Postal Innovation Zones: A New Avenue for USPS Reform

Abstract

In the United States, letter pickup, sorting, and delivery is almost entirely controlled by the United States Postal Service (USPS). The federal agency's monopoly status has led to delivery performance issues, fiscal mismanagement, and slow adoption of new postal technologies. I examine these issues by exploring the history of the USPS and its predecessor, including attempts by private actors to compete in the postal sector. I also examine postal liberalization case studies from the United Kingdom and Germany, and conclude that these countries offer significant lessons for the US as members of Congress debate different USPS reform options. I then propose comprehensive postal liberalization, in which the USPS' monopoly is eliminated and companies are encouraged to compete for letter mail delivery business.

Introduction

Throughout its history, the United States Postal Service (USPS) and the United States Postal Department (USPD) that preceded it have enjoyed near-exclusive access to the American letter mail delivery market. To mail a letter, individuals and businesses must either go to a Post Office or one of the USPS' designated suppliers to purchase postage. Even though mailboxes are typically located on private property, and individuals and businesses could choose to purchase a variety of mailbox models with different coloring and lettering, mailboxes are considered federal property and only the USPS is legally authorized to deposit mail there.[1]

Since the official adoption of national, prepaid postage stamps in the mid-nineteenth century and the first mail delivery via automobile in 1906, the mail delivery process has changed little over time. Moderate changes to management style and regulatory oversight have not had a significant impact on innovation and delivery performance in the postal sector, and periodic attempts by competitors to start their own delivery services have been met with hostility and legal action by the government.

Over the past thirty years, management and fiscal problems have escalated, as the result of bureaucratic malaise and the rise of digital alternatives to mail. The USPS has tried to make up for declining letter revenues by expanding their package business, but the magnitude of letter losses has been difficult to offset. The agency's underpricing of "competitive" products such as packages discourages competition in the sector, and has a negative impact on the USPS' finances.

[1] United States Postal Service, Postal Inspection Service, "Protecting Yourself from Mailbox Vandalism."

This paper examines the present state of affairs in the postal sector and explores avenues for reform that would counter existing problems and encourage postal innovation. The experience of other countries in the developed world, which have also seen their posts lose mail volume and corresponding revenue, is examined and analyzed in detail. Nations such as Germany and the United Kingdom (UK) responded to these issues by ending their posts' monopolies on mail delivery, while maintaining their posts' obligation to provide universal services to households in rural areas that may go underserved in normal market conditions.

These arrangements are difficult to finance and administer, and governments have had to encourage continued universal service without excessively supporting incumbent providers and deterring competitors in the process. Despite these challenges, Germany and the UK have facilitated more dynamic, responsive postal sectors in their countries, with increased innovation along all stages of end-to-end delivery. These case studies offer important lessons to countries considering postal liberalization, and demonstrate how the US can encourage postal innovation without privatizing or dismantling the USPS.

Section I of this paper discusses the history of the USPS (and USPD), and analyzes how the agency's monopoly was developed, altered, and enforced over the course of American history. **Section II** discusses alternatives to the status-quo, including bailing out the USPS and pursuing liberalization, which could mean privatization, ending/relaxing the USPS' monopoly, or a combination thereof. **Section III** highlights the experiences of foreign countries in opening their postal sectors to competition, and lessons for Congress and the USPS. **Section IV** proposes a multi-year agenda for Congress to introduce competition into the postal sector, and trial "Postal Innovation Zones" in which private companies take the place of the USPS entirely.

I. Background and History of the USPS

Since the appointment of Benjamin Franklin as the first Postmaster General in 1775, the federal government has taken a leading role in the collection and delivery of mail in the United States. This control has taken on various forms, as the government has repeatedly evaluated and reevaluated how it should organize its postal infrastructure.

The first significant revolution occurred in 1847, when the federal government determined that the sender of mail, as opposed to the receiver, should bear the delivery costs.[2] This change helped to bring regularity and standardization to the postal delivery process; before, recipients would often simply refuse mail that they did not want to pay for. This innovation, however, did not belong to the Post Office. In fact, the first stamp issued in the United States was created by the private, New York-based City Despatch Post in 1842.[3]

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[2] John F. Ross, "Stamps, What an Idea!", *Smithsonian Magazine*, January 1998.
[3] Richard R. John, Jr., "Private Mail Delivery in the United States during the Nineteenth Century: A Sketch," *Business and Economic History* (1986): 135-147.

The Despatch Post was also responsible for the creation of the first widely-usable mailboxes in the United States. While government carriers placed boxes along delivery routes as early as 1833, these were abruptly removed a few years later, "greatly to the annoyance and inconvenience of the citizens living at a distance of two or three miles from the Post-office."[4]

Despatch's key innovation was the placement of letter boxes in 112 of the most "populous and eligible situations," with mail affixed with a prepaid stamp collected thrice-daily. Yet, the combination of prepaid postage, well-spaced letter boxes, and thoroughly-planned, frequently-travelled delivery routes represented a unique threat to the Post Office. As MacBride (1947) recounts, "More competition, than the Government could stand, this company was taken over within six months and Greig became a letter carrier for the Government...Incidentally, such private local delivery services grew rapidly, some having the semi-official approval of the Post Office Department or of the individual postmasters, and many issued their own stamps throughout the 'stampless' period of the Government mail service."[5] Despite the clear efficacy of a stamp-based prepaid system over the existing receiver-pays model, the Post Office waited five years before debuting its first national stamp (decorated with the likeness of Benjamin Franklin). After the Despatch Post was bought out by the Post Office in 1842, however, the government continued Despatch's practice of using prepaid stamps in New York.[6]

During this period without a national stamp system, another company arose to challenge the federal Post Office. In 1844, radical political activist Lysander Spooner formed the American Letter Mail Company (ALMC) to compete with the federal government on mail delivery.[7] Although Spooner originally intended the company to serve as a political statement about the government suppressing competitive activity, ALMC succeeded for years in challenging the Post Office on prices and network coverage. Similar to the Despatch Post, ALMC used stamps instead of the government's receiver-pays system.

Spooner's company, however, had a far wider reach than the Despatch did. Within six months of the company's founding, ALMC had offices in Boston, New York City, Baltimore, and Philadelphia. The company's large network, combined with the efficiency of its prepaid system, allowed ALMC to charge 6 ¼ cents for each half ounce letter, compared to the government's prevailing 12 cent levy on residents receiving half ounce letters.[8] Private posts such as the ALMC used innovations in labor structure as another way to keep costs low compared to the government. Not all postal workers had to be full-time, salaried staff; businessmen and laborers making intercity trips would agree to double as couriers at a sufficient price point.

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[4] United States Postal Service, "Mail Collection Boxes: A Brief History."
[5] Van Dyk Macbride, "Barnabas Bates and the Battle for Cheap Postage: Associations, Pressure Groups, and Propaganda," 1947, retrieved from *libertarianism.org*.
[6] Ibid.
[7] Kelly B. Olds, "The Challenge to the U.S. Postal Monopoly, 1839-1851," 15 Cato J. 1 (1995-1996): 1-24.
[8] Ibid.

Private posts were commercially successful, but government officials saw their competition as an unacceptable risk to the legitimacy of the national post office. Even before the introduction of ALMC to the marketplace, the government was losing considerable business to private posts. In 1841, the New York Postmaster estimated that private operations along the New York City-Boston delivery route had reduced volume handled by the government by a third.[9]

Less than a week after the ALMC commenced operations, the House of Representatives passed a resolution calling for the investigation of competitors to the Post Office.[10] In conjunction with Congressional scrutiny, the federal government began cracking down on private couriers. On March 30, Spooner and subordinates were arrested and fined on a train in Maryland, on the suspicion of delivering letters. Although an April decision by the Massachusetts District Court found that railroad companies could not be held liable for their passengers illicitly carrying mail, Spooner and his agents faced the continued prospect of law enforcement boarding trains, arresting them, and ensnaring them in lengthy court battles.[11]

As the federal government legally pursued private posts, it also sought to copy their competitors' business practices. In March 1845, Congress reduced the price of letter postage (within a 300 mile radius) from 12 cents to 5 cents.[12] After lowering prices across the board and debuting a prepaid national stamp in 1847, persistent Post Office deficits gave way to surpluses. Spooner, unable to compete with a Post Office that offered similar prices via a similar payment system with the full backing of the federal government, ended his company in 1851.[13]

Rise of the Parcel Post

Though the Post Office successfully fended off private posts, the rise of package delivery companies at the turn of the twentieth century posed unique challenges for the government. Before 1913, the Post Office restricted itself to handling packages that were more than four pounds, and national debate abounded as to whether the Post Office should enter into the package business.[14] In the last two decades of the nineteenth century, large companies such as Sears, Roebuck and Company and Montgomery Ward offered consumers catalogues of their extensive ware offerings (i.e. books, musical instruments, furniture), and interested consumers could have products delivered to them if a carrier had service in that particular town. Rural America had little access to these private services, and Populists in Congress and successive

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[9]Richard R. John, Jr., "Private Mail Delivery in the United States during the Nineteenth Century: A Sketch," *Business and Economic History* (1986): 135-147.
[10] Ibid.
[11] Ibid.
[12] Jane Kennedy, "Development of Postal Rates: 1845-1955," *Land Economics* 33, no. 2 (1957): 93-112.
[13] Olds, "Challenge."
[14] United States Postal Service, Office of Inspector General, "100 Years of Parcel Post," December 20, 2013.

Presidential administrations advocated for a nationwide, inexpensive package delivery service to be run by the Post Office.[15]

Although the Populists initially failed to convince their Congressional peers, they did manage to secure the creation of Rural Free Delivery (RFD), which provided free and heavily-subsidized letter and periodical delivery to rural Americans that were used to irregular, subpar service at high rates. By creating RFD, rural lawmakers succeeded in creating a constituency of farmers that regularly received mail and craved an expansion of vastly-improved postal services.[16]

Cosmopolitan newspaper magnate and congressman William Randolph Hearst introduced parcel post legislation in 1904, amidst a larger push in America's cities for a national delivery service on par with virtually all other industrialized countries. Kielbowicz notes: "Magazines spotlighted the success of foreign parcel posts in articles replete with photographs of tidy post offices, food tilled wicker baskets. and modem delivery vehicles…'Let every woman write to her husband's congressman and speak her mind!' the editor commands in a postscript."[17] Faced with robust rural and urban support, "parcel post" rider language was attached to an appropriations bill signed by President William Howard Taft in 1912.[18]

Postage weight limits were initially increased from 4 to 11 pounds, which meant that the Post Office would still be unable to compete with private carriers on the delivery of heavier items such as furniture. But the legislation also gave the Postmaster General far more flexibility than before in determining rates and weight, with Congress removing itself as the barrier to policy changes.[19] Adjustments could be made as long as they were purposed to, "promote the service to the public or to insure the receipt of revenue from such service adequate to pay the cost thereof," subject to the regulatory consent of the Interstate Commerce Commission (ICC).[20]

Making the ICC the ultimate arbiter of prices and restrictions put the Post Office in a similar position to private carriers, who also enjoyed wide latitude in changing their rate and weight policies but faced regulatory pushback if changes were seen as too onerous for consumers. By 1918, the Post Office increased the maximum weight limit to 70 pounds for local deliveries and 50 pounds for long-haul deliveries.[21]

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[15] Richard B. Kielbowicz, "Government Goes into Business: Parcel Post in the Nation's Political Economy, 1880–1915," *Studies in American Political Development* 8, no. 1 (1994): 150-172.
[16] Kernell, Samuel, and Michael P. McDonald, "Congress and America's Political Development: The Transformation of the Post Office from Patronage to Service." *American Journal of Political Science* (1999): 792-811.

[17] Kielbowicz, "Government Goes into Business."
[18] Ibid.
[19] Kennedy, "Development of Postal Rates."
[20] James I. Campbell Jr., "Universal Service Obligation: History and Development of Laws Relating to the Provision of Universal Postal Services," *Postal Regulatory Commission*, December 2008.
[21] Kennedy, "Development of Postal Rates."

The Post Office mimicked the practices of private companies, leveraging large rail networks and expanding mail processing facilities across the country to facilitate heavier and heavier deliveries. But even though Congress had lessened its role as postal regulator, it still provided annual appropriations for the Post Office, set wages for departmental employees, and established preferential postage rates for a variety of publications (i.e. educational materials, labor union pamphlets).[22] This basic status-quo would remain in place for more than a half-century, culminating in the fundamental reorganization of the Post Office.

The Post Office Becomes a "Business"

Congress's control of Post Office labor policies became contentious in the 1960s, as workers charged that they were underpaid and work conditions were substandard. Unlike workers in private companies, employees of the Post Office were not allowed to collectively bargain with their employer. Poor relations between the federal government and postal workers culminated in the U.S. postal strike of 1970, which was the largest strike in American history not led by a national union.[23] Services were disrupted for more than a week, before the Nixon administration ordered workers back to their jobs and summoned the National Guard to deliver mail in the meantime. Although pay negotiations were ultimately successful and no workers were fired, the dire situation prompted the administration and Congress to consider legislation to mend the dysfunctional labor relations that brought American mail to a standstill.[24]

The Postal Reorganization Act of 1970 gave workers an eight percent raise, and formalized collective bargaining power. [25] The legislation also formally ended the Postal Department, rebranding government mail operations under the United States Postal Service (USPS), an independent agency that was to survive absent significant governmental appropriations. Congressional funding to the USPS was capped to 10 percent of postal costs until 1979, at which point Congress was mandated to begin a one percentage point per year phase-out of pay rates. Rates would be placed under the purview of the newly-created Postal Rate Commission, which could accept requests by the USPS to change prices as long as proposed prices were equitable and reflected underlying costs.[26]

In theory, the USPS was now on a stronger footing, and had an improved incentive to appeal to consumers since Congress no longer underwrote the majority of postal expenses. Yet, the Postal Service continued to tightly guard their monopoly on letter mail. In 1976, the independent agency threatened legal action against a New York Cub Scout pack that was trying to raise funds by delivering Christmas cards. In 1981, Government Accountability Office (GAO) director

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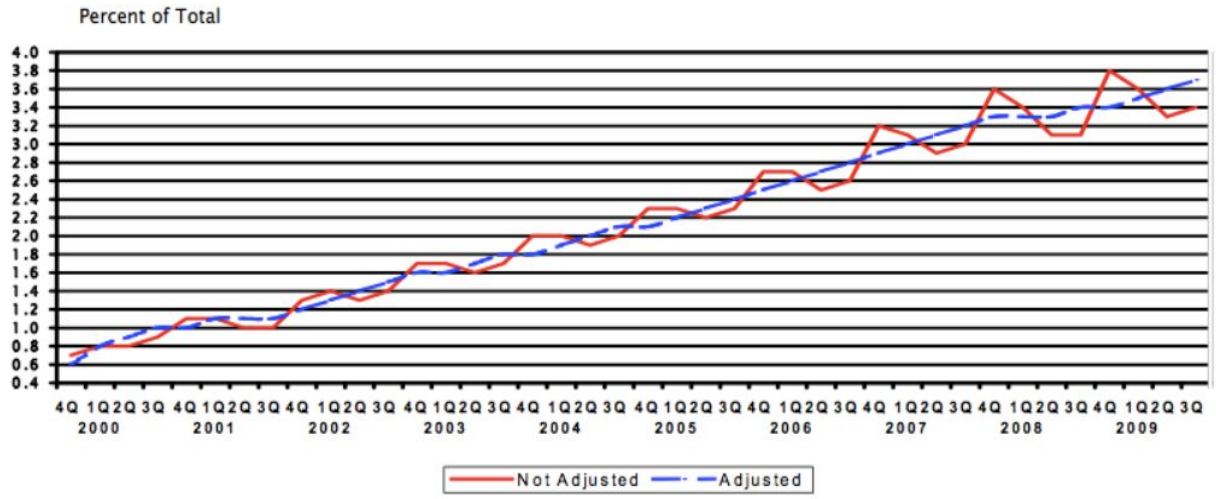
[22] Ibid.
[23] Philip F. Rubio, "Organizing a Wildcat: the United States Postal Strike of 1970." *Labor History* 57, no. 5 (2016): 565-587.
[24] Ibid.
[25]"Public Law 91-375, An act to improve and modernize the postal service, to reorganize the Post Office Department, and for other purposes," *Government Publishing Office*, August 12, 1970.
[26] Ibid.

William J. Anderson testified before Congress that, “the Service’s rates generally are noncompetitive and deliveries are too often untimely and inconsistent.”[27]

Postal Accountability and the Rise of “E-Commerce”

Beginning in the late 1990s, sales made on the internet began to have an effect on package delivery throughout the U.S. “E-Commerce” rose from under 0.8 percent of all retail sales in 1999 to more than 2.5 percent in 2006.

Figure 1: Quarterly U.S. Retail E-Commerce Sales as a Percent of Total US Retail Sales, 1999 - 2009 [28]



Note: “Adjusted” refers to seasonal adjustment.

As package volume increased, the popularity of traditional letter mail began to wane. The increased use of email meant that various forms/documentation, invitations, and educational material could be sent instantly and free of charge. Postal leadership saw package delivery as a more viable long-term revenue source than letter-mail delivery, and sought more flexibility to keep package rates low in response to rising competition.

In 2006, Congress granted the Postal Service greater pricing flexibility by passing the Postal Accountability and Enhancement Act (PAEA).[29] PAEA split products into two key categories: “market dominant” and “competitive” products. “Market dominant” products are confined to the USPS' monopoly, and include letter mail under 13 ounces, periodicals, marketing mail, and

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[27] United States Government Accountability Office, “The Effectiveness of the Postal Reorganization Act of 1970 (Statement of WIlliam J. Anderson Before the House of Representatives,” December 10, 1981.
[28]United States Department of Commerce, Census Bureau, “Quarterly Retail E-Commerce Sales 3rd Quarter 2011,” November 17, 2011.
[29] “Public Law 109-435, An act to reform the postal laws of the United States,” *Government Publishing Office*, December 20, 2006.

special services such as money orders. “Competitive” products mainly consist of commercial package services, but also include the expedited shipping of regular letter mail (via Priority Mail and Priority Mail Express).[30]

Under the system set up by the 1970 reform, the Postal Rate Commission had to approve any and all price changes, a time-intensive process that left the Postal Service unable to compete with package delivery companies that could rapidly change prices to meet market demands. PAEA allowed the Postal Service to adjust prices for “market dominant” services, as long as price increases did not exceed inflation (as measured by the Consumer Price Index).[31]

Congress provided an exception to the CPI price cap for “extraordinary and exceptional” circumstances, if the Commission (now changed to the Postal Regulatory Commission; PRC) agreed with the USPS' emergency designation. For “competitive” products, the USPS can price products freely as long as prices cover a minimum threshold of attributable costs (set by the PRC). The PRC, however, creates the assumptions that are used in the cost attribution formula used to determine prices.[32]

Issues with current pricing system

The pricing regulations enacted under PAEA were purposed to prevent the USPS from raising prices on its monopoly letter products to subsidize its more competitive package operations. Lawmakers also entrusted the USPS with sufficient pricing flexibility to maintain and expand their market share of package deliveries.

In practice, this balance was never achieved. The PRC ruled in 2007 that “competitive” products must only cover 5.5 percent of attributable costs, a figure that was only raised in January 2019 to 8.8 percent of attributable costs.[33][34] This low threshold is difficult to reconcile with the high and rising package delivery volume as a percentage of total volume in the USPS system.

According to the PRC’s 2018 Annual Compliance Review, competitive products comprise 45 percent of USPS' volume by weight.[35] But as a result of setting a low minimum bar with competitive product cost attribution, the USPS attributed less than a third of its total costs to competitive products. Less than 10 percent of depreciation costs for portable scanners is

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[30] Ibid.
[31] Ibid.
[32] Ibid.
[33] United States Postal Regulatory Commission, “Administrative Practice and Procedure, Postal Service.” Docket No. RM2007-1, November 9, 2007.
[34] United States Postal Regulatory Commission, “Order Adopting Final Rules Relating to the Institutional Cost Contribution Requirement for Competitive Products,” Docket No. RM2017-1, January 3, 2019.
[35] United States Postal Regulatory Commission, Annual Compliance Review, 2018,” Docket No. ACR2018, December 13, 2018.

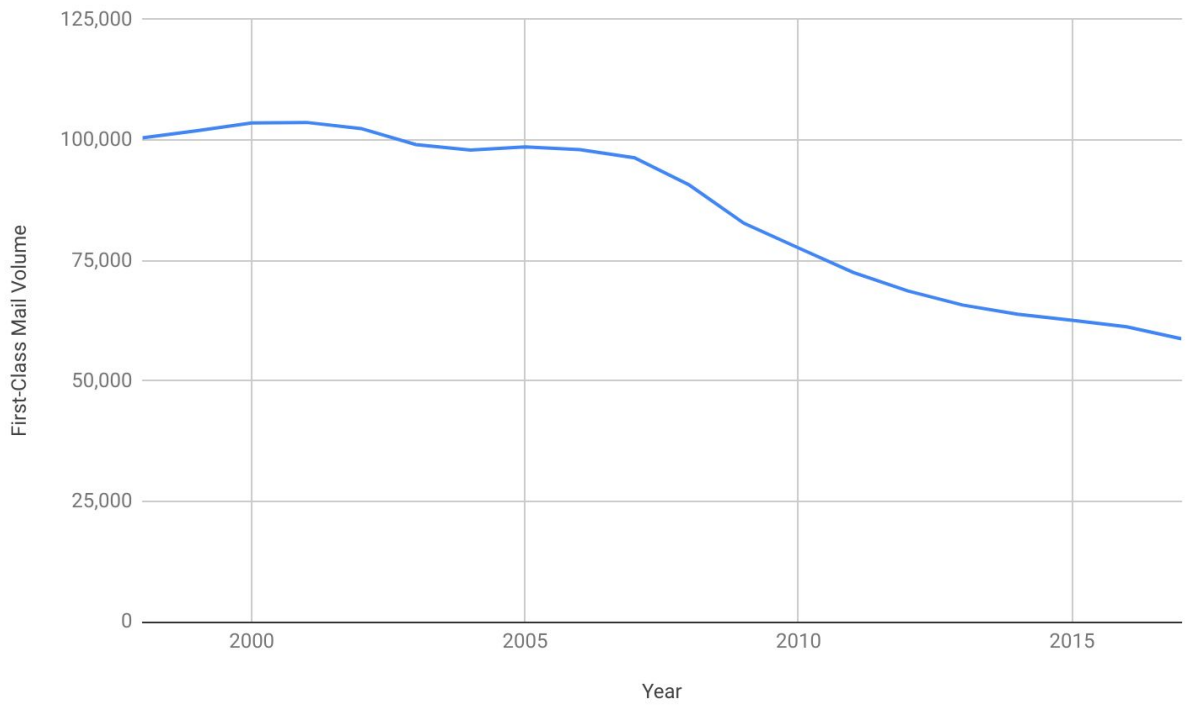
attributed to competitive items such as packages, despite the Postal Service's acquisition of said devices specifically to facilitate package deliveries.[36]

As the USPS systematically understates competitive product costs (and therefore likely prices packages below most approximations of attributable costs), the CPI cap for market dominant products has proved non-binding. In 2013, for instance, the USPS requested an exigent rate increase for the "extraordinary and exceptional" circumstance of the Great Recession.[37] The requested - and approved - request to the PRC for a 4.3 percent surcharge on market dominant products across-the-board. This special rate increase, in addition to annual inflation adjustments, remained in place until 2016 when it was removed by order of the PRC.[38] The USPS' prolonged use of an exigent surcharge set a precedent allowing above-CPI price increases during periods of sustained economic growth.

While the USPS appears to be using high letter mail prices to subsidize package operations, this equilibrium will only continue to hold if the agency can continue to earn additional revenue by raising postage rates. Even if the price of letter postage does not exceed the rate of inflation in most years, alternative ways of communicating such as emails and calls are becoming cheaper in real terms. As Figure 2 shows, the rise of digital and cellular communications has led to a persistent decline in letter mail over the past few decades.

Figure 2: USPS First-Class Mail Volume, 1998-2017[39]

[36] United States Postal Service, Office of Inspector General, "Package Delivery Scanning - Nationwide," Report No. DR-AR-18-001, October 27, 2017.
[37] United States Postal Regulatory Commission, "Order Granting Exigent Rate Increase," Docket No. R2013-11, December 24, 2013.
[38] United States Postal Regulatory Commission, "Order on Removal of the Exigent Surcharge and Related Changes to the Mail Classification Schedule," Docket No. R2013-11, March 29, 2016.
[39] United States Postal Service, "First-Class Mail Volume Since 1926," February 2019.



In 2013, the USPS Office of the Inspector General (OIG) found a wide array of price elasticites for different mail categories, ranging from .09 for first-class mail (i.e. regular letter mail) to .70 for standard mail (i.e. mass advertising, newsletters).[40] Reduced business for the USPS due to price increases, the rise of digital communications, or a combination thereof results in less revenue for the USPS, yet price increases on market dominant products continue.

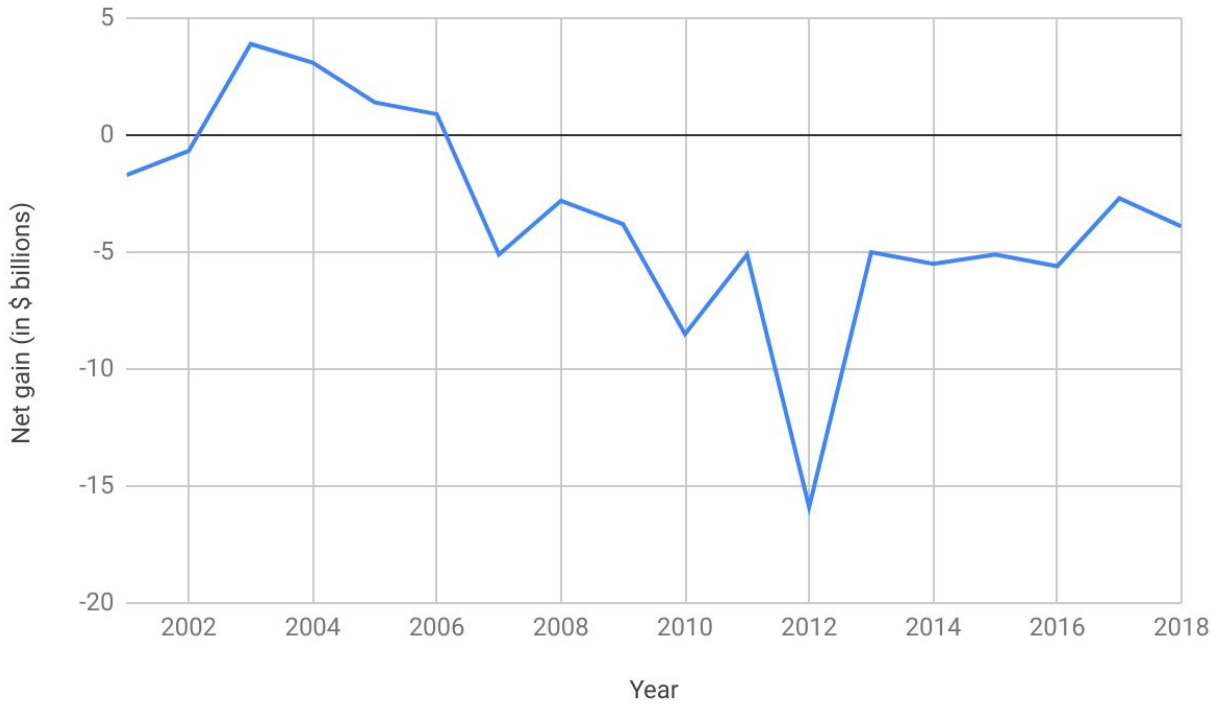
In January of 2019, the Postal Service raised first-class letter mail rates from 50 to 55 cents, the largest percentage increase in stamp prices since the American Civil War.[41] This price increase is unlikely to reverse declining revenues, as previous year-over-year stamp price increases have failed to counteract long-term revenue declines. For FY 2018, the USPS reported first-class mail revenues of $25 billion, down from $25.7 billion the previous year and $28.2 billion five years prior (FY 2013).[42] [43]

Capital and technological demands

[40] United States Postal Service, Office of Inspector General, “Analysis of Postal Price Elasticities,” Report No. RARC-WP-13-008, May 1, 2013.
[41] United States Postal Service, “U.S. Postal Service Announces New Prices for 2019,” October 10, 2018.
[42] United States Postal Service, “FY (2001-2018) Annual Report to Congress.”
[43] Ibid.

Persistent declines in revenue have led to large net losses for the agency over the past decade. Figure 3 shows increasing deficits at the USPS, most recently in FY 2018 with a $3.9 billion reported net loss.

Figure 3: Net Gain or Loss by the USPS, 2001-2018[44]



As net losses increase, the agency faces large capital investment demands. Beginning in FY 2019, the USPS plans to increase capital spending by $820 million annually for a decade to replace up to 180,000 existing USPS trucks, the majority of which are more than twenty years old.[45] According to a 2019 analysis by a taxpayer watchdog group, the USPS' stated preference for vehicles manufactured in America, coupled with the agency's intention to pursue electric vehicles, will increase acquisition costs by more than $220 million per year (or roughly $2.2 billion over the next decade).[46]

The USPS is also prioritizing vehicle prototypes large enough to facilitate growing package volumes. Photos released of truck prototypes, such as the one being developed by Mahindra, show a "broad, boxy cargo area, which is a top requirement for the USPS due to larger

[44] Ibid.
[45] United States Government Accountability Office, "U.S. Postal Service: Projected Capital Spending and Processes for Addressing Uncertainties and Risks," Report No. GAO-18-515, June 2018.
[46] Taxpayers Protection Alliance, "Postal Perils and Promise: a Primer on Reform," January 2019.

packages needing to be shipped."[47] Despite the anticipation of increasing package volumes, e-commerce companies are creating their own closed logistical networks with little role for the Postal Service. Amazon, for instance, now delivers 5 to 10 percent of its own products, and maintains a fleet of roughly 7,000 trucks and 50 airplanes.[48] As was the case with Lysander Spooner's company, e-commerce companies and private shippers can hire contractors to deliver parcels without entering into costly, long-term contracts.

But the USPS has little labor flexibility, due to the concessions granted to existing workers via the American Postal Workers Union (APWU). According to the US Treasury, the 1970 Postal Reorganization Act, "authorizes collective bargaining on compensation, some benefits, and conditions of employment, and postal unions are therefore able to negotiate compensation, benefits, and working conditions. Given their federal employee status and the role that the USPS plays in the economy, USPS employees maintain a unique collective bargaining position. They can bargain for wages and benefits as private sector unions do, without the same level of risk that their company will go out of business." As a result, "the USPS' labor costs continue to represent a significantly higher proportion of total operating costs than its private sector competitors. Additionally, 'no layoff' clauses exist in many of the USPS' collective bargaining agreements, limiting management's ability to adapt the USPS' business model."[49]

Ostensibly to safeguard these "no layoff" clauses, the APWU has reacted strongly to any measure by the USPS to save labor costs. In 2013, the USPS and Staples agreed to a "Retail Partner Expansion Program," in which the agency would set up postal kiosks in more than 500 Staples locations across the country. The APWU protested this decision, filing a complaint with the National Labor Relations Board (NLRB) that alleged the USPS had improperly subcontracted agency work to non-agency employees. In January 2017, the NLRB ordered the USPS to end their agreement with Staples.[50]

The implicit ban on selling postage at private business locations makes it difficult for the USPS to consolidate redundant operations, which likely cost the agency tens of millions of dollars per year. According to the USPS, more than 1,800 postal facilities across the country claim a walk-in revenue of less than $27,500 annually and are within 10 miles of another Post Office.[51]

Closing some of these redundant locations and converting others to kiosks within commercial stores would likely save $20 million per year, which would enable the USPS to invest in innovations that could in turn increase consumer satisfaction. USPS self-service kiosks, for

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[47] Anthony Alaniz, "Bigger Truck For Bigger Packages: Mahindra USPS Prototype Spied," *Motor1.com*, April 7, 2018.
[48] Sarah Perez, "Amazon Air expands with 10 more cargo aircraft, bringing fleet to 50 planes," *TechCrunch*, December 21, 2018.
[49] United States Treasury, "United States Postal Service: A Sustainable Path Forward," December 2018.
[50] Joe Davidson, "U.S. Postal Service to Halt Retail Sales at Staples Stores after Union Complaints," *Washington Post*, January 5, 2017.
[51] United States Postal Regulatory Commission, "Advisory Opinion on Retail Access Optimization Initiative," Docket No. N2011-1, December 23, 2011.

instance, allow consumers to weigh letters, flats, and parcels up to 70 pounds and purchase the appropriate postage. These kiosks, however, are in under 3,000 locations, whereas there are currently more than 31,000 retail Post Offices nationwide.[52]

Many consumers are deterred by long lines at Post Office locations and lack access to self-service kiosks, opting instead to buy stamps at convenience or grocery stores and leaving mail in their mailboxes for their carrier to pick-up. While USPS door-to-door services are generally reliable, inefficient routing may lead to high-than-optimal average delivery times, wasted agency expenditures (i.e. fuel and overtime hours), and lower employer morale. The IG reported in September 2018 that virtually all of the USPS' 229,000 delivery routes were static and reviewed/updated infrequently. In very limited circumstances (i.e. peak holiday season, some Sunday delivery routes) the USPS "uses real-time GPS and local traffic data to prioritize and recalculate an optimal sequence of deliveries," but without learning software to optimize based on previous delivery experiences.[53]

The lack of advanced, integrated software results in product tracking updates that are often infrequent and delayed by several hours. Consumers frequently experience tracking error messages, and around 2 percent of packages were scanned and "tracked" with no corresponding location data.[54] Unlike some of its private competitors, the USPS does not provide consumers with real-time map tracking updates. This lack of data makes it difficult for the USPS to recover lost mail, which was estimated by the PRC in 2012 to comprise 1.7 percent of total mail volume.[55]

Examining several applications and software algorithms that could improve USPS tracking and delivery, the IG concluded, "optimization software, predictive analytics, and coordination platforms...could allow the Postal Service to bring further cost efficiencies and customer value to its parcel delivery business model."[56] The failure to leverage potential savings and invest in these technologies has led to declining USPS performance satisfaction. Over the FY 2015 to FY 2017 period, "recent USPS delivery performance" declined from 77 to 74 percent, and "tracking information accuracy" fell from 84 percent to 79 percent.[57]

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[52]United States Postal Service, "Save Time by Visiting a USPS Self-Service Kiosk," November 3, 2017.
[53] United States Postal Service, Office of Inspector General, "Coordination and Optimization Technologies and Postal Applications," Report No. RARC-WP-18-014, September 6, 2018.
[54] United States Postal Service, Office of Inspector General, "Package Delivery Scanning: Chicago District," Report No. DR-AR-16-003, March 31, 2016.
[55] United States Postal Regulatory Commission, "Mail Processing Network Rationalization Service Changes: 2011," Docket No. N2012-1, June 22, 2012.
[56] United States Postal Service, Office of Inspector General, "Coordination and Optimization Technologies and Postal Applications," Report No. RARC-WP-18-014, September 6, 2018.
[57] United States Postal Service, Office of Inspector General, "Spring 2018 Semiannual Report to Congress," May 31, 2018.

Underinvesting in innovation also exposes the USPS to significant risk. In November 2018, the IG reported serious flaws in the USPS' administering of its cybersecurity program, finding poor long-range financial planning and accounting anomalies. The Office reports that, “while the Postal Service has used the [Decision Analysis Reporting] DAR process to fund [some] annual operating expenses for DARs I and II, expenses associated with day-to-day operations are not considered to be investments per Postal Service policy.”[58]

This analysis reporting, which is required by the USPS to formulate a comprehensive cybersecurity plan, is not classified properly and is irregularly funded as a result. The IG concludes, “Without an ongoing cybersecurity operating budget, the Postal Service may not be able to appropriately secure the enterprise to ensure uninterrupted service delivery, preserve customer and employee trust, and maintain competitive products in the digital marketplace.”[59]

The lack of attention to cybersecurity planning and funding has already resulted in breaches that allowed hackers access to millions of consumers’ private information. Also in November 2018, cybersecurity news and investigative firm KrebsOnSecurity reported on a glitch on the USPS website which, “allowed anyone who has an account at usps.com to view account details for some 60 million other users, and in some cases to modify account details on their behalf.”[60]

The flaw resulted from a weakness in the website’s “application program interface,” which mediates how website components such as databases and web pages respond to one another. KrebsOnSecurity was notified of the issue by an independent researcher, who had contacted the Postal Service about the problem in mid-2017 but never received about a response. After KrebsOnSecurity reported publicly on the issue, however, the USPS fixed the issue in a matter of days.[61]

The USPS’ communications and cybersecurity deficiencies leave the agency vulnerable to belligerent individuals, organizations, and foreign governments that could steal valuable information from high-profile consumers. The Postal Service’s “Informed Delivery” program, for instance, sends enrollees pictures of the outside of envelopes that will be delivered to said enrollees later that day.[62]

Hackers with access to private “Informed Delivery” communications could use pictures to reconstruct sensitive corporate communications, or use addresses on letters to and from celebrities to track down relatives for ransom/blackmail purposes. An October 2017 review of the program by KrebsOnSecurity suggests that, “the service is wide open to abuse by a range

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[58] United States Postal Service, Office of Inspector General, “Cybersecurity Decision Analysis Reports Review,” Report No. IT-AR-19-002, November 19, 2018.
[59] Ibid.
[60] *KrebsOnSecurity*, “USPS Site Exposed Data on 60 Million Users,” November 18, 2018.
[61] Ibid.
[62] United States Postal Service, “Informed Delivery by USPS.”

of parties, mainly because of weak authentication and because it is not easy to opt out of the service."[63]

II. Alternatives to the Status-Quo

As the USPS' productivity has declined and financial losses have accumulated over the past two decades, individual commentators, think-tanks, and advocacy groups have proposed reforms designed to reverse losses and improve efficiency and overall operations. Each major proposed reform has its own costs and benefits, which can be mitigated or exacerbated depending on the details of said proposal.

Taxpayer bailout of the USPS

No major organization with published commentary on USPS-related issues over the past decade has explicitly called for a federal bailout of the agency. Nonetheless, proposed postal reform legislation regularly features "soft bailouts" in which taxpayer funds are indirectly leveraged to support the USPS. Most recently, the 2018 Postal Service Reform Act (S. 2629), introduced by Democratic Sens. Tom Carper, Del., Claire McCaskill, Mo., and Heidi Heitkamp, N.D., and Republican Jerry Moran, R-Kansas, would automatically enroll postal retirees and family members into the federally-funded Medicare program.[64]

While USPS enrollees would have to pay Medicare premiums, program premiums do not fully cover costs. Increasing the number of Medicare enrollees would likely put a further strain onto the program and hasten the depletion of the Medicare Part A Trust Fund (scheduled for depletion in 2026). Additionally, the legislation would excuse the USPS from outstanding payments it currently owes the Treasury for funding retirement obligations, placing another indirect pressure on taxpayers.[65]

Nonetheless, the USPS Postmaster General & CEO Megan J. Brennan issued a supportive statement on the legislation, calling for Congress to "enact a postal reform bill soon that puts the Postal Service on a sustainable financial path."[66] In multiple statements supporting the policy of USPS retirees being enrolled onto Medicare, the agency has insisted that it is not in fact seeking a bailout. The agency notes that, "The [Congressional Budget Office] CBO

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[63] *KrebsOnSecurity*, "USPS 'Informed Delivery' Is Stalker's Dream," October 17, 2017.
[64] "2018 Postal Service Reform Act: a bill to improve postal operations, service, and transparency (S.2629)," Introduced in the United States Senate on March 22, 2018.
[65] Ibid.
[66] United States Postal Service, "Statement from Postmaster General & CEO Megan J. Brennan on the Postal Service Reform Act of 2018," March 23, 2018.

estimates...[postal reform legislation]...will achieve $6 billion in savings for the federal government on a unified basis."[67]

But when the CBO scored the Postal Service Reform Act of 2017 (a previous version of the 2018 Postal Service Reform Act), it found that the Medicare component on the legislation would impose net direct spending costs of $4.5 billion on the federal government. Roughly 80 percent of offsetting savings were due to an increase in postage prices established in the legislation, but CBO fails to fully take postage elasticities into account and concedes the fiscal benefit of the price increase would significantly decline after a decade.[68]

Whether direct or indirect, any federal bailout of the USPS would temporarily improve finances at the organization, minimizing or eliminating the agency's large annual reported net losses. But in the medium-to-long term, giving the USPS access to federal funds would provide the agency little incentive to improve management. The USPS' inconsistent use of employee scheduling tools, for instance, regularly results in situations where too many staff members are assigned to postal facilities with relatively little work volume, and vice versa. These scheduling and staffing inefficiencies cost the USPS more than $420 million annually in labor costs, and any incentive for the USPS to address these problems would diminish if the agency were bailed out.[69] Additionally, there's little evidence that a bailout would increase the USPS' adoption of productivity-enhancing technologies.

Dozens of federal agencies with annual appropriations are regularly criticized by their respective IGs for failing to modernize their technologies in line with private sector counterparts. According to a 2008 report by the Government Accountability Office (GAO), 72 percent of federal technology projects developed over the previous five years were poorly planned and experienced budgetary and schedule overruns.[70]

A 2017 GAO report notes that the federal government has made little progress in addressing these concerns, and that federal agencies had failed to implement a majority of the 803 IT-focused recommendations that the GAO had made from 2010 through 2015.[71] One explanation of the gap between public and private innovation has to do with incentives that arise out of competition. The public sector faces little incentive to create new technologies and improve existing ones, as they will not fail financially for failing to keep pace with the technological progress of private companies.

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[67] United States Postal Service, "USPS responds to Townhall.com blog," June 30, 2017.
[68] United States Congressional Budget Office, "Cost Estimate for H.R. 756: Postal Service Reform Act of 2017," June 1, 2017.
[69] United States Postal Service, Office of Inspector General, "Audit Report: Mail Processing Facilities Staffing," Report No. NO-AR-18-004, May 30, 2018.
[70] United States Government Accountability Office,"Informational Technology: OMB and Agencies Need to Improve Planning, Management, and Oversight of Projects Totaling Billions of Dollars," Report No. GAO-08-1051T, July 31, 2008.
[71] United States Government Accountability Office, "Information Technology: OMB Needs to Report On and Improve Its Oversight of the Highest Priority Programs," Report No. GAO-18-51, November 2017.

Privatization and/or Ending Postal Monopoly

Some commentators have argued that, since competition between multiple product/service providers likely results in greater innovation than under monopoly conditions, dissolving the United States Postal Service or selling the organization to private actors would result in the best outcome for consumers. Central Washington University economists Robert Carbaugh and Thomas Tenerelli compare the United States' postal policies with that of five countries (Germany, Netherlands, Sweden, New Zealand, Australia) that privatized or significantly commercialized their postal sectors over the 1985-2005 period.

The scholars find that, "prices have not risen, productivity has increased, costs have decreased, the universal service obligation continues to be met, service quality measured by on-time delivery has not dropped, and overall customer satisfaction (though difficult to measure) seems to have increased."[72] It is difficult to draw broad conclusions from these countries' experiences, as reforms vary significantly in each country examined by Carbaugh and Tenerelli. Germany, for instance, has privatized its post (now under the trade name Deutsche Post DHL Group), and other mail delivery services are allowed to compete with it. Sweden's PostNord is still managed and funded by the Swedish government, but as with Germany, other companies are permitted to sell postage.[73]

A 2017 GAO analysis provides an updated comparison of international posts, and finds that, "six of the countries GAO contacted reported increases in competition after ending their postal delivery monopolies, and some of these countries also reported losses of revenue and market share for the carriers providing universal service."[74] The GAO, however, does not explain how differences in reforms and underlying institutions impact postal innovation.

Neither Carbaugh and Tenerelli or GAO's analysis explain relevant tradeoffs between simply ending postal monopolies and privatizing outright. Posts across the developed world have developed universal service models out of the concern that private companies would undersupply main services to rural areas. It is unlikely, for instance, that a private company would find it profitable to deliver and collect mail from Barrow, Alaska - a town of 5,000 residents 58 miles (and disconnected by road) to the nearest town. Around 1,300 Post Offices with annual revenues below $100,000 are more than 10 miles from the nearest Post Office, and private companies in charge of operations would probably not deem these operations to be viable.[75]

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[72] Carbaugh, Robert, and Thomas Tenerelli. "Restructuring the US Postal Service." *Cato J.* 31 (2011): 129-150.
[73] Ibid.
[74] United States Government Accountability Office, "U.S. Postal Service: Key Considerations for Potential Changes to USPS' Monopolies," Report No. GAO-17-543, June 22, 2017.
[75] United States Postal Regulatory Commission, "Advisory Opinion on Retail Access Optimization Initiative," Docket No. N2011-1, December 23, 2011.

Ending postal monopolies while assigning government posts to rural areas could solve potential problems of underservice, but this approach also has disadvantages. Maintaining public provision in rural areas diminishes any incentive for private companies to find innovative ways to deliver to sparsely populated areas. This approach also entrusts the government with creating a clear line of delineation between “rural” and “urban,” leaving open the possibility that the government postal operator assigns itself an area of operations that could effectively be serviced by private actors. Businesses will likely be hesitant to operate in any area that is already being covered by the government, since governments typically have fewer debt/funding constraints than private companies.

Taking these considerations into account, suspending the current government postal monopoly in well-defined, densely populated areas could result in greater innovation as the result of competition between multiple private actors. A trial suspension of the government monopoly can facilitate technological change without disrupting service to rural areas. The experiences of international posts demonstrate that balancing public and private administration is possible, and can result in greater postal innovation.

III. International Case Studies

Germany

Prior to privatization, Germany’s Deutsche Post was entirely controlled by the federal government, which maintained a monopoly and legal requirement to provide universal service across the country. The Posts and Telecommunications Reorganization Act, passed in 1994, ordered the reorganization of the Post into a joint-stock company, and became an autonomous entity with the ability to make its own business decisions, despite the federal government’s continued ownership of 100 percent of all shares.[76] The legislation required continued federal ownership of company shares through five years, after which the Post would fully transition into majority-private ownership without the monopoly advantages afforded under the previous system.

With the expectation that the company would soon face private competitors that could pose significant challenges to the Post’s business lines, corporate executives created a large-scale technology investment program in 1996. From 1996 to 1998, Deutsche Post mechanized the sorting of letters and parcels at 33 centers across the country, creating dedicated high-tech centers to produce and disseminate sorting machines.[77] As a result, the percentage of letters sorted by machines increased from 25 percent pre-privatization to 85 in 2000.[78] The government retained majority share of the Post until 2003, when it sold 30 percent of its shares to investment firm KfW. As the central government assumed less control of the company,

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[76] Lutz Michael Büchner, "The German Postal reform of 1994," *Annals of Public and Cooperative Economics* 66, no. 4 (1995): 457-477.
[77] *Deutsche Post DHL Group*, “The History of Deutsche Post DHL Group.”
[78] Ibid.

regulators reduced the monopoly privileges afforded to the company. Before 1998, a private letter carrier was only permitted to deliver a 20g letter if they offered an express service that was at least 10 times the cost of the Post. In 1998, competitors were permitted to sell letter postage for 5 times the price of the Post. This was further reduced to 3 times the Post price in 2003, 2.5 times the Post price in 2006, and price floors were completely abolished in 2008.[79]

The company (now Deutsche Post DHL) still provides "universal service" to all households in Germany with no direct subsidies from the federal government. The German government, however, provides a Value-added tax (VAT) exemption for any postal companies that agree to provide universal service, which only Deutsche Post actually manages to achieve. According to a USPS IG report from 2016, "BNetzA believes that Deutsche Post will voluntarily provide the universal service in the coming years too. The reasons are quite simple: If Deutsche Post would discontinue the provision of the full range of the universal service it would suffer damage to its image that would most likely be lower than their expected cost savings. Further, Deutsche Post would probably lose its exemption from VAT."[80]

Despite the Post's unique status in-country as universal carrier and associated tax exemptions, other mail companies have entered the German letter mail market over the past 20 years. In 2005, Dutch postal services provider TNT announced plans to offer end-to-end letter delivery and reach 95 percent of Germany households by the following year. TNT and its commercial partners reached ~90 percent of households by the end of 2006,[81] and the end of price floors for Deutsche Post's competitors in 2008 allowed companies such as TNT to increase their letter market share. According to government statistics, the Post's revenue-based market share in the letters market decreased from 91.5 percent in 2008 to 83.5 percent in 2017.[82] Increased competition has resulted in greater technology testing and adoption by Deutsche Post and her competitors.

The Post, for instance, recently introduced a service that allows consumers' mail to be emailed and scanned to recipients.[83] As mentioned previously, the United States Postal Service has a far more limited version of this service called Informed Delivery, which only scans and emails the front of envelopes to recipients. The service, which as of February 2019 costs 5 euros per month, can only be successfully run by a company with significant public trust and reputational capital. The Post requires subscribers to waive their right to privacy, a tradeoff that many consumers will only take if the company has a positive reputation for safeguarding consumers' data and information.[84]

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[79] Wirtschafts- und Sozialwissenschaftliches Institut, "Liberalisation, privatisation and regulation of postal services in Europe," March 2007.
[80] United States Postal Service, Office of Inspector General, "Funding the Universal Service Obligation," Report No. RARC-WP-16-005, March 21, 2016.
[81] TNT, "2006 Annual Report: All the Right Connections."
[82] Germany Federal Network Agency, "Annual Report 2017."
[83] Ray Schultz, "Germany's Deutsche Post Adds Postal Mail 'E-Scan' Service," *MediaPost*, February 5, 2019.
[84] Ibid.

In 2010, for instance, the Post created a well-publicized "Deutsche Post Security Cup," which rewarded researchers up to 6,000 euros to find significant bugs in their E-Postbrief secure message service.[85] This public shaming of vulnerabilities and awarding of researchers that expose security flaws is similar to practices employed by large technology firms such as Google to identify problems in web browsers. As previously noted, public agencies such as the USPS typically have fewer cybersecurity capabilities and have less of an incentive to take the initiative to earn the public's trust. Occasional lapses in company security require the company to face the public and demonstrate that they can continue to rely on said company for secure services.

Amidst allegations reported in April 2018 by the national newspaper Bild that the Deutsche Post sold "more than a billion" pieces of client microtargeting data to the Christian Democrats and Free Democrats prior to federal 2017 elections, the Post released and publicized its protocols for selling data to clients.[86] Deutsche Post emphasized that they only sell scrambled, anonymized data to clients, which merely indicates a probability where likely voters are likely to be found. The following month, the Post also announced a "supply chain visibility" initiative, in which consumers could access "track-and-trace data, inventory, operational performance and reporting" in real-time on a single platform.[87]

Deutsche Post competitor Hermes Germany GmbH has similarly increased technological capabilities and supply-chain visibility in an attempt to capture market share from the Post. After several successful pilot tests in 2016 and 2017, Hermes introduced an "intelligent routing" system, which equips couriers with dynamic routing software capable of learning from traffic conditions and route efficiency on previous delivery runs.[88] In 2018, Hermes also introduced a enterprise cloud communications platform to be used for notifying consumers of couriers' location in real time for tracked mail. Hermes consumers are now able to track their driver using geo-fencing, and view pictures of packages delivered onto their doorsteps.[89]

The Deutsche Post, Hermes Germany, and other German postal/logistics competitors face constant pressure to innovate, but new investments into e-mail integration, cybersecurity, and dynamic route planning require keeping costs under control. Post-privatization, the Deutsche Post gradually closed and consolidated dedicated post offices, culminating in the 2009 announcement that the company would close all remaining dedicated post offices by the end of 2011.[90] Postal services are fulfilled at Deutsche Post stations located at the retail locations of other companies. Hermes Germany has adopted the same approach, situating its approximately 14,000 locations in retail locations such as bakeries and gas stations.[91]

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[85] Gregg Keizer, "Deutsche Post kicks off bug bounty contest," *ComputerWorld*, August 27, 2010.
[86] *DW*, "Deutsche Post Defends Voter-Microtargeting Data Practice," April 2, 2018.
[87]Deutsche Post DHL Group, "DHL Supply Chain Introduces End-to-End Supply Chain Visibility Platform," May 15, 2018.
[88]Ingo Bertram, "Hermes Introduces Intelligent Route Planning," May 22, 2018.
[89]*Post & Parcel*, "Hermes to Digitally Transform Customer Experience," November 14, 2018.
[90] *Post & Parcel*, "Deutsche Post to Close all of its own Post Offices," August 17, 2009.
[91] Hermes World, "Parcel Shipments in Germany."

Hermes and Deutsche Post locations, however, do not share the same distribution. The Post's locations are more evenly dispersed, in line with the company's assurance that every town or village with a population of over 2,000 would have a manned Post counter in at least one retail location.[92] In contrast, Hermes has greater flexibility to stay out of areas too-sparsely populated to be profitable. Residents of Riesbürg, Fichtenau, and Dürrwangen, for instance, don't have access to a Hermes location in their municipalities.[93] Deutsche Post services these lightly-populated locations, due to their public agreement to uphold the promise of "universal service." Germany maintains a balance between providing universal postal services and producing innovative postal technologies/service improvements through competition.

United Kingdom

The United Kingdom's Royal Mail, originally established in 1516, is the oldest continually-operated government-created post in the world. Like many other international posts, though, the rise of digitization left Royal Mail struggling to maintain its consumer base. In 2001, the Post Office spent £2 million to reverse losses and rebrand as Consignia, but the effort failed to attract significant consumer attention and chief executive John Roberts resigned after failing to reverse £1 billion annual losses.[94] In 2005, Royal Mail regulator Postcomm deliberated for three months to determine the best way for the postal sector to reverse losses and increase stagnant productivity. Postcomm decided to open the mail market up to competition, and implemented this decision of January 1, 2006.[95]

Liberalization, however, did not initially extend to the last-mile of delivery. Competitors were now legally sanctioned to collect, sort, and deliver mail to business and households. TNT Post entered the market pre-liberalization in 2005, and limited itself to delivering heavier-weighted items and letters, as well as express magazine and catalogue deliveries that the Royal Mail did not have a monopoly on.[96] Post-liberalization, the company announced plans to compete with Royal Mail on end-to-end delivery on letters in addition to packages.[97] As the company trialled a letter delivery service in cities such as London and Manchester, TNT challenged Royal Mail's continued "universal service" exemption from the UK's VAT, which fluctuated between 15 to 17.5 percent over the course of the company's court challenge.[98] In April 2009, the European Court of Justice ruled that the Royal Mail is solely entitled to the VAT stamp exemption, as they were indeed the only company to provide universal postal services.[99] Even faced with this significant disadvantage, Royal Mail's chief competitor proceeded with preparations to launch a home delivery letter business. In early 2012, TNT started delivering post to roughly 250,000

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[92] *Post & Parcel*, "Deutsche Post to Close all of its own Post Offices," August 17, 2009.
[93] Hermes PaketShop, "ParcelShops in the vicinity."
[94] Mike Verdin, "Consignia: Nine Letters that Spelled Fiasco," *BBC News*, May 31, 2002.
[95] Bill Wilson, "Opening Mail Provides Postal Challenge," *BBC News*, January 1, 2006.
[96] *Post & Parcel*, "TNT to Take on Royal Mail with UK Delivery Service," October 26, 2005.
[97] Ibid.
[98] PS Tax UK, "VAT Calculator."
[99] *BBC News*, "TNT Loses Royal Mail VAT Action," April 23, 2009.

households in West London using 400 couriers.[100] Royal Mail representatives argued that this competition was unfair and unsustainable.

According to a spokesperson in 2012: “Currently, competitors are allowed to “cherry-pick” higher density, more profitable routes in urban areas and ignore lower density rural areas where delivery is more costly.”[101] TNT did little to dispel these concerns, and in June 2013, further expanded its service to densely-populated south west London, home to roughly 400,000 households. [102] [103] Despite these service expansions, TNT Post had difficulties matching the scale and efficiency of their larger, more established rival.

TNT attempted to gain market share from Royal Mail by increasing investments into technologies that would make the sorting process faster and less labor-intensive. In November of 2013, the company began replacing large, expensive-to-maintain scanning equipment with QubeVu Workstations, which are compact, free-standing devices capable of 3D scanning and obtaining the dimensions, weight, barcodes, and text of mail ranging from postcards to large packages.[104]

Not all innovation in the UK postal market, however, involved new technologies. At the end of 2013, TNT Post relied on bicycles for virtually 100 percent of its “last mile” deliveries, while the Royal Mail was in the middle of an aggressive phasing-out of bicycles in favor of foot deliveries via trolley. TNT’s “End to End” initiative director Gary Robinson explained the cycle-centric approach: “Bikes are low maintenance, economical and the environmental benefits are obvious. As the roads become more congested cycling becomes more favourable.”[105]

Prior to 2012, Royal Mail was unable to utilize its dominant market share to fully compete with other mail services. The government-sponsored company was unable to raise private capital, and limited in its ability to charge different prices and change prices in response to changing market conditions. In 2010, the Conservative-Liberal Democrat Coalition Government agreed to “seek to ensure an injection of private capital into Royal Mail, including opportunities for employee ownership.”[106] This agreement was codified in the Postal Services Act 2011, which authorized the government to sell up to 90 percent of Royal Mail to private investors, with the remaining percentage to be retained by company employees. The initial public offering proceeded in September 2013, and shares were listed on the London Stock Exchange in October of 2013. By the end of the year, the 60 percent of the company (£1.98 million worth of

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[100] *The Telegraph*, “TNT Post Take on Royal Mail with Rival Post Delivery Service,” April 30, 2012.
[101] Becky Barrow, “Postmen threaten to ditch half of their deliveries in bid to protect Royal Mail from 'unfair' competition,” *Daily Mail Online*, December 4, 2012.
[102] Neil Maidment, “TNT Post Steps up Rival Delivery Service to Royal Mail,” *Reuters*, June 13, 2013.
[103] Plumplot, “South West London Population Statistics,” 2017.
[104] *Mailing Systems Technology*, “TNT Post Selects Postea’s Qubevu Dimensioning to Streamline Bulk Mail Operations,” November 6, 2013.
[105] Laura Laker, “Royal Mail to Phase Out Post Bikes Completely in 2014,” *The Guardian*, December 9, 2013.
[106] Her Majesty’s Government (United Kingdom), “The Coalition: our Programme for Government,” 2010.

shares) was sold to individuals and investors. 30 percent of the company was retained by the government, and the remaining 10 percent was given to employees. The government sold half of its remaining share in June 2015, and the other half in October 2015.[107]

After the initial round of privatization, the company announced a £130 million technology investment program, facilitating the purchase of 76,000 hand-held scanning devices, lighter weight trolly cars, and more comprehensive digital monitoring of its mail tracking program. Postal regulator Ofcom[108] noted in its 2013-2014 annual monitoring report that Royal Mail had recently invested in "increased sequence sorting technology," although details were commercially sensitive and could not be disclosed. [109] To streamline operations and save costs, Royal Mail also began consolidating processing facilities management viewed as redundant. Company leadership paired efficiency gains with layoffs and a greater reliance on part-time contractors, taking into account reports from analysts that Royal Mail could support its operations with 7 percent (or 10,000) fewer staff if it were efficient as the Deutsche Post.[110]

Royal Mail's privatization also gave the company the ability to charge different businesses different prices for last-mile delivery, which put TNT Post and smaller competitors in a vulnerable position. Even though TNT had started delivering letters in areas of London and Manchester, most of its business consisted of sorting and processing mail, and then paying Royal Mail to deliver said mail. In January 2014, Royal Mail announced price increases across the board with a conditional surcharge on TNT alone. At that time, TNT had announced plans to begin delivering bulk mail in large UK cities.

Royal Mail announced that, if this rollout moved forward, TNT would have to pay Royal Mail an additional 1.2 percent fee per letter for mail that TNT sorted but then paid Royal Mail to deliver. This pricing structure reflected Royal Mail's concern that TNT would "cherry pick" dense, profitable routes for delivery and leave Royal Mail to deliver to sparsely populated areas which it was obliged to service. By losing the most profitable delivery routes, Royal Mail may have lost its ability to cross-subsidize from wealthier urban areas to poorer rural areas. TNT alleged that this discriminatory pricing was a breach of competition law, and filed a complaint with postal regulator Ofcom. The regulator did not come to a decision until August of 2018, when it announced that it was fining Royal Mail £50 million for abusing "its dominant position by discriminating against its only major competitor delivering letters...The price difference between the price plans would have had a material impact on a delivery competitor's profits, making it significantly harder for new companies to enter the bulk mail delivery market."[111]

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[107] House of Commons Library, "Privatisation of Royal Mail," Report No. 6668, January 6, 2016.
[108] Ofcom replaced Postcomm as the UK government's postal regulator following the Postal Services Act 2011.
[109] Ofcom, "Annual Monitoring Update on the Postal Market Financial Year 2013-14," December 2, 2014.
[110] *Financial Times*, "Royal Mail Needs to Deliver on Modernisation Plans, Post Haste," June 18, 2015.
[111] Ofcom, "Royal Mail Fined £50m for Breaking Competition Law," August 14, 2018.

This finding and penalty, however, happened too late to make any material impact on the postal market. The price increase precluded TNT (which changed its name to Whistl in 2014) from expanding its last-mile mail delivery services, and in May of 2015, Whistl announced that it was suspending its delivery services altogether to focus on sorting and processing mail.[112] Currently, the Royal Mail has complete control over mail delivery, and companies such as Whistl pay Royal Mail to deliver letters.

Lessons from International Posts

In contrast to Germany and the UK, the US continues to maintain a government monopoly on the delivery of letters and small mail save for express premium services. Likely as a result of its monopoly control of the letter market, the USPS significantly under-invests in technology and efficiency improvements, resulting in declining organizational productivity and operational deficiencies identified by the Inspector General.

Posts operating in other countries faced similar technological malaise before their governments opened postal markets to competition and private capital. Liberalizations in Germany and the UK allowed competitors such as Hermes and TNT to introduce their own postal services and gain market share. Real-time routing software that "learns" based on previous traffic patterns, for instance, can lead to faster delivery and increased consumer satisfaction. Allowing consumers to see where in-route their courier is via GPS technology can also lead to increased satisfaction and higher market shares. Not all innovations are reliant on investments into new technology. TNT's letter delivery model, for instance, relied exclusively on bicycles, whereas other postal companies use vans, trolley cars, foot couriers, or a combination thereof. A competitive process allows companies to experiment with these different approaches and ascertain best practices.

In these countries, incumbent posts are also a significant source of innovation. These providers are typically still "universal service" providers, and enjoy significant accompanying benefits from the government. Royal Mail continues to benefit from a VAT exemption, which allows consumers to purchase their postage absent a 20 percent tax. The Deutsche Post is still partially owned by the government; the state development bank KfW retains a near 21-percent stake in the company.[113] Partial government ownership is a significant privilege, as it creates a de-facto share price floor that protects the company from going out of business. Nonetheless, private shareholders in the company have an incentive to push for business improvements that increase the Post's market share and share price. For this reason, incumbent providers such as the Royal Mail have invested in modernization programs and rationalized operations centers post-liberalization.

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[112] *BBC News*, "Whistl Suspends Delivery Business: Workers Share their Stories," May 11, 2015.
[113] *The Local*, "Deutsche Post Under Fire for Penalizing Employees who Call in Sick Too Often," May 7, 2018.

Former government posts, however, can use their pre-liberalization delivery networks and market power to prevent other companies from delivering mail to households and businesses. Royal Mail's control of the letter delivery market in the United Kingdom, and willingness to use its pricing leverage resulted in diminished postal competition. These experiences offer important insights for the US federal government, as it examines how to increase the quality of postal services throughout America.

IV. A Proposal for Postal Innovation Zones

Members of Congress may wish to increase competition in the postal sector, but outright privatization is politically infeasible and creates a large risk of under-provision in rural areas. This problem could be overcome if Congress passed legislation to phase out the USPS' monopoly on mail delivery, while maintaining the USPS' universal service obligation. To implement this proposal, Congress could pass a law allowing other companies to deliver and collect mail to and residents' mailboxes. Under this proposal, companies seeking the right to collect and deliver letters under 13 ounces (protected under the current USPS monopoly) would have to enter into an agreement with the USPS in which competitors would share letter delivery profits with the agency.

Absent this compensation provision, USPS competitors would erode the USPS' market share by "picking off" profitable, densely-populated routes, exacerbating the USPS' fiscal condition and leaving less resources for the Postal Service to deliver to rural areas. To prevent the USPS from issuing blanket denials of these profit-sharing agreements, the USPS would have to explain agreement denials to the Postal Regulatory Commission, using detailed projections of additional financial losses that would accrue if the USPS were to enter into said partnerships. Congress would periodically review these USPS denial explanations, and failure by the USPS to satisfactorily explain their actions could result in the USPS losing their federal corporate tax exemption, valued at $1.15 billion per year according to a recent analysis by a watchdog group.[114]

It is likely, however, that USPS' competitors would earn far more profit on routes than the USPS could, since the USPS has agreed to compensate employees at levels significantly higher than market rates. According to 2017 figures reported by the US, USPS spends approximately 30 percent more on total compensation per employee than average UPS and Fedex compensation levels.[115] Significant labor savings through more flexible contracts, combined with technological innovation that reduces service costs, would likely result in increased revenue and decreased costs for private operators compared to the USPS. Thus, even if the USPS agreed to allow competition in certain densely populated neighborhoods in exchange for a portion of competitors' profits, that portion may be equal to or greater than ordinary total USPS earnings in those neighborhoods.

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[114] Taxpayers Protection Alliance, "Postal Perils and Promise: a Primer on Reform," January 2019.
[115] United States Treasury, "United States Postal Service: A Sustainable Path Forward," December 2018.

After five years of allowing private companies to enter the nationwide postal market, a task force convened by Congress would assess the level of competition in the letter delivery market. If the task force found that a) at least two competitors have been able to stay in the letter delivery business for at least two years; b) said competitors regularly service at least 500 households; and c) competition has had a positive impact on sectoral productivity and technological adoption (i.e. improved tracking technology, delivery route optimization software, free standing 3D scanners), Congress would implement "postal innovation zones" (PIZ) in at least three mid-sized US cities.[116] [117]

The USPS would suspend operations altogether in these PIZs if, after a one-year solicitation period, at least two companies agree to offer delivery services across said PIZ and come to profit-sharing agreements with the USPS. Initial service suspensions by the USPS in these cities would last for two years. For mail originating from outside of the city, senders could choose to purchase postage from a company operating inside the PIZ presuming that the company has pickup and sorting services near where the sender lives. If not, the sender could purchase USPS postage, and the USPS would pick up, sort the mail, and then pay a private PIZ operator to deliver the mail.

At the end of the two-year trial period, Congress would renew PIZ arrangements in a city if at least two competitors remained in business in said city, and delivery standards (i.e. on-time delivery percentages) for at least one participating company were on par with nationwide USPS attainment. If these standards were not met, the USPS would re-establish operations in the city, though private competitors would be welcome to continue service as long as a profit-sharing agreement with the USPS remained in place. If Congress extends PIZ arrangements in at least half of all trial cities, more cities would be added to the PIZ experiment.

For mail not subject to the current USPS monopoly (i.e. large packages, express premium mail), the status-quo would largely remain in place. Currently, companies such as UPS and Fedex compete with the USPS to deliver packages across the country, but the USPS operates with significant advantages. As mentioned before, the USPS systematically under-prices "competitive" products due to a skewed cost formula. To increase competition in the package sector, Congress should require that these products cover at least 30 percent of attributable costs, instead of the current 8.8 percent. This updated figure would ensure greater competition in the package sector as the USPS relaxes its letter monopoly.

Conclusion

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[116] Partners for Livable Communities has defined "mid-sized cities" as "any city with a population of between 100,000 and 300,000 persons, located within a Metropolitan Statistical Area of 1 million persons or more."

[117] City of Rochester, NY, Mayor's Office, "The Mid-size City: Exploring Its The Mid-size City: Exploring Its Unique Place in Urban Policy," November 2002.

The USPS faces significant fiscal problems and declining productivity in large part due to a lack of competition. The agency has shown a repeated willingness to pursue legal actions against competitors promising improved postal services at a lower cost. Absent fundamental reform, the USPS will likely require a multi-billion dollar bailout from taxpayers on top of the $3.6 billion it already receives annually in implicit federal subsidies.

Countries such as the UK and Germany previously faced similar issues with their posts, but chose to liberalize their postal sectors to reduce costs and increase productivity and service quality. Ending the monopoly on letter delivery led to innovations such as dynamic routing, 3D scanning, and real-time tracking, as well as cost-saving measures such as processing/sorting center consolidation and flexible labor contracts.

American policymakers can replicate these successes by ending the current monopoly on the delivery of mail 13 ounces or less and allowing companies to deliver letters to consumers' mailboxes subject to profit-sharing agreements with the USPS. The requirement that companies enter into profit-sharing agreements with the USPS may prove difficult to implement, since the USPS will have significant leverage in this process. Allowing the Postal Regulatory Commission to have review powers over USPS agreement decisions, however, can prevent pricing problems similar to the Royal Mail-TNT case in the UK.

This system will likely result in greater revenue for the USPS, which can be used to pay down Treasury debt and increase capabilities in rural areas. Over time, successful liberalization can lead to Postal Innovation Zones where the USPS suspends operations entirely and allows private companies to deliver mail. As with any significant reform effort, unforeseen issues may arise and the USPS may try to steer the new system in its favor. But liberalization and PIZ trials would likely offer significantly improved postal services and greater technological adoption than the status-quo.