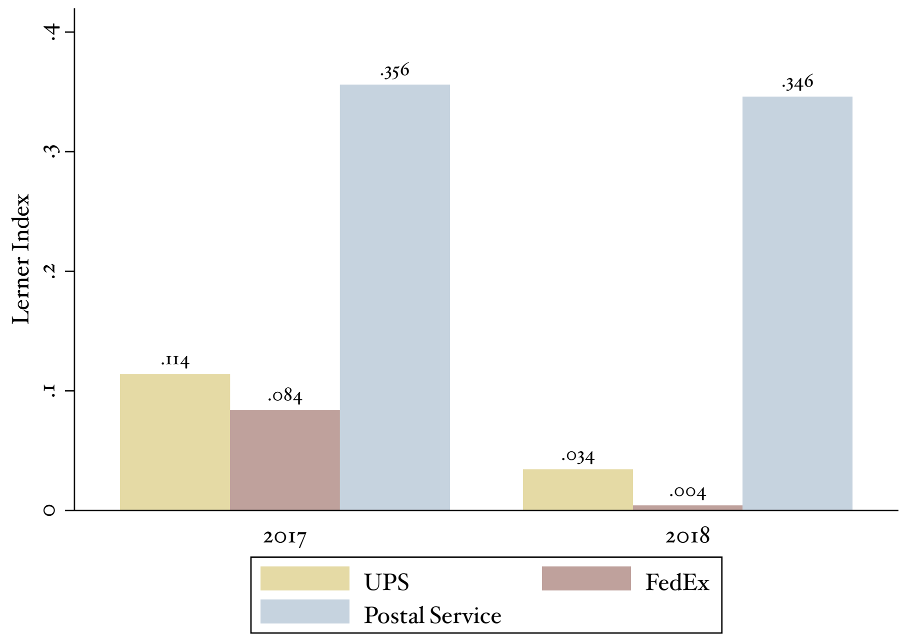


Sources: I obtained the Postal Service Lerner Index for fiscal year 2017 from the PRC's 2018 NPRM in RM2017-1, *supra* note 2, at 6763. Economists routinely use the ratio of "operating profits net of depreciation, provisions and an estimated financial cost of capital [to] sales" as a proxy for a firm's Lerner Index. *See, e.g.*, Philippe Aghion, Nick Bloom, Richard Blundell, Rachel Griffith & Peter Howitt, *Competition and Innovation: An Inverted-U Relationship*, 120 Q.J. Econ. 701, 704 (2005); *see also* Frederick H. deB. Harris, *Structure and Price-Cost Performance Under Endogenous Profit Risk*, 35 J. Indus. Econ. 35, 43 (1986). Conservatively, I estimated UPS's and FedEx's Lerner Index values for fiscal year 2017 using each firm's operating-profit-to-revenue ratio. United Parcel Serv., Inc., Annual Report for the Fiscal Year Ended December 31, 2017 (SEC Form 10-K), at 20 (filed Feb. 21, 2018); FedEx Corp., Annual Report for the Fiscal Year Ended May 31, 2017 (SEC Form 10-K), at 35 (filed July 17, 2017). Because those values do not account for UPS's and FedEx's fixed costs, they necessarily overstate UPS's and FedEx's Lerner Index values.

To the extent that the PRC considers the difference between Lerner Indices to indicate competitive advantage or disadvantage, when both the Postal Service Lerner Index and its competitors' Lerner Indices increase by the same magnitude, an increased Postal Service Lerner Index would not indicate a competitive advantage.

Likewise, if the Postal Service Lerner Index decreases more slowly than competitors' Lerner Indices decrease, then a decreasing Postal Service Lerner Index will not necessarily reflect a decreasing competitive advantage. Suppose that from 2017 to 2018, the Postal Service Lerner Index decreases by 0.01, while the Lerner Indices of two of the Postal Service's competitors (UPS and FedEx) each decrease by 0.08. Figure 5 demonstrates that effect.

Figure 5. A Decreased Postal Service Lerner Index Without a Decreased Competitive Advantage



Sources: *See* sources cited in *supra* Figure 4.

As Figure 5 shows, to the extent that the PRC considers the difference between Lerner Indices to indicate a competitive advantage or disadvantage, a decreased Postal Service Lerner Index would not indicate a competitive disadvantage if the Lerner Indices of the Postal Service's competitors decrease by a greater magnitude. Ultimately, there is no direct relationship between the Postal Service Lerner Index proposed in the PRC's 2018 NPRM and the Postal Service's actual competitive advantage.

B. *The Proposed Formula's Failure to Reflect Changes in the Postal Service's Market Share with Respect to Competitive Products*

In analyzing changes in the Postal Service's market share for competitive products, the PRC speculates in its 2018 NPRM that "[t]he change in the Postal Service's market share by revenue *would likely* be reflected in both components of the Commission's proposed formula."[168] With respect to

[168] *Id.* at 6769 (emphasis added).

the Competitive Market Output, the 2018 NPRM says that shifts in revenues would change "the composition of the Competitive Market Output . . . [a]lthough the overall Competitive Market Output may not change dramatically."[169]

However, it is the value of the Competitive Market Output itself, not the values of the Competitive Market Output's components, that ultimately affects the 2018 NPRM's proposed appropriate-share calculation. In other words, regardless of whether the Postal Service's market share has increased or decreased over a given fiscal year, the Competitive Market Output will have the same effect on the appropriate-share calculation. Table 2 demonstrates that effect empirically by calculating the Postal Service's hypothetical appropriate-share requirement for fiscal year 2020 under different market-share assumptions.

Table 2. Calculating the Appropriate Share for Fiscal Year 2020
Under Different Market-Share Assumptions

Postal Service Competitive Product Revenue in FY2018 ($, billion)	Competitive Market Output in FY2018 ($, billion)	Postal Service Market Share in FY2018 (%)	Percentage Change in Competitive Market Output in FY2018 (%)	Appropriate Share for FY2020 (%)
[A]	[B]	[C] = [A] ÷ [B]	[D] = ([B] − CMO_{2017}) ÷ CMO_{2017}	[E] = AS_{2019} × (1 + $\%\Delta LI_{2018}$ + [E])
$18	$111	16.22%	5.20%	11.36%
$20	$111	18.02%	5.20%	11.36%
$22	$111	19.82%	5.20%	11.36%
$24	$111	21.62%	5.20%	11.36%
$26	$111	23.42%	5.20%	11.36%
$28	$111	25.23%	5.20%	11.36%

Source: I use hypothetical values for [A] and [B]. Calculations for [D] and [E] use the PRC's estimations. The PRC estimates that the Competitive Market Output in fiscal year 2017 (CMO_{2017}) was $105.515 billion. *See* 2018 NPRM in RM2017 1, *supra* note 2, at 6765. In addition, the PRC estimates that the appropriate share in fiscal year 2019 (AS_{2019}) will be 10.8 percent. *Id.* at 6767. I assume for simplicity of exposition that the percentage change in the Postal Service Lerner Index in fiscal year 2018 ($\%\Delta LI_{2018}$) will be 0 percent.

As Table 2 demonstrates, for a given value of the Competitive Market Output (column [C]), different values of the Postal Service's market share of competitive products (column [D]) will have no direct effect on the appropriate-share calculation (column [F]) for fiscal year 2020. In other words, under

[169] *Id.*

the methodology proposed in the PRC's 2018 NPRM, the calculated appropriate share will not decrease or increase in response to changes in the Postal Service's market share. Thus, the PRC's Competitive Market Output fails to reflect changes in the Postal Service's market share with respect to competitive products.

Similarly, the Postal Service Lerner Index would not reflect changes in the Postal Service's market share. Although the PRC speculates that increased revenue "*would likely* take the form of increased profitability," increased revenue is also consistent with decreased profitability if the Postal Service cuts prices to expand revenue. Obviously, price and revenue are inversely related when demand is own-price elastic. Demand for the Postal Service's competitive products is likely own-price elastic due to the existence of close substitute products. As I have explained in Part III.A, the Postal Service has the incentive to expand output at the expense of profit. Under such circumstances, the relationship between the Postal Service Lerner Index and changes in the Postal Service's market share is ambiguous.

C. The Proposed Formula's Failure to Reflect Changes in the Package-Delivery Market or Changes in the Postal Service's Competitors

In analyzing changes to the package-delivery market and the Postal Service's competitors, the PRC argues in its 2018 NPRM that "[o]verall growth in the market is directly reflected in the Competitive Market Output." However, as I have explained in Part IV.A, the Competitive Market Output would not capture industry growth from innovations or vertical entry by large retailers.

The PRC also argues that "[b]oth the Postal Service Lerner Index and Competitive Market Output reflect the entry and exit of firms from the market." However, because changes in the Competitive Market Output and the Postal Service Lerner Index can be attributed to demand shocks and supply shocks in the package-delivery market (which typically occur independently of entry or exit), one cannot draw any meaningful conclusions about the effects of entry and exit by inspecting only the Postal Service Lerner Index and the Competitive Market Output. Any insight into those effects would be entirely speculative. For example, market output might increase purely due to population growth and inflation, regardless of entry into or exit from the market. Moreover, the PRC's argument that entry (or exit) would necessarily change the Postal Service's Lerner Index suffers from the same erroneous assumption that the Postal Service is a profit maximizer.

D. Summation

Although the PRC speculates that its proposed formula in the 2018 NPRM would capture prevailing competitive conditions in the package-delivery market, the Commission fails to establish a sound relationship between the components of its proposed formula and the three market conditions that it purports to capture in that formula.

VII. The Lack of Support on Scientific or Factual Grounds for the PRC's Responses to Previous Submissions on the Appropriate Share

In its 2018 NPRM, the PRC fails to address satisfactorily the comments on the appropriate share that I have previously submitted to the Commission on behalf of UPS. Here, I describe the five instances in its 2018 NPRM in which the PRC directly responds to my comments, and I explain why the PRC's responses are incorrect in each instance.

A. The Postal Service's Net Competitive Advantage

First, in response to "UPS's and Sidak's comments asserting that the Postal Service has a competitive advantage and that the playing field is not level," the PRC alludes to section V of its 2018 NPRM (in which it reviews and purports to update the FTC's 2007 study) and "concludes that the FTC's finding that the Postal Service operates at a net competitive disadvantage relative to its competitors remains valid." To the contrary, as I explain in Part I, the PRC's characterization of the FTC's 2007 report continues to be false, misleading, and unscientific. The PRC ignores the substantial evidence indicating that the Postal Service benefits from its postal monopoly in its provision of competitive products. The PRC has not "cogently explain[ed] why it . . . exercised its discretion" not to consider those benefits, and its conclusion that the Postal Service operates at a net competitive disadvantage is consequently arbitrary and capricious.

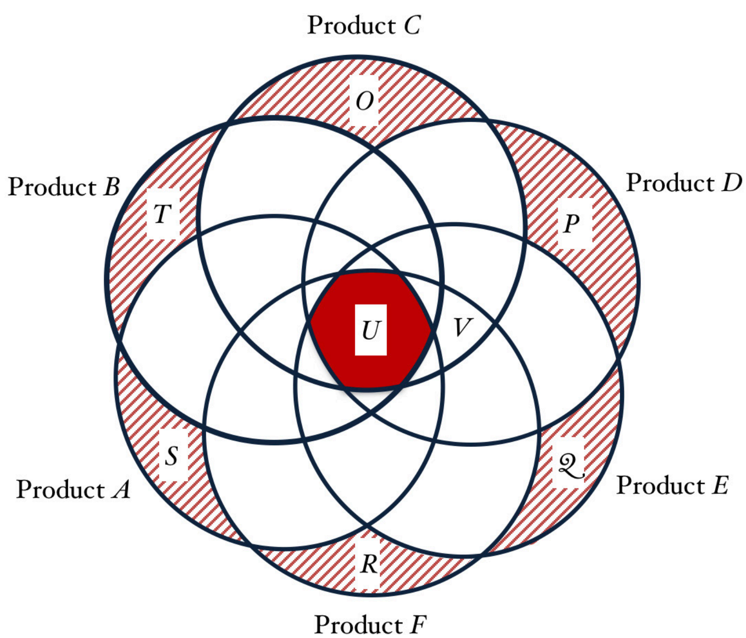
B. The Postal Service's Failure to Attribute Combinatorial Costs

Second, in response to "UPS's, Sidak's, and [Professor Dennis] Carlton's assertions that competitive volume is driving a larger percentage of the Postal Service's institutional costs, the Commission finds in its 2018 NPRM that this assertion misconstrues the nature of institutional costs, which, by definition, do not have a reliably identifiable causal relationship with any specific Postal Service product(s)." That conclusion is fallacious. It results directly from the PRC's refusal to recognize and attribute combinatorial costs that are incremental to subsets of the Postal Service's products, so that the PRC can enable greater attribution of the Postal Service's costs.

The PRC incorrectly ignores any indirect attribution of common costs incurred across subsets of two or more (but not all) products, including two or more competitive products. This knowing refusal by the PRC to seek greater attribution of the Postal Service's costs flouts principles that the scholarly literature on regulatory economics has recognized for more than four decades. It bears emphasis that the incremental cost of producing a given product always depends on the other products that the firm produces and the order in which the firm introduces those products. In a multiproduct firm like the Postal Service, no single incremental cost of producing product X exists. In a firm with three or more products, a new category of costs emerges: costs incurred jointly by some *subset* of the firm's products. Such costs are neither incremental to the production of a single product nor part of the overhead that all products collectively share. Instead, those joint costs are incremental to the production of a grouping of products.

As the number of products increases, the amount of joint costs will typically increase (provided that the firm derives some cost savings—namely, economies of scope—from producing each product in combination with others). Figure 6 illustrates individual incremental costs, joint costs, and overhead in a firm with six products.

Figure 6. Costs in a Six-Product Firm



Source: Original figure.

The shaded regions *O*, *P*, *Q*, *R*, *S*, and *T* represent the individual incremental costs of the six respective products. The solid red center area *U* represents the true overhead costs that all six products share. The remaining portions of Figure 6, left unshaded for clarity, are the joint costs shared between different subsets (combinations) of the firm's six products. For example, area *V* represents the costs that Product *C*, Product *D*, Product *E*, and Product *F* incur in common (to the exclusion of Product *A* and Product *B*).

This simple Venn diagram enables one to visualize how joint costs can become very large, and individual incremental costs can become very small, as the number of products that the firm produces increases. The Postal Service produces at least 45 different products.[170] The direct result of the PRC's willful choice to ignore combinatorial costs is to exaggerate the share of the Postal Service's total costs that are deemed unattributable and thus erroneously lumped into the residual category of institutional costs (corresponding to area *U* in Figure 6). It is important to understand that, owing to the PRC's deficient distinction between attributable costs and institutional costs, the Commission has consciously chosen to ignore a rigorous and long-established line of economic analysis for cost attribution that consequently ensures that the method that the PRC proposes for calculating the appropriate share in its 2018 NPRM would be unscientific and unreliable.

C. *The Postal Service's Incentives to Price Competitive Products Below the Level of a Profit-Maximizing Firm and to Expand Its Scale of Operations*

Third, the PRC contends in its 2018 NPRM that, "[w]ith regard to Sidak's view that the Postal Service is incentivized to underprice its competitive products in order to increase the scale of its operations, the Commission finds that given the low volume of competitive products relative to the Postal Service's overall operations, underpricing competitive products would not be effective in significantly expanding the Postal Service's scale."[171] This statement is a *non sequitur*. The PRC ignores, as I explain in Part I, that the volume of competitive products has grown over time.

The PRC's statement also ignores the revealed preferences of the Postal Service. The Postal Service's actions imply that the enterprise considers package delivery to be the key to its future as a business. Compelling evidence that supports that factual inference includes the Postal Service's decision to design its new fleet of capacious trucks around the demand for the delivery

[170] U.S. Postal Service, Public Cost and Revenue Analysis Fiscal Year 2016, at 1–5 (2016); Postal Regulatory Commission, Annual Compliance Determination Report: Fiscal Year 2015, at 24 (2016), https://www.prc.gov/sites/default/files/reports/Final_2015_ACD.pdf.

[171] 2018 NPRM in RM2017-1, *supra* note 2, at 6780.

of packages (as opposed to the demand for the delivery of flats).[172] The Postal Service has said that cost savings from its "Phase 2 Network Rationalization 2.0" will "better position the Postal Service to make needed investment in package processing and other automation equipment, and in [its] delivery fleet, which will help [it] to grow [its] package business." [173]

That inference—that the Postal Service considers package delivery to be the key to its future as a business—finds further evidence in how the enterprise chooses to spend its advertising dollars. Its 2017 television commercial about Priority Mail products, which continues to appear on television as of April 2018, begins by proclaiming, "This is a story about mail and packages."[174] However, this 30-second commercial is plainly *not* about market-dominant mail products, as depictions of the posting or delivery of what appear to be market-dominant pieces of mail appear for at most a second or two. The vast majority of the postal transactions depicted in the commercial consists of Priority Mail boxes being picked up from or delivered to the shipping and receiving bay of various businesses—including Petco, DVD.com (part of Netflix), buybuy Baby, Tinkerson & Co., and Vermont Teddy Bear—while the narrator speaks of "people who rely on us to deliver their dreams."[175] The narrator states: "They're handing us more than mail. They're handing us their business."[176] "And while we make more e-commerce deliveries to homes than anyone else in the country," the narrator continues, "we never forget that your business is our business."[177] While the video overlays the text, "PRIORITY: YOU, usps.com/prioritybusiness," the narrator concludes, "The United States Postal Service. Priority: you."[178]

In addition to ignoring such evidence of the Postal Service's revealed preference to stake its future on package delivery rather than the delivery of market-dominant mail, the PRC contends that "the incremental cost test

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172 *See* Aaron M. Kessler, *Reinventing the Mail Truck*, N.Y. Times (Mar. 5, 2015), https://www.nytimes.com/2015/03/06/automobiles/the-mail-truck-is-a-classic-and-thats-a-problem-for-a-modern-post-office.html ("[T]he United States Postal Service has announced it will replace its fleet of Grumman mail trucks with what it calls its next-generation delivery vehicle. The goal is to harness new technologies, increase fuel efficiency and help the Postal Service better compete on package deliveries with the likes of FedEx and United Parcel Service."); National Association of Letter Carriers, *Car and Carrier*, Postal Rec., Aug. 2017, at 13, https://www.nalc.org/news/the-postal-record/2017/august-2017/document/08-2017_car.pdf ("Details of what is expected in the [Postal Service's new] vehicles have emerged, based on the requirements USPS has put forward. One requirement: Letter carriers must be able to stand up in the vehicle and walk to the rear of the vehicle, where more room for packages is expected."); *see also* Ryan ZumMallen, *AM General Tops Reader Poll for Next USPS Mail Truck*, Trucks (May 14, 2018), https://www.trucks.com/2018/05/14/am-general-tops-usps-mail-truck/.

173 *See Our Future Network*, U.S. Postal Serv., https://about.usps.com/news/electronic-press-kits/our-future-network/ofn-phase-2-faqs.htm.

174 *See* USPS TV Commercial: People, https://www.ispot.tv/ad/wdqQ/usps-people; *see also New USPS TV Spot Now Airing*, Postal Times (May 15, 2017) https://www.postaltimes.com/postalnews/new-usps-tv-spot-now-airing/.

175 USPS TV Commercial: People, *supra* note 185.

176 *Id.*

177 *Id.*

178 *Id.*

restricts the extent to which the Postal Service can underprice competitive products . . . [, and] there is no evidence that the Postal Service has attempted to expand its scale at the expense of profit."[179] However, the PRC discloses no factual basis in its 2018 NPRM to support that economic conclusion.

D. *Protecting Market-Dominant Mailers Through the Appropriate Share*

Fourth, in response to "Sidak's and FUR's [Former Utilities Regulators'] assertions that a higher appropriate share is necessary to protect market dominant mailers," the PRC concludes in its 2018 NPRM that its "proposed approach protects market dominant mailers because it ensures that competitive products are contributing an amount to institutional costs that is reflective of market conditions."[180] However, the PRC discloses no basis in its 2018 NPRM to explain why an appropriate share "that is reflective of market conditions" would necessarily result in a "higher appropriate share" or would necessarily "protect market dominant mailers." Consequently, the Commission fails to respond directly to my specific economic argument.

E. *The Harm to Dynamic Competition Caused by the Postal Service's Inefficient Pricing of Competitive Products*

Fifth, in response to "Sidak's and Carlton's comments concerning dynamic efficiency," the PRC concludes in its 2018 NPRM that "the market itself does not appear to be lacking innovation," and that the PRC's "formula-based approach is designed to address changes in both static and dynamic efficiency because it raises the appropriate share in response to both increases in the Postal Service's market power and growth in the overall market, whether such growth is based on increases in demand, entry of new firms, or innovations in the industry."[181] That explanation is uninformative for two reasons.

First, that companies are investing in innovation does not mean that the Postal Service's pricing practices are not harming dynamic efficiency. If the rate of innovation is slower than it otherwise would be in the counterfactual world in which the Postal Service maximizes profits from competitive products, then there still is harm to dynamic competition. The PRC makes no attempt to present such analysis, and its argument consequently lacks a sound economic basis.

Second, as I explained in Parts III and IV, the Postal Service Lerner Index does not accurately reflect the Postal Service's market power, and the Competitive Market Output does not accurately measure the size of the package-delivery industry. Consequently, the PRC's proposed formula in its 2018

[179] 2018 NPRM in RM2017-1, *supra* note 2, at 6780.
[180] *Id.*
[181] *Id.* at 6781.

NPRM would not address the concern, expressed in my initial declaration on the appropriate share to the PRC in January 2016, that "[t]he Postal Service's inefficient pricing of competitive products . . . distorts dynamic competition in the markets for those products, to the detriment of consumers."[182]

VIII. The Postal Service's and Amazon's Erroneous Recommendation That the PRC Should Eliminate the Appropriate-Share Requirement

On April 16, 2018, several parties—including the Postal Service and Amazon—submitted comments to the PRC in response to its 2018 NPRM. In their comments, both the Postal Service and Amazon oppose the PRC's adoption of its proposed formula-based approach for calculating the Postal Service's appropriate-share requirement. Instead, both the Postal Service and Amazon urge the PRC to eliminate the appropriate-share requirement. However, their recommendation relies on speculative arguments that lack economic evidence.

A. The Postal Service's Argument That the PRC Should Eliminate the Appropriate-Share Requirement

In response to the PRC's 2018 NPRM, the Postal Service argues that it "operates at a net competitive disadvantage compared to its private-sector competitors."[183] Despite claiming that "competitive products have contributed far more to the Postal Service's institutional costs than the required minimum contribution," the Postal Service argues that "ongoing changes and uncertainties in the market . . . *could* easily threaten the Postal Service's ability to sustain its recent competitive product contribution levels over time."[184] On the basis of those arguments, the Postal Service concludes that "the current appropriate share requirement should be eliminated, because it is not currently a necessary regulatory tool."[185]

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182 2017 Sidak Initial Declaration, *supra* note 13, at 1.

183 Comments of the United States Postal Service in Response to Order No. 4402 at 1, Institutional Cost Contribution Requirement for Competitive Products, Postal Regulatory Commission, Dkt. No. RM2017-1 (filed Apr. 16, 2018) [hereinafter Postal Service Comments on the 2018 NPRM].

184 *Id.* (emphasis added).

185 *Id.* at 3. The Postal Service also said in its comments on the PRC's 2018 NPRM that, "should the [PRC] decide to implement the proposed new approach, the Postal Service recommends two refinements . . . : (1) measuring CMO [Competitive Market Output] in real, inflation-adjusted dollars rather than nominal dollars; and (2) using FY 2017, rather than FY 2007, as the baseline year to begin calculations under the new formula." *Id.* However, as I explained in Part IV, the Competitive Market Output itself is a flawed measure of market conditions. Consequently, the Postal Service's first recommendation is irrelevant. Although I agree with the Postal Service that "[t]here is simply no basis for applying the new formula beginning in FY 2007" and that "it would be inappropriate, and arbitrary, to assign a *hypothetical* value representing AS_t for purposes of the appropriate share calculation," it would be equally (if not more) arbitrary to apply the PRC's proposed formula using 2017 as the baseline year and a 5.5 percent figure as

However, the Postal Service's argument that the PRC should eliminate the appropriate-share requirement is erroneous and speculative. First, the Postal Service is incorrect in arguing that it operates at a competitive disadvantage relative to competitors because of the "federally-imposed obligations and constraints that increase the Postal Service's costs."[186] As I explained in Part I, the benefits that the Postal Service derives from its statutorily granted postal monopoly and letter-box monopoly are not trivial, and the value of those monopolies that accrues to the Postal Service's competitive products likely exceeds any costs that the enterprise faces in connection with discharging its unique legal obligations. In other words, economic evidence supports the conclusion that the Postal Service likely operates at a net competitive *advantage* in the provision of competitive products.

Second, the Postal Service's argument that it *might* be unable to "sustain its recent competitive product contribution levels"[187] *if* market conditions change is speculative. In addition, that argument does not support reducing or eliminating the appropriate-share requirement because, regardless of the level of the appropriate-share requirement, it is still true that the Postal Service *might* be unable to sustain certain contribution levels from competitive products *if* market conditions change. Moreover, the Postal Service conspicuously neglects that market conditions could also evolve so as to increase further the actual contribution from competitive products over time. In that case, a 5.5-percent appropriate-share requirement would be "too low," such that the Postal Service would face "an artificial competitive advantage"[188]—a risk that the Postal Service itself says the PRC "has repeatedly emphasized."[189]

That the contribution to institutional costs from competitive products has consistently exceeded the appropriate-share requirement does not render the appropriate-share requirement an unnecessary regulatory tool. The Postal Service's argument is akin to observing a rush-hour traffic jam and concluding that speed limits should be eliminated because they are not binding on motorists at that moment. Like speed limits, the appropriate-share requirement exists to bind the Postal Service's behavior when market conditions do not indirectly enforce the appropriate-share requirement.

the baseline appropriate-share value (as the Postal Service recommends) when data for the Postal Service's *actual* contribution to institutional costs are available. *Id.* at 23–24 (emphasis in original).

186 *Id.* at 1.

187 *Id.*

188 2018 NPRM in RM2017, *supra* note 2, at 6759.

189 Postal Service Comments on the 2018 NPRM, *supra* note 194, at 7.

B. Amazon's Argument That the PRC Should Eliminate the Appropriate-Share Requirement

Amazon also urges the PRC to "eliminate the minimum contribution requirement."[190] I rebut here two erroneous assumptions underlying Amazon's recommendation: (1) the assumption that an increased appropriate-share requirement would suppress competition and (2) the assumption that competitive conditions in the package-delivery industry justify eliminating the appropriate-share requirement.[191]

1. Amazon's Incorrect Assumption That an Increased Appropriate-Share Requirement Will Necessarily Suppress Competition

Amazon incorrectly assumes that any increase in the appropriate-share requirement will necessarily "suppress price competition," because it supposedly would force the Postal Service to raise its prices of competitive products to "uncompetitive levels."[192] In Amazon's view, those higher prices would create a price umbrella that would encourage the Postal Service's competitors to raise their own prices for similar products. Amazon conjectures that such an outcome would harm U.S. consumers and businesses through increased prices, would impede the Postal Service's ability to discharge its universal service obligation, and would undermine the Postal Service's financial stability.[193]

Amazon does not explain how a higher appropriate-share requirement would necessarily force the Postal Service to raise its prices of competitive products. Amazon says that "the actual contribution of competitive products to the Postal Service's institutional costs has risen to more than $7 billion, or more than 23 percent, *i.e.* four times the current minimum contribution

[190] Comments of Amazon.com Services, Inc. on Order No. 4402 at 40, Institutional Cost Contribution Requirement for Competitive Products, Postal Regulatory Commission, Dkt. No. RM2017-1 (filed Apr. 16, 2018) [hereinafter Amazon Comments on the 2018 NPRM].

[191] In addition to the arguments to which I directly respond in this article, Amazon argues in its comments on the 2018 NPRM that regulatory precedent supports the elimination of the appropriate-share requirement. *Id.* at 35–37. Amazon's argument is incorrect. To support its argument, Amazon provides two examples—one from the freight transportation industry and one from the oil pipeline industry. *Id.* However, neither example supports Amazon's argument that the PRC should eliminate the appropriate-share requirement. Unlike the Postal Service, U.S. freight railroads and Texas Eastern Products Pipeline—to which those examples allude—are *private* regulated firms. *See Freight Rail Overview*, U.S. Dep't of Transp., Fed. R.R. Admin., https://www.fra.dot.gov/Page/P0362 ("The U.S. freight railroads are private organizations that are responsible for their own maintenance and improvement projects."); *Company Overview of Texas Eastern Products Pipeline Company LLC*, Bloomberg, https://www.bloomberg.com/research/stocks/private/snapshot.asp?privcapId=7372077. Because those firms maximize profits (unlike the Postal Service), it is improbable that they would attempt to engage in below-cost pricing. The decisions of the Interstate Commerce Commission in the freight transportation industry and FERC in the oil pipeline industry that Amazon cites are thus uninformative and unhelpful to the PRC as it interprets the appropriate share.

[192] Amazon Comments on the 2018 NPRM, *supra* note 201, at 2.

[193] *Id.*

of 5.5 percent."[194] If that claim is true, then the Postal Service will not be compelled to raise the prices of competitive products even if the PRC were to raise the appropriate-share requirement to 23.2 percent.

Even assuming for sake of argument (but contrary to fact) that an increased appropriate-share requirement would compel the Postal Service to raise the prices of its competitive products, it does not necessarily follow that the Postal Service's competitors also would raise their prices of similar products. For example, in an industry characterized by economies of scale, a price increase by the Postal Service would shift demand to FedEx and UPS on the margin and could thus lead to a cost decrease for one or both of them. Those lower unit costs would mitigate FedEx's and UPS's incentives to raise prices in response to the Postal Service's price increase.

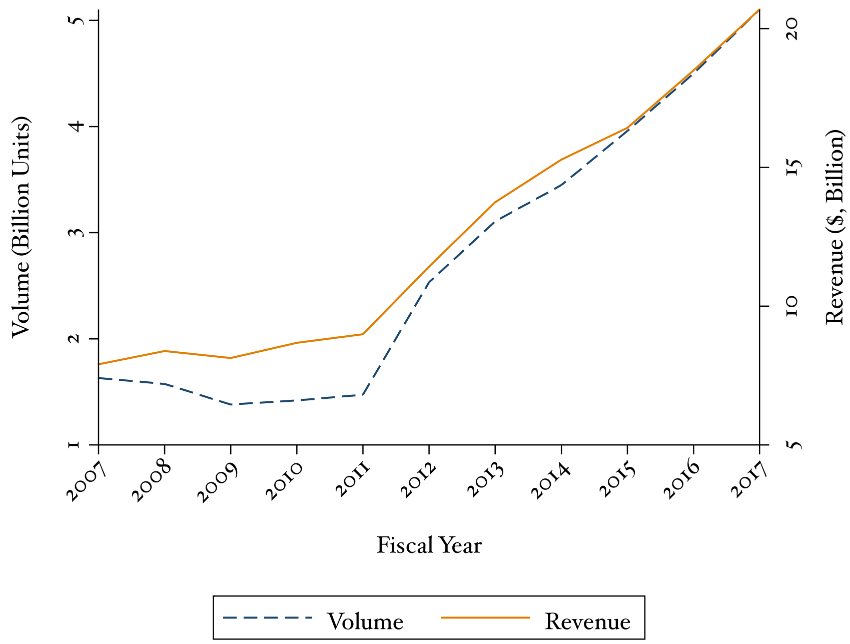
2. *Amazon's Assumption That Competitive Conditions in the Industry Justify Eliminating the Appropriate-Share Requirement*

Amazon says that (1) private carriers such as UPS and FedEx are "thriving, expanding, and investing in innovation, and new competitors are poised to enter the industry," and (2) "[t]he competitive playing field for package services continues to favor private carriers over the Postal Service."[195] On the basis of those assertions, Amazon argues that "[c]ontinued enforcement of a minimum contribution requirement is unwarranted by the structure of the package delivery business."[196] Amazon's argument is wrong because it relies on incomplete and erroneous analysis.

Amazon neglects that the Postal Service—like UPS and FedEx—is also "thriving, expanding, and investing in innovation" in its competitive-product business. As Figure 7 shows, the Postal Service's volume from competitive products has more than tripled from 2007 to 2017; moreover, that growth in unit volume is accelerating.[197] Likewise, the Postal Service's revenue from competitive products has grown by a factor of 2.62 from 2007 to 2017, and that revenue is growing at an increasingly high rate.

[194] *Id.* at 3.
[195] *Id.* at 21.
[196] *Id.*
[197] *See* PRC, Library Reference PRC-LR-RM2017-1/1 in RM2017-1, *supra* note 73, tab 2 ("Inputs").

Figure 7. Volume and Revenue from the Postal Service's Competitive Products, Fiscal Years 2007–2017



Source: PRC, Library Reference PRC-LR-RM2017-1/1 in RM2017-1, *supra* note 73, tab 2 ("Inputs").

The Postal Service also publicly disclosed its intention to invest in "package processing and other automation equipment, and in [its] delivery fleet . . . to grow [its] package business."[198] That the Postal Service (like its private competitors) is "thriving, expanding, and investing in innovation" with the appropriate-share requirement in place demonstrates that the appropriate-share requirement is not harming the Postal Service.

Amazon not only neglects to consider the Postal Service's growth and investment in competitive products, but also misconstrues the purpose of the appropriate-share requirement. Apart from protecting private competitors from the Postal Service, the appropriate-share requirement serves to protect consumers of market-dominant products from bearing a disproportionate share of institutional costs.[199] Amazon's argument that the appropriate-share requirement is unnecessary because private carriers are thriving consequently is misguided and orthogonal.

Amazon is also incorrect in arguing that the Postal Service operates at a net competitive disadvantage. Amazon relies primarily on the FTC's 2007

198 *See Our Future Network*, U.S. Postal Serv., *supra* note 184.
199 *See* Sidak, *Maximizing the U.S. Postal Service's Profits from Competitive Products*, *supra* note 34, at 646.

analysis to support that argument.[200] However, as I explained in Part I, the FTC's 2007 analysis is incomplete, outdated, and erroneous. The Postal Service enjoys increasingly substantial benefits from its postal and letter-box monopolies in the provision of competitive products, and those benefits likely outweigh the costs that the Postal Service's statutory burdens impose on the enterprise.

C. Amazon's Mischaracterization of My Previous Work on the Economics of Regulation

Amazon mischaracterizes my previous work on the economics of regulation in an attempt to discredit my argument that the PRC should increase the Postal Service's appropriate-share requirement. Here, I address two such mischaracterizations.[201] First, Amazon argues that "Sidak has disputed the incentive effects of price cap regulation in this proceeding, but this position is at odds with his prior work on the subject."[202] Amazon is misinformed. My previous work on the subject of price-cap regulation concerned a private, regulated firm, not a state-owned enterprise (let alone one with a chronic history of operating losses). Amazon's mischaracterization of my argument before the PRC is therefore disingenuous and false.

Moreover, I have written that, if set at the correct level, the appropriate-share requirement might be the optimal regulatory tool.[203] That I have previously taken the position that price-cap regulation was preferable to rate-of-return regulation in the telecommunications industry in the 1990s does not necessarily mean that I would support *any* price cap unconditionally. Put differently, that I consider the current 5.5 percent appropriate-share requirement to be economically unsound does not contradict my earlier positions on price-cap regulation. Unlike Amazon and the Postal Service, I do not argue that the appropriate-share requirement should be abolished. Rather, I accept the existence of the statute as given and argue that the PRC has not currently set the requirement at its optimal level.

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200 Amazon Comments on the 2018 NPRM, *supra* note 201, at 21.

201 Amazon also mischaracterizes my work with Daniel Spulber to support its argument that the appropriate-share requirement imposes an unfair cost-reporting obligation on the Postal Service. *See* Amazon Comments on the 2018 NPRM, *supra* note 201, at 22 (citing J. Gregory Sidak & Daniel F. Spulber, *Deregulation and Managed Competition in Network Industries*, 15 Yale J. on Reg. 128, 133–34 (1998)).

202 *Id.* at 14 (citing J. Gregory Sidak & Daniel F. Spulber, Deregulatory Takings and the Regulatory Contract: The Competitive Transformation of Network Industries in the United States 44 (Cambridge Univ. Press 1997) ("A preferable way to reduce the incentive and opportunity for anticompetitive cross-subsidization is to replace cost-of-service regulation with price caps."); J. Gregory Sidak & Daniel F. Spulber, *Monopoly and the Mandate of Canada Post*, 14 Yale J. on Reg. 1, 53 (1997) ("Price caps . . . reduce the incentive for the firm to cross-subsidize new lines of business through the misallocation of costs, for the firm may charge up to its maximum price whether or not its accounting costs for the regulated service change."); J. Gregory Sidak & Daniel F. Spulber, Protecting Competition from the Postal Monopoly 101–04 (AEI Press 1996)).

203 *See* Sidak, *Maximizing the U.S. Postal Service's Profits from Competitive Products*, *supra* note 34, at 661.

Second, Amazon argues that "Sidak has taken a position in this proceeding—supporting fully allocated cost ratemaking—that contradicts his peer-reviewed work condemning this approach as inherently arbitrary."[204] Amazon's argument is again disingenuous and false. Although I have said that the PRC should increase the appropriate-share requirement, I have not supported an appropriate-share requirement based specifically on fully allocated costs. Moreover, my criticism of fully allocated cost-based regulation is irrelevant to the facts of this proceeding. As I have written previously, the Postal Service should seek to maximize profits from its sale of competitive products.[205] The optimal markup for the Postal Service's competitive products is the one that will generate the maximum contribution to the recovery of the institutional costs of the Postal Service (and, if possible, enable the Postal Service actually to earn a profit).

Conclusion

On April 12, 2018, President Trump issued an executive order establishing the Task Force on the United States Postal System to evaluate the Postal Service's operations and finances. The Postal Service's current business model is financially unsustainable, as evidenced by its chronic history of operating losses. The statutory monopolies that Congress granted the Postal Service cannot protect it from the shift in consumer taste resulting from technological innovation in electronic communication and commerce. In this context, the Task Force is asked to evaluate, among other things, the expansion of the package delivery market, the Postal Service's role in competitive markets, and the decline in letter-mail volume as they relate to the Postal Service's ability to self-finance. The proper identification of the Postal Service's appropriate-share requirement is central to whether the Postal Service can achieve a financially sustainable future. In its second statutorily mandated review of the Postal Service's appropriate-share requirement, the PRC proposes using a formula-based approach to calculate the appropriate share of institutional costs that the Postal Service must recover from its sale of competitive products. However, the PRC's proposed rule is unscientific. The PRC consequently should not adopt the proposed formula-based approach. If promulgated as a regulation, it would be arbitrary and capricious, unsupported by substantial evidence, and clearly erroneous.

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[204] Amazon Comments on the 2018 NPRM, *supra* note 201, at 28–29 (citing William J. Baumol & J. Gregory Sidak, Toward Competition in Local Telephony 56 (AEI Press 1994); Sidak & Spulber, Deregulatory Takings and the Regulatory Contract, *supra* note 213, at 42, 46).

[205] *See* Sidak, *Maximizing the U.S. Postal Service's Profits from Competitive Products*, *supra* note 34.