

Examining Alternative Inflation Indices for Regulating Market Dominant Price Increases

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Executive Summary

The Postal Accountability and Enhancement Act (PAEA), enacted in 2006, brought about significant changes to the pricing of Market Dominant products by the U.S. Postal Service. Under the PAEA, the USPS was required to transition from a cost-of-service model to a price cap system, where price increases for Market Dominant products were limited to the rate of inflation measured by the Consumer Price Index for All Urban Consumers (CPI-U). The objective was to establish stability, predictability, and encourage cost reduction and efficiency within the USPS.

However, in a 2017 review, the Postal Regulatory Commission (PRC) concluded that the price cap system did not achieve the intended financial health for USPS. Consequently, the PRC introduced additional price increase authorities in 2020, related to mail density, non-compensatory products, and employee retirement benefit funding, while maintaining the CPI-U-based authority.

This white paper examines the potential impact on price authority and revenue if the price cap had been based on alternative inflation indices instead of the CPI-U. Specifically, the OIG selected and analyzed six alternative indices: Chained Consumer Price Index for All Urban Consumers (C-CPI-U), Personal Consumption Expenditures Price Index (PCE PI), Gross Domestic Product Price Index (GDP PI), Producer Price Index for Final Demand (PPI FD), Employment Cost Index (ECI), and Consumer Price Index for Delivery Services (CPI-DS).

The goal of this paper is not to suggest which index is “the best” or “better” than the CPI-U. It is to understand how each of these alternative indices would have impacted price authority and revenue and aligned with the Postal Service’s cost inflation since Fiscal Year (FY) 2011.

The OIG analyzed individual rate cases submitted by USPS to the PRC, between FY 2011 and the first half of FY 2023. We found that the ECI and CPI-DS would have allowed larger price increases than the CPI-U in most cases. The C-CPI-U and PCE PI would have

generally yielded smaller price increases, while the GDP PI and PPI FD showed mixed results.

Cumulatively, when considering all rate cases during the same period, the CPI-U-based cap allowed slightly more authority than the C-CPI-U, PCE PI, and GDP PI. A cap based on the PPI FD and ECI could have allowed slightly more authority than the CPI-U, while a CPI-DS-based cap could have permitted significantly higher price increases. However, the CPI-DS index is an outlier, as it is considerably narrower in scope (it only tracks prices consumers pay for package delivery services other than those offered by the Postal Service), and it is more volatile than the other inflation indices.

In terms of revenue generation — assuming same volumes for illustrative purposes — the ECI and CPI-DS could have generated more total revenue than the CPI-U-based authority between FYs 2011 and 2022. The C-CPI-U, PCE PI, GDP PI, and PPI FD could have generated less revenue. Excluding the CPI-DS, the alternative indices could have led to a decline in average annual revenue of up to 1.2 percent (\$523 million C-CPI-U), or an increase of up to 1.5 percent (\$652 million ECI). The CPI-DS could have generated 25.5 percent more revenue than the CPI-U price cap, amounting to an additional \$11.3 billion annually. However, the revenue impact analysis does not consider price elasticities, which refer to the potential impact on volume had prices been higher or lower. A separate analysis, beyond the scope of this report, of how the demand for Market Dominant products would react to price changes would be required to reliably quantify the impact of these alternative inflation indices, especially the CPI-DS.

When assessing the overall alignment of the inflation-based price authorities with postal cost inflation (changes in labor, materials, and capital costs not attributable to changes in the quantity of resources used) between FYs 2011 and 2022, the compound annual growth rate (CAGR) for the CPI-U-based price authority trailed the CAGR for postal cost inflation by an average of 0.8 percent. Leaving out CPI-DS due to its outlier and volatile nature, the ECI came closest to matching postal cost

inflation, lagging it by an average of 0.4 percent a year. Correlation analysis showed a weak positive relationship between each inflation-based price authority and postal cost inflation, indicating that as postal cost inflation increased, so did the inflation-based price authorities, albeit to a limited extent.

The paper also explores the impact of using a point-to-point method to calculate how inflation has changed between rate cases when determining pricing authority. In contrast, the current PRC's moving average method compares the average rate of inflation over the past 12 months to the previous year's average. While the point-to-point method would have had a generally limited impact on cumulative price authority and revenue, and on coverage of postal cost inflation, it would have yielded higher authority during periods of rising inflation compared to the PRC's moving average method.

Internationally, a comparison of postal price cap practices in seven European countries revealed that they all use their national CPI in their price cap calculation, often in conjunction with additional rate authorities addressing specific market conditions or challenges. The calculation methods, such as moving average or point-to-point, or whether the inflation number is based on past inflation or a forecast, vary among countries. However, these countries do not currently plan to replace the CPI with other inflation indices.

As debates surrounding the price cap continue, the focus both in the United States and internationally has shifted towards additional price authorities rather than questioning the merits of the CPI. The challenge for regulators is to strike a balance between price affordability and the financial viability of postal operators, particularly as mail volumes continue to decline. With a follow-up review scheduled for 2025, the PRC faces complex decisions regarding the future of the USPS Market Dominant ratemaking system.

Observations

Introduction

When Congress passed the Postal Accountability and Enhancement Act (PAEA) in 2006, it stipulated that prices for Market Dominant mail classes could not rise faster than the rate of inflation, as measured by the Consumer Price Index for All Urban Consumers (CPI-U). The requirement changed how the U.S. Postal Service priced its Market Dominant products – such as First-Class Mail and Marketing Mail – compelling the agency to move away from a cost-of-service model in which prices could rise as much as necessary to cover costs.

In mandating a price cap tied to the CPI-U, Congress aimed to bring stability to, and reduce the regulatory burden of, the ratemaking system, protect consumers from excessive price increases, and incentivize the Postal Service to cut its costs and become more efficient. However, the Postal Service experienced years of financial losses after the price cap went into effect.

PAEA required the Postal Regulatory Commission (PRC) to review the new ratemaking system, 10 years after it was implemented, to determine whether it was achieving its goals. The legislation also authorized the PRC to make changes to the system once it completed its review. Following the 10-year review in 2017, the PRC determined that the system’s “financial stability was not maintained during the PAEA era.” As a result, the PRC established additional price increase authorities in November 2020, but retained the CPI-U price cap. The PRC did not publicly consider replacing it with another inflation index.

While the Consumer Price Index is the most widely used measure of inflation, there are many alternative inflation indices that Congress and the PRC could have considered. To determine what the impact on price increases and revenue for Market Dominant products could have been if the price cap were based on a different inflation index, the OIG analyzed and compared six alternative inflation indices to the CPI-U between Fiscal Year (FY) 2011 and FY 2022.

Specifically, we compared the Postal Service’s price authority (which is the percentage that prices are allowed to increase for Market Dominant products) under the CPI-U, with the price authority that would have been derived from each of the six alternative inflation indices.

Additionally, we evaluated how each of the six alternative inflation indices could have impacted revenue from Market Dominant products, as well as how each of these indices would have kept pace with postal cost inflation. Finally, we analyzed how a sample of foreign postal regulators take inflation into account in their postal price caps.

The Purpose and History of Price Caps

An Introduction to Price Cap Regulation

Price caps limit the ability of businesses without competitors, such as utilities, to raise prices. These limits aim to prevent these entities, whether publicly or privately owned, from price-gouging customers who lack viable alternatives, while incentivizing them to increase efficiency. Some of the first inflation-based price caps were adopted by the United Kingdom in 1983 to regulate telecommunications businesses and replace price controls based on the costs of service.¹ The first price cap regulations in the United States were implemented in 1989 when the Federal Communications Commission (FCC) replaced its own cost-of-service price regulations for AT&T with a similar inflation-based price cap.

Under cost-of-service regulations, the regulatory agency allows the regulated entity to make a specified rate of return after accounting for operating costs. In contrast, price cap regulations set an initial price that is later adjusted for inflation and do not guarantee profits for the regulated entity. By limiting the ability to increase prices, price cap regulation requires businesses to improve efficiency in order to increase their profit margin. Additionally, this form of regulation aims to protect consumers by setting an upper limit to what they can be charged while allowing for gradual price increases over time.

¹ Cost-of-service regulation is also referred to as “rate-of-return” regulation.

While adjustment for inflation is the primary feature of many price caps, other factors may also be included in a price cap's formula to take into account specific market conditions or challenges facing an organization. For example, in addition to inflation, the current price cap for the Postal Service's Market Dominant products is adjusted to reflect the declining economies of density in its delivery network, caused by shrinking mail volume (and revenue) per delivery point. The price cap is also adjusted to account for the Postal Service's growing employee pension amortization payments. Many price caps also include productivity offsets, typically called "X factors," set by the regulator to further incentivize efficiency.²

In the United States, the liberalization of regulated markets has progressively reduced the use of price caps over the past few decades. However, some regulators still use caps. For example, in the energy sector, the Federal Energy Regulatory Commission (FERC) uses a cap based on the Producer Price Index (PPI) to set a ceiling on interstate oil pipeline rates. Additionally, the FCC uses price cap regulations for broadband and long-distance telecommunications providers in areas it deems non-competitive.

The History of USPS Price Caps

Before 1970, postage rates were set by Congress. Starting in 1970, following the passage of the Postal Reorganization Act, postage prices were proposed by USPS and subject to review and approval by the Postal Rate Commission (later the Postal Regulatory Commission). After reviewing the proposed rates to determine if they met the criteria outlined in the Act, the PRC recommended prices to the Postal Service's Governors. The process was designed to allow the Postal Service to break even over a specific year in the future, known as the test year.

Under this system there was no specific price cap; prices would change about every three years when USPS filed a new rate case, subject to approval by the PRC.³ Price increases were often unpredictable, hinging on arguments over postal costs and debates about which mail users should bear the increase.

This system continued until the passage of the PAEA in 2006.

However, the discussion leading to the changes made under the PAEA began during congressional hearings and legislative debates in the mid-1990s. In 1997, the Subcommittee on the Postal Service within the Committee on Government Reform and Oversight held hearings on the Postal Reform Act of 1997. This bill proposed a price cap tied directly to the Gross Domestic Product Chain Type Price Index. While this bill was not passed, it sparked ongoing debate over the creation of a postal price cap. For example, in 2003, the President's Commission on the United States Postal Service suggested using a price cap formula consisting of 80 percent Employment Cost Index (ECI) and 20 percent Gross Domestic Product Price Index (GDP PI) along with a productivity adjustment-factor.⁴

When postal reform was finally signed into law in 2006, the PAEA created a price cap tied to the Consumer Price Index for All Urban Consumers (CPI-U) with no other adjustment factors. After the bill was passed, most of the debate over the new ratemaking system focused on the methodology of the price cap calculation and the lack of other adjustment factors, rather than the choice of CPI-U as an inflation index. The price cap applies to all Market Dominant products, which in FY 2022 represented about 95 percent of Postal Service's total volume and 58 percent of its total revenue.

The Current USPS Price Cap

The PAEA also required the PRC to conduct a review of the Postal Service's Market Dominant ratemaking system, 10 years after it was signed into law. When the PRC completed its review in 2017, it stated that while the ratemaking system had created stable and predictable price adjustments, it had not helped to maintain the financial stability of the Postal Service or high service standards. The PRC attributed these shortfalls to declining First-Class Mail volume; the deflationary period following the 2008 recession, which further limited the Postal Service's ability to increase prices; divergence between the CPI-U and the Postal Service's costs and revenues; and retiree

2 An X factor influences how much a regulated entity can raise its prices by either increasing or reducing price authority depending on pre-specified conditions. For example, some X factors include a productivity target that the regulated entity is expected to meet. If the target is not met, less price authority will be allowed. Other international posts' price cap formulas incorporate volume and cost changes into their calculations of the X factor.

3 A rate case refers to the process in which the PRC determines whether a price change proposed by the Postal Service complies with applicable regulations – such as the CPI-U price cap.

4 Adjustment factors are additional components of a price cap formula used to adjust for costs not specifically measured by inflation.

health benefit funding obligations mandated by the PAEA.⁵

Consequently, the PRC issued a notice of proposed rulemaking to solicit public comments about changes to the ratemaking system. During this process, very few stakeholders commented on the choice of the CPI-U as the inflation measure in the price cap. An exception was the National Association of Letter Carriers, which suggested that the CPI-U be replaced with the Consumer Price Index for Delivery Services (CPI-DS).⁶ However, the PRC opted to retain the CPI-U in the Market Dominant price cap formula in the final rules it adopted in November 2020.⁷ In addition to using the CPI-U, the updated price cap formula added adjustment factors to allow additional price increases to compensate for mail density, non-compensatory classes and products, and the Postal Service's obligation to fund employee retirement benefits.⁸

The new ratemaking system featuring the CPI-U price cap alongside the additional adjustment factors was first used to adjudicate a rate case in 2021. It allowed the Postal Service to raise prices for Market Dominant products above what would have been permitted under a CPI-U-only price cap.

While the impacts of the new ratemaking system on the Postal Service have not yet been fully assessed, some stakeholders, including trade associations representing mailers, have questioned the effect the new price authorities may have had on mail volume. These stakeholders have warned that additional

price increases resulting from the new authorities could further erode mail volume.

Calculating the Price Cap

The inflation index used in the Postal Service's price cap influences the amount that prices are allowed to change for Market Dominant products, but so does the way the rate of inflation is calculated. While PAEA mandated the use of CPI-U in the Postal Service's price cap, the legislation did not specify how it should be used to calculate allowable Market Dominant price increases based on CPI-U. Accordingly, the PRC considered two methodologies, both backward looking:

- The "point-to-point" method, which simply calculates the difference in the CPI-U between two rate cases.
- The "moving average" method, which the PRC ultimately selected, based on the difference between the average inflation rate over the past 12 months and a previous 12-month average.⁹ The moving average method smooths out the effects of inflation by spreading out changes in the CPI-U over a full year, creating a lag between when inflation "hits" and when it is reflected in the price cap.¹⁰

Figure 1 illustrates the differences between the two calculation methods, applied to the actual CPI-U data used for the most recent Market Dominant rate case (R2023-2). In this case, the moving average method yielded a higher authority than the point-to-point method.¹¹

5 Postal Regulatory Commission, "Order on the Findings and Determination of the 39 U.S.C. § 3622 Review," (Order No. 4257), December 1, 2017, <https://www.prc.gov/docs/102/102709/Order%20No.%204257.pdf>.

6 National Association of Letter Carriers, "Comment of the National Association of Letter Carriers, AFL-CIO, Postal Regulatory Commission Docket no. RM2017-3," February 28, 2018, <https://www.prc.gov/docs/103/103970/NALC%20%2800934769%29.pdf>, pp.21-25.

7 Postal Regulatory Commission, "Order Adopting Final Rules for the System of Regulating Rates and Classes for Market Dominant Products," (Order No.5763), November 30, 2020, <https://www.prc.gov/docs/115/115227/Order%20No.%205763.pdf>.

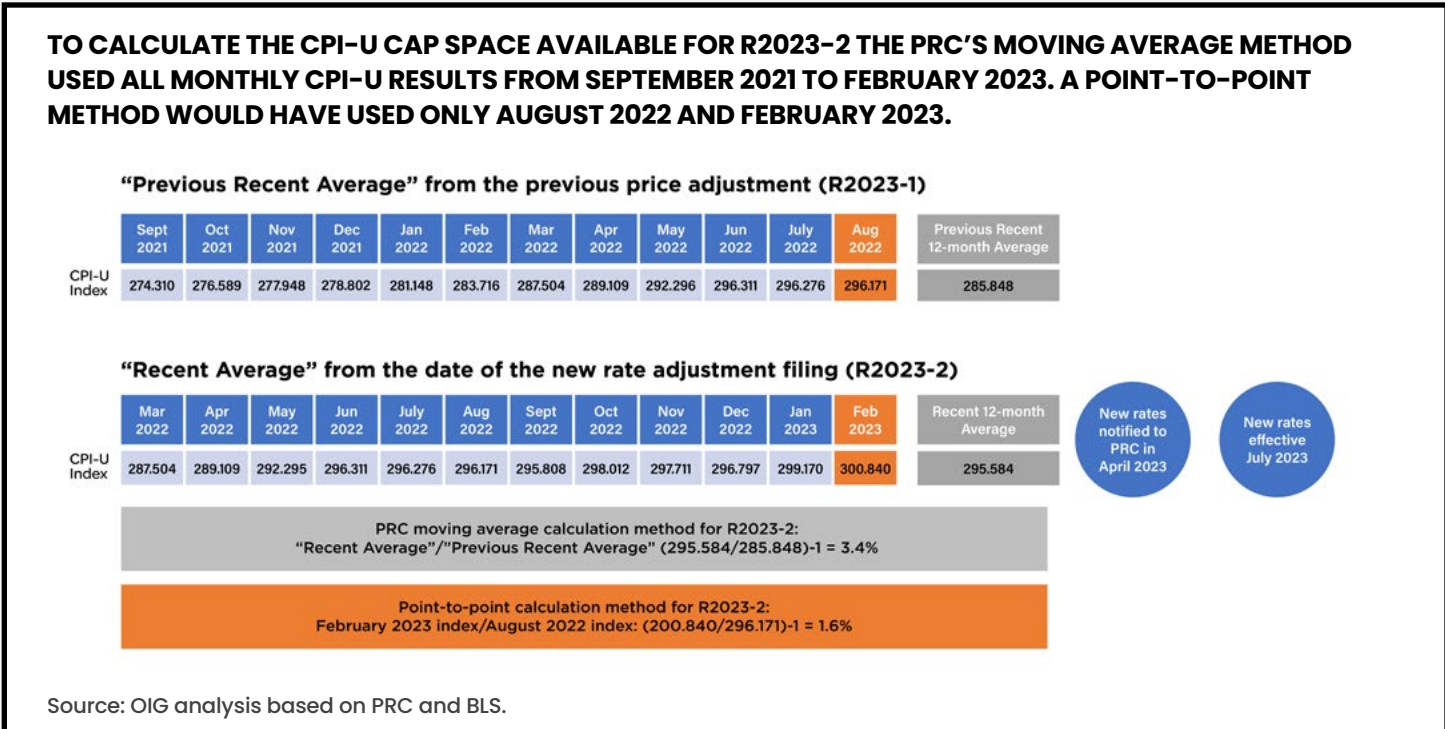
8 The density-based price authority modifies the price cap to include additional price authority calculated to approximate the amount that per-unit costs would be expected to increase as mail density (mail pieces per delivery point) declines. The retirement-based price authority modifies the price cap to include additional price authority calculated from the proportional increase in revenue per piece for all products (both Market Dominant and Competitive) needed to permit the Postal Service to make targeted amortization payments to fund employee retirement benefits. The PRC's rules provide the Postal Service with an additional 2 percentage points of pricing authority for non-compensatory classes. In FY 2022, Periodicals was the only non-compensatory class. The PRC rules also address the issue of non-compensatory products in classes that are compensatory overall. Rules require that Postal Service increase the price for each such product by at least 2 percentage points above the average for its class in each generally applicable Market Dominant rate proceeding affecting that class. In FY 2022, the PRC identified Marketing Mail Flats, USPS Marketing Mail Carrier Route, USPS Marketing Mail Parcels, Media Mail/Library Mail, and Money Orders as non-compensatory products. The PRC defines non-compensatory classes and products as those classes and products for which attributable costs exceed revenue. Postal Regulatory Commission, "Order Adopting Final Rules for the System of Regulating Rates and Classes for Market Dominant Products," (Order No. 5763) and Postal Regulatory Commission, "Annual Compliance Determination Report - Fiscal Year 2022," March 29, 2023, <https://www.prc.gov/docs/124/124784/FY%202022%20ACD.pdf>.

9 When two rate cases are filed less than 12 months apart, the previous 12-month average ends the last month taken into account in the calculation of the CPI-U authority for the previous rate case. See 39 CFR § 3030.141-143.

10 In addition, Market Dominant price increases require a notice period of 90 days before increases can go into effect. As shown in Figure 1, if the Postal Service files a notice of price adjustment with the PRC in April, the most recent CPI-U data available are for February, and price changes take effect in July.

11 For a discussion of the results the two methods yield over time, see section "A Comparative Analysis of Price Authority by Rate Case".

Figure 1: The PRC’s Moving Average Method for Calculating Inflation Compared to the Point-to-Point Method: Example of the R2023-2 Rate Case



Inflation Indices: Alternatives to the CPI-U

What Inflation Indices Measure and How They Differ from Each Other

When Congress passed the PAEA in 2006, it stipulated that prices for Market Dominant products could not rise faster than the rate of inflation, as measured by the CPI-U.

Produced by the Bureau of Labor Statistics, a component of the United States Department of Labor, the CPI-U measures how prices paid by urban or metropolitan consumers in the United States changed over time for a broad range of goods and services.

The CPI-U is a widely used and closely monitored measure of inflation in the United States, but there are many other indices that also track price changes. Some are produced by federal agencies, like the Department of Commerce’s Bureau of Economic Analysis, while others are developed by private sector companies and non-profit research organizations.

While all inflation indices quantify how much prices have changed over time, they can differ in important ways, including:

- The methodology used to construct them.

- The source of their underlying data.
- The goods and services that they track.
- Whether they include or omit purchases made by households, government, and businesses.
- Whether they track prices of imported and exported goods and services.

Inflation indices are built differently because they have different objectives and uses. Some, for example, aim to shed light on how prices have changed across the entire U.S. economy. Others are narrower, looking exclusively at prices that consumers pay in a particular part of the country. Inflation indices can even be sector-specific, focusing on energy prices, housing, or the cost of constructing a highway.

Differences in scope, methodology, and underlying data can result in inflation indices producing different results from one another over time.

Criteria for Selecting the Alternative Inflation Indices

The OIG conducted research and consulted with a contractor, Christensen Associates, to compile a list of inflation indices. The six inflation indices selected were:

- Chained Consumer Price Index for All Urban Consumers (C-CPI-U)
- Personal Consumption Expenditures Price Index (PCE PI)
- Gross Domestic Product Price Index (GDP PI)
- Producer Price Index for Final Demand (PPI FD)
- Employment Cost Index (ECI)
- Consumer Price Index for Delivery Services (CPI-DS).

We applied the following selection criteria:

- **Reputation:** Each inflation index’s reputation was evaluated, and only inflation indices produced by federal agencies were retained.¹² The OIG also found numerous examples of federal agencies using inflation indices that are produced by their government peers.
- **Relevance:** The OIG prioritized inflation indices that seemed most relevant to the Postal Service. Specifically, we included inflation indices that postal experts and stakeholders suggested as alternatives to the CPI-U during a congressional hearing on postal reform, and as the PRC conducted its 10-year review of the ratemaking system, such as the GDP PI, the ECI, and the CPI-DS.

- **Representation:** The OIG ensured that numerous types of inflation indices were represented. For example, both chained and fixed-weight indices were selected, ensuring methodological diversity. Indices that are very broad and relatively narrow in scope were included, as were indices that track inflation at different levels. For example, the PCE PI tracks prices paid by consumers, while the PPI FD measures price changes at the producer level.
- **Redundancy:** To avoid redundancy, the OIG eliminated inflation indices that are very similar in scope and methodology to one another, or that produced similar results over a multi-year period. While the GDP PI and the Gross Domestic Product Implicit Price Deflator were both on the OIG’s initial list of inflation indices to consider, we removed the GDP Implicit Price Deflator after finding out that the two indices tracked each other almost perfectly.

The CPI-U and Six Alternative Inflation Indices

Table 1, found below, summarizes the differences between the CPI-U and six alternative inflation indices. The table compares who produces the indices, their scope, whether results are revised, and whether the indices are fixed-weight or chained-weight. A more comprehensive summary of each inflation index can be found in [Appendix B](#).

Table 1: Summary of the CPI-U and Six Alternative Inflation Indices

Producer: The entity that produces each index. The indices are produced by either the Bureau of Labor Statistics (BLS) or the Bureau of Economic Analysis (BEA).

Scope: The goods and services that are tracked by each index.

Results Revised: Whether the index releases preliminary results that are later revised.¹³

Chained: Whether the index is chained-weight (as opposed to fixed-weight). The expenditure weights of items tracked by a fixed-weight index were set in the past and remain static for an extended length of time. By contrast, expenditure weights are estimated much more frequently in a chained-weight index.

Index	Producer	Scope	Results Revised	Chained	Notes
CPI-U	BLS	Prices paid by urban or metropolitan consumers for more than 80,000 goods and services; covers over 90 percent of the U.S. population. Excludes expenditures by government agencies and businesses. Includes imports but excludes exports.	No	No	Relies on consumer and business surveys to identify which goods and services consumers are purchasing and how much they are being charged.

¹² Price indices produced by non-governmental organizations include the S&P CoreLogic Case-Shiller U.S. National Home Price Index, Zillow’s Observed Rent Index, Adobe’s Digital Price Index, and the Everyday Price Index, generated by the American Institute for Economic Research.

¹³ A price cap based on an inflation index that is subject to revisions could require the regulator to decide whether price authority shall be adjusted each time results are revised, potentially adding complexity to the ratemaking process.

Index	Producer	Scope	Results Revised	Chained	Notes
C-CPI-U	BLS	Same scope as the CPI-U.	Yes	Yes	While the expenditure weights for the items in the basket of goods and services tracked by the CPI-U are updated <i>annually</i> , the C-CPI-U's weights are estimated every <i>month</i> .
PCE PI	BEA	Prices of goods and services purchased by consumers, including rural and farm populations. Includes purchases by governments and businesses if made on behalf of a consumer, e.g., medical services provided through Medicare. Includes imports but not exports.	Yes	Yes	Weights assigned to the goods and services tracked by the PCE PI are based primarily on surveys of businesses, conducted by the Census Bureau.
GDP PI	BEA	Tracks goods and services produced in the United States, including those purchased by consumers, businesses, and governments (to include compensation for public sector employees). Includes exports but not imports.	Yes	Yes	In the past, the GDP PI was used to regulate price increases in the telecommunications sector.
PPI FD	BLS	Prices that domestic producers receive for goods and services sold to consumers, businesses, and government. Includes exports but not imports.	Yes	No	Only tracks prices of goods and services that are ready for final consumption; goods and services sold as an <i>input</i> into the production process are excluded.
ECI	BLS	The cost of labor, including wages, salaries, and benefits. Includes private sector employees and state and local government. Excludes federal workers, military, and employees in the agricultural sector.	No	No	The ECI is based on the National Compensation Survey, a nationally representative survey administered by BLS that provides data on pay and benefits.
CPI-DS	BLS	Tracks prices consumers pay for delivery services, <i>excluding</i> prices paid to the U.S. Postal Service. Companies are confidential, but delivery services provided by companies like Amazon, DHL, FedEx, and UPS could be included in the index.	No	No	The CPI-DS is a component of the CPI-U. While it represents a minimal share of the CPI-U (just 0.01 percent) the methodology used to construct it is the same as the broader index. Additionally, the type of delivery products captured in the CPI-DS (which includes parcels) differ from those covered by the price cap for Market Dominant products.

Source: OIG analysis.

The Impact of Six Alternative Inflation Indices on Price Authority and Revenue

This section of the white paper quantifies how different the Postal Service's price authority and revenue could have been had Congress selected an alternative inflation index other than the CPI-U.¹⁴

While a comprehensive description of the methodology can be found in [Appendix D](#) there are a few important points to note:

- In this analysis, Market Dominant products are limited to First-Class Mail and Marketing Mail (formerly Standard Mail). In FY 2022 First-Class Mail and Marketing Mail accounted for 89 percent of the revenue the Postal Service earned for its Market Dominant products.
- The OIG analysis of the notices of price adjustments affecting First-Class Mail and Marketing Mail began with the FY 2011 notices

¹⁴ Price (or rate) authority refers to the percentage amount by which the Postal Service is allowed to raise its prices.

because data for the PPI FD was not available until FY 2010, and the first rate case for which PPI FD data was available occurred in FY 2011.

- Calculations only reflect price authority that resulted from inflation. Mail density, retirement, and non-compensatory authorities authorized by the Postal Regulatory Commission in 2020 are not included. Nor is the 2014–2016 exigent rate increase.¹⁵ A broader analysis would be required to support a conclusion that the total price authority given in recent years has or has not been adequate to meet the PRC’s objective to address the Postal Service’s financial health.
- To simplify the analysis, calculations do not account for banked authority – instances where the Postal Service did not request the maximum price increase allowed by law, opting instead to save some authority until the next rate case. In other words, calculations assume that the Postal Service always used the maximum price authority allowed.
- The revenue analysis does not consider price elasticities, which refer to the potential change in Market Dominant volume had alternative inflation indices resulted in higher or lower prices than those approved by the PRC. Put differently, it does not consider how consumers might have responded to price changes. The OIG chose this “all things being equal” approach as a way of comparing the dollar amount effect of the pricing authority under the various indices. As a result, counterfactual revenue estimates are actually revenue without volume changes. To calculate them, we applied the alternative price authorities to actual Market Dominant volume.

A Comparative Analysis of Price Authority by Rate Case

Between FY 2011 and FY 2022, the Postal Regulatory Commission oversaw 15 main rate cases for Market Dominant products.¹⁶ This analysis also includes the first rate case in FY 2023 (PRC docket R2023-1) – the most recent rate case at the time the OIG conducted its analysis. For each rate case, [Table 2](#) shows how much more or less price authority would have been

allowed had the price cap been based on six other inflation indices instead of the CPI-U.¹⁷ [Figure 2](#) shows the price authority that would have been allowed by each rate case, for all seven inflation indices. The main findings from the rate case analysis are as follows:

- The Chained CPI-U and the PCE PI would have consistently allowed less price authority than the CPI-U. Between FY 2011 and the first half (H1) of FY 2023, the price authority based on the Chained CPI-U would have been smaller than the CPI-U in 15 of 16 rate cases, while the PCE PI would have yielded less price authority than the CPI-U in 13 of 16 rate cases.
- Conversely, the ECI and CPI-DS would have allowed *more* authority than the CPI-U in most rate cases. Price authority based on the ECI would have exceeded what was allowed by the CPI-U in 12 of 16 rate cases, and the CPI-DS would also have topped the CPI-U in 12 of 16 rate cases. However, the CPI-DS would have permitted price increases significantly larger than the CPI-U and any other index. The biggest gap would have occurred in April 2011 (R2011-2), with the CPI-DS allowing a price increase 11.5 percentage points larger than the CPI-U (see [Table 2](#), and the red line in [Figure 2](#)).
- For GDP PI and PPI FD, the trend is not as clear as the other indices. Some rate cases would have yielded more authority using these indices instead of the CPI-U, while others would have yielded less.
- Across the 16 rate cases considered, the average price authority allowed by five alternative inflation indices (C-CPI-U, GDP PI, PPI FD, ECI and PCE PI) would have not differed from the average CPI-U authority by more than plus or minus 0.3 percentage points. However, the CPI-DS would have exceeded the CPI-U-based authority by an average of 2.2 percentage points across all 16 rate cases.
- Finally, for five of the six alternative inflation indices (C-CPI-U, GDP PI, PPI FD, ECI and PCE

¹⁵ The exigent rate case was a temporary increase of 4.3 percent on Market Dominant prices the PRC granted in addition to CPI-U. Its objective was to help the Postal Service recoup profits lost during the Great Recession.

¹⁶ This number excludes the exigent rate case, a Special Services rate case, and Negotiated Service Agreements.

¹⁷ In both [Figure 2](#) and [Table 2](#) the OIG used the moving average method to calculate price authorities.

PI), using the point-to-point rather than the moving average method would have resulted in average price authority within plus or minus 0.3 percentage points of the CPI-U. The CPI-DS was again the exception, with average price authority using the point-to-point method differing from the CPI-U by 2.3 percentage points.

- Notably, in a period of rising inflation — in particular, in 2022 — the point-to-point method would have yielded more price authority than the moving average method, regardless of which inflation index was used.¹⁸

Table 2: How CPI-U Price Authority Differs from the Authority Based on Six Other Inflation Indices From FY 2011 to H1 FY 2023

WHILE THE C-CPI-U AND PCE-PI TYPICALLY ALLOWED LESS RATE AUTHORITY THAN THE CPI-U, THE ECI AND CPI-DS TENDED TO ALLOW MORE.

Rate Case	Effective date	CPI-U Rate Authority	Δ C-CPI-U	Δ PCE PI	Δ PPI FD	Δ GDP PI	Δ ECI	Δ CPI-DS
R2011-2	APRIL 2011	1.7%	-0.2%	0.1%	-0.4%	-0.6%	0.1%	11.5%
R2012-3	JANUARY 2012	2.1%	-0.1%	-0.4%	0.7%	-0.6%	-0.6%	6.5%
R2013-1	JANUARY 2013	2.6%	-0.1%	-0.4%	0.0%	-0.7%	-0.6%	5.2%
R2013-10	JANUARY 2014	1.7%	-0.2%	-0.2%	-0.2%	0.1%	0.2%	2.2%
R2015-4	MAY 2015	2.0%	-0.2%	-0.1%	0.0%	0.4%	0.6%	2.0%
R2016-2	MARCH 2016	0.1%	-0.2%	0.2%	-0.5%	0.8%	1.7%	0.1%
R2016-5	AUGUST 2016	0.4%	-0.2%	-0.2%	-0.7%	0.0%	0.6%	-1.0%
R2017-1	JANUARY 2017	0.4%	-0.1%	-0.1%	-0.4%	-0.1%	0.5%	-1.3%
R2017-7	JANUARY 2018	1.5%	-0.2%	-0.2%	-0.3%	-0.3%	0.2%	-0.6%
R2018-1	JANUARY 2018	0.4%	-0.1%	0.0%	0.1%	0.0%	0.2%	0.5%
R2019-1	JANUARY 2019	2.4%	-0.4%	-0.3%	0.5%	-0.1%	0.3%	4.2%
R2020-1	JANUARY 2020	1.9%	-0.3%	-0.2%	0.3%	0.1%	0.9%	2.1%
R2021-1	JANUARY 2021	1.5%	-0.3%	-0.3%	-1.1%	-0.1%	1.3%	-0.1%
R2021-2	AUGUST 2021	1.2%	0.0%	-0.1%	0.2%	0.2%	0.5%	0.3%
R2022-1	JULY 2022	5.1%	-0.3%	-0.9%	2.3%	-0.5%	-2.0%	1.4%
R2023-1	JANUARY 2023	4.2%	-0.3%	-1.0%	0.9%	-0.6%	-1.8%	2.5%

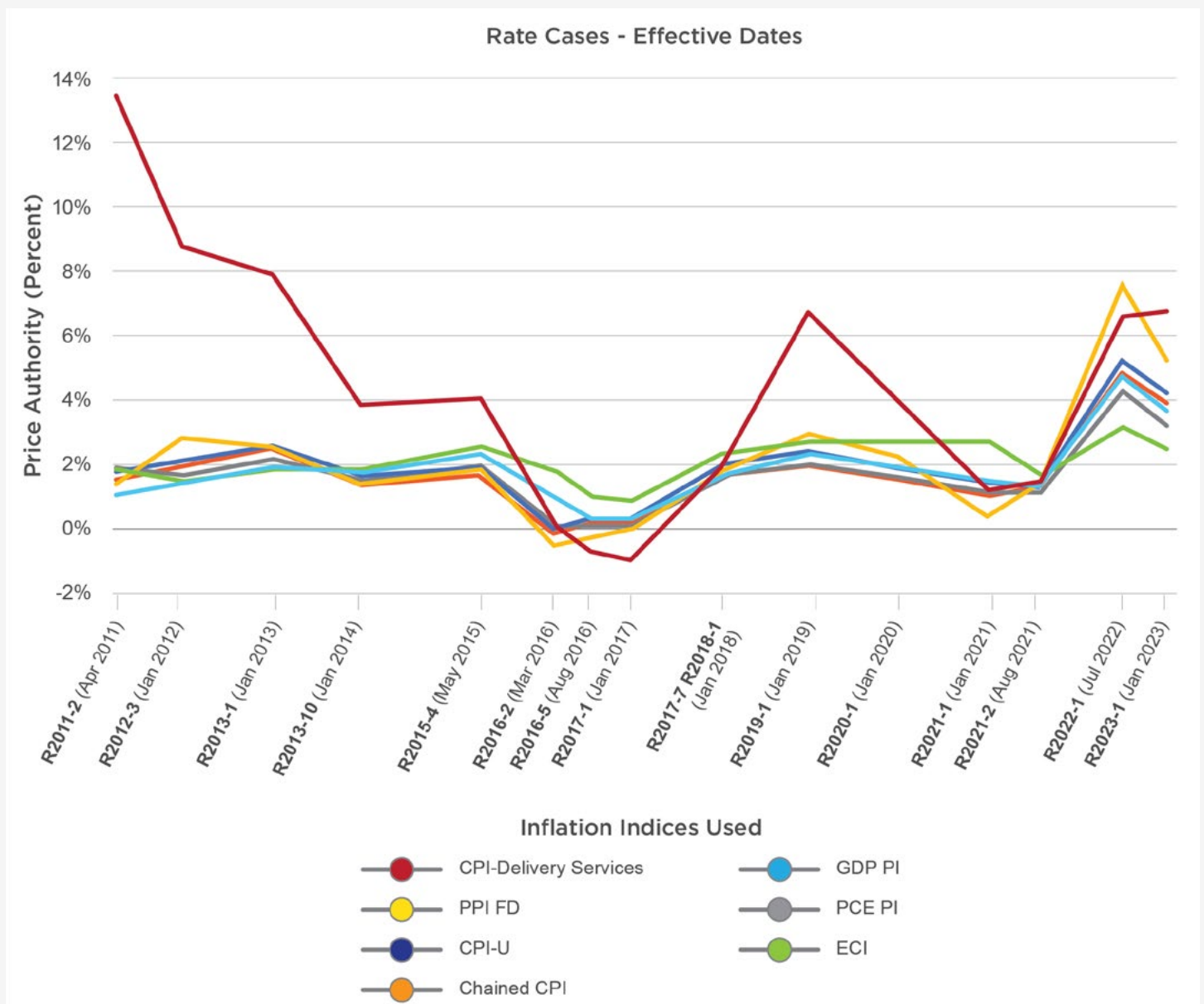
Pink cells: The amount that alternative authority trailed CPI-U authority for this rate case.
White cell: The amount that alternative authority exceeded or matched CPI-U authority for this rate case.

For example, rate case R2023-1 permitted the Postal Service to raise its rates by 4.2 percent using the CPI-U rate authority; this authority would have been 0.6 percentage points lower (i.e., 3.6 percent) had GDP PI been used instead.

Source: OIG analysis. Moving average calculation method.

¹⁸ Rate case R2022-1 illustrates this point. For R2022-1, the additional price authority would have ranged between an extra 0.5 percentage point (using the ECI) and an additional 2.7 percentage points (using the CPI-DS). The CPI-U authority would have been 1.1 percentage points higher using the point-to-point method than a moving average, at 6.2 percent.

Figure 2: Price Authority by Rate Case Between FY 2011- H1 FY 2023 (Moving Average Method)



Source: OIG analysis. The dates shown are the dates price changes took effect.

A Comparative Analysis of Cumulative Price Authority

In addition to conducting an analysis by rate case, the OIG also calculated cumulative price authority – the total amount that prices would have been allowed to increase over a 12-year period across *all* rate cases considered. Cumulative authority sheds light on the long-term impact that the alternative indices could have had on First-Class Mail and Marketing Mail prices.

Table 3 shows the Postal Service’s cumulative price authority between FY 2011–H1 FY 2023 using a price cap based on the CPI–U, and how much it would have exceeded or trailed six other inflation indices.¹⁹

For example, over a 12-year period:

- Price caps based on the C–CPI–U, the PCE PI, and the GDP PI would have resulted in lower cumulative price authority than the CPI–U.

¹⁹ To calculate cumulative price authority, one cannot simply add the price increase allowed by each rate case. One reason is that cumulative price authority is compounding. A hypothetical price increase of 3 percent will mean more after a series of price increases have already occurred than it would much earlier in the process.

- Price caps based on the ECI and PPI FD would have allowed slightly higher price authority than the CPI-U.
- The CPI-DS is a stark outlier, as it would have permitted the Postal Service to raise its rates by

over twice as much as the CPI-U. The CPI-DS is much more volatile than the other inflation indices, with a standard deviation two to five times as large.

Table 3: Comparison of Cumulative Inflation-Based Authorities (FY 2011- H1 FY 2023) Using the Moving Average Method: CPI-U Versus Alternative Indices

	CPI-U	C-CPI-U	PCE PI	PPI FD	GDP PI	ECI	CPI-DS
Cumulative Price Authority Since R2011-2	33.5%	29.2%	28.4%	35.1%	31.1%	36.3%	86.7%
Difference with CPI-U-Based Authority		-4.4%	-5.1%	1.6%	-2.4%	2.8%	53.1%
Standard Deviation*	1.3%	1.3%	1.1%	2.0%	1.1%	0.7%	3.9%

Source: OIG analysis. *Standard deviation measures how much the price authority granted by each rate case deviates from its average. The analysis is done for each inflation index. A high standard deviation indicates that values are far from the mean. In our analysis, larger standard deviations indicate greater volatility. Figures for the difference with CPI-U-based authority may not add up due to rounding.

We also calculated the cumulative authority between FY 2011- H1 FY 2023 using the point-to-point method to determine whether a change in calculation method would have had any impact on price authority. The OIG found that the cumulative CPI-U price authority based on the point-to-point method was slightly above the authority calculated with the moving average method (36.9 percent versus 33.5 percent). In addition, for all six alternative inflation indices, the cumulative price authority based on the point-to-point technique exceeded the moving average method by as little as 1.7 percentage points (PCE PI, with 30.1 percent versus 28.4 percent) and as much as 5.7 percentage points (CPI-DS, with 92.4 percent versus 86.7 percent).²⁰

There are many reasons why inflation indices behave differently from one another. One reason is that they do not track the same goods and services. Even when their scopes are similar, data collection techniques can vary. Additionally, chained indices typically display lower inflation than fixed-weight indices.²¹ The way prices are set can also differ across goods and services, causing inflation indices to rise or fall at different speeds. For example, wages, which are measured by the ECI, tend to be adjusted on an annual basis, unlike other products whose prices are

revised more frequently. Wages also do not typically decline during economic downturns because workers resist pay cuts. Finally, some indices measure a broader set of goods and services than others. This can make them less susceptible to the decisions of a small number of actors, dampening their volatility. For example, the CPI-U tracks many more items than the CPI-DS, and therefore reflects the price setting behavior of a much larger number of companies and consumers.

The Impact of Alternative Inflation Indices on the Postal Service’s Market Dominant Revenue

The OIG evaluated how price caps based on different inflation indices could have impacted the Postal Service’s Market Dominant revenue between FYs 2011-2022, using the moving average method. Findings, which assume for simplicity that Market Dominant volume would have remained the same despite the different rates allowed by each index, include:

- Percentage impact.** On average, price caps based on the ECI and the CPI-DS could have generated more revenue than the CPI-U cap, while price caps based on the C-CPI-U, PCE PI, GDP PI, and PPI FD could have generated less. Setting aside the CPI-DS, had the five other

²⁰ However, the gap would have been smaller had the most recent rate case (R2023-2) been taken into account in the comparative analysis.

²¹ As indicated in the previous section, chained indices can reflect consumer spending patterns that are more current – for example, by capturing consumer substitution away from items that have rapidly increased in price.

alternative inflation indices been used in the price cap instead of the CPI-U, average annual Market Dominant revenue could have fallen by as much as 1.2 percent (C-CPI-U) or risen by as much as 1.5 percent (ECI). The CPI-DS is an outlier, as a price cap based on this index could have resulted in an average of 25.5 percent more revenue each year than the CPI-U cap. (See Table 4.)

- **Monetary impact.** Excluding the CPI-DS, had the other five alternative inflation indices been used in the price cap instead of the CPI-U, average annual Market Dominant revenue could have been within a -\$523 million (C-CPI-U) to +\$652 million (ECI) range compared to actual revenue. Over the entire 12-year period spanning FYs 2011-2022, the Postal Service could have earned roughly \$6.3 billion less with a C-CPI-U price cap, and \$7.8 billion more with a price cap based on the ECI. The CPI-DS authority, on average,

could have generated an additional \$11.3 billion every year compared to the CPI-U and yielded an additional \$135 billion in cumulative revenue. However, the analysis of the CPI-DS price cap does not consider price elasticity, which is a measure of the potential impact significantly higher prices could have on volume.

- **Moving average versus point-to-point.** The results presented above are based on the moving average method. Between FYs 2011-2022, the Postal Service could have earned roughly \$27 million less in revenue each year using the CPI-U and the point-to-point method than it did using a moving average. Similarly, using the point-to-point method instead of a moving average would not have significantly changed the amount of revenue generated by the alternative indices. Revenue would not have differed by more than 0.9 percent for any of the alternative indices.

Table 4: Estimated Average Annual Revenue in \$ Millions for Market Dominant Products From FY 2011 to FY 2022 (Moving Average Method)

	CPI-U	C-CPI-U	PCE PI	PPI FD	GDP PI	ECI	CPI-DS
Average Annual Revenue (in \$ millions)	\$44,135	\$43,612	\$43,690	\$43,842	\$43,674	\$44,787	\$55,405
Average Annual Difference from the CPI-U Price Cap (in \$ millions)	---	-\$523	-\$445	-\$293	-\$461	\$652	\$11,270
Average Annual Percent Difference from the CPI-U Price Cap	---	-1.2%	-1.0%	-0.7%	-1.0%	1.5%	25.5%

Source: OIG analysis.

Alternative Price Authorities and Postal Cost Inflation

The OIG examined how well the CPI-U and six alternative inflation-based price authorities kept pace with postal cost inflation between FYs 2011-2022. The goal of the analysis was to identify which inflation index best covered the portion of the Postal Service’s cost increases caused by inflation.²²

Postal cost inflation is defined as the change from one year to the next in the Postal Service’s expenditure for labor, materials, and capital that is not attributable to an increase or decrease in the quantity of resources used. For example, if the quantity of labor used and labor composition do not change from one year to the next, but expenditures on labor increase, the increase can be attributed to inflation.²³ Christensen Associates calculates postal cost inflation using a weighted average of

²² Due to methodological limitations, we relied upon postal cost inflation data calculated for the whole USPS, rather than Market Dominant products-specific inflation. One reason is Market Dominant inflation estimates assume that the types of labor used in Market Dominant services are similar to those used for the provision of Competitive services. A further complication relates to the fact that some services were moved from the Market Dominant to the Competitive services category over the calculation period.

²³ For annual postal costs inflation indices from FY 1964 to FY 2022, see PRC, Docket No. ACR2022, “USPS-FY22-17-2022 Annual Report to Congress and Related Material,” December 29, 2022, Excel file “Table Annual 2022 ACR (Public).xlsx,” tab “Tfp-49”, <https://prc.arkcase.com/portal/docket-search/advanced/filing-details/59337>.

multiple indices that capture how much inflation the Postal Service faces when purchasing labor, materials, and capital.²⁴

To determine how closely the CPI-U and six alternative price authorities tracked postal cost inflation between FYs 2011-2022, the OIG conducted an alignment analysis to measure the ability of each index to cover postal cost inflation, and a correlation analysis to determine to what extent postal cost

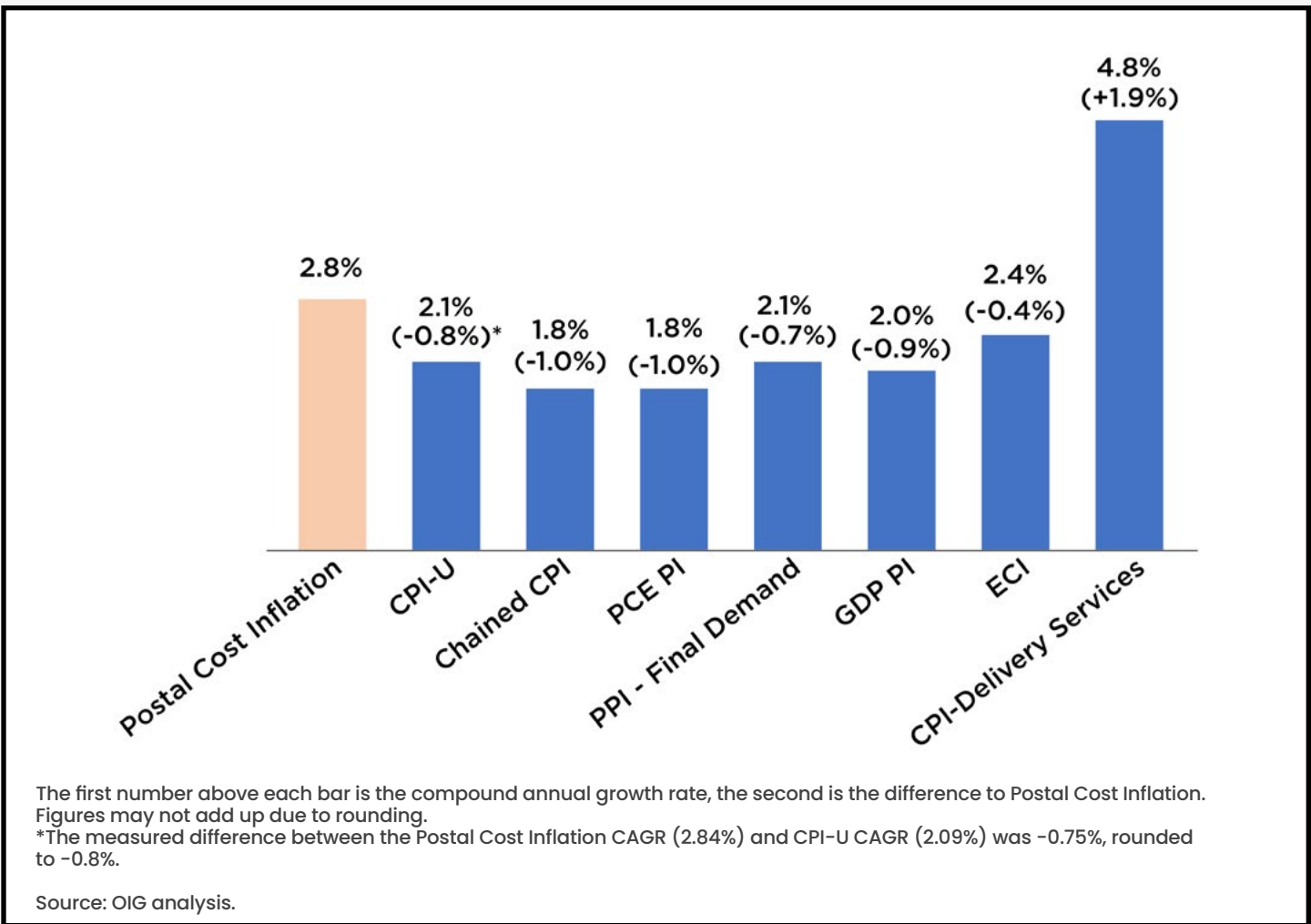
inflation and each inflation index move in the same direction.

Overall Alignment between Price Authorities and Postal Cost Inflation

First, we calculated the compound annual growth rate for postal cost inflation and each inflation-based price authority between FY 2011 and FY 2022 (Figure 3.)

Figure 3: Comparison of the Compound Annual Growth Rate for Alternative Inflation Indices and Postal Cost Inflation FY 2011-FY 2022

AN ECI-BASED AUTHORITY WOULD HAVE MATCHED POSTAL COST INFLATION MORE CLOSELY THAN THE OTHER INFLATION INDICES INCLUDING CPI-U.



²⁴ Christensen Associates calculates postal cost inflation — which it calls “price of resource usage” — as part of its computation of Total Factor Productivity. Total Factor Productivity (TFP) is an index that measures how efficiently USPS uses resources to handle all aspects of its workload. The Postal Service uses TFP data for internal planning and analysis, and reports TFP results in its financial statements and in required filings to the PRC.

Over the 12-year period, using the moving average method, the average annual CPI-U authority was lower than the average postal cost inflation by about 0.8 percent a year. This means that, if no price adjustments other than a CPI-U-based increase had been allowed, the CPI-U authority would have covered 99.2 percent of the inflation-related increase in postal labor, materials, and capital input costs in a typical year. Additional findings include:

- An ECI-based authority would have matched postal cost inflation more closely than the other inflation indices, including the CPI-U.
- Three inflation-based authorities (C-CPI-U, PCE PI, and GDP PI) would have lagged postal cost inflation *more* than the CPI-U authority.
- A PPI-FD-based authority would have yielded about the same average level of cost coverage as the CPI-U.

- On average, a CPI-DS-based authority would have exceeded postal cost inflation by 1.9 percent per year.

Additionally, we calculated how CPI-U-based price authority and the six alternative inflation-based price authorities differed from the rate of postal cost inflation between each pair of successive rate cases.²⁵ Table 5 shows how much more or less coverage of postal cost inflation the alternative indices would have yielded compared to CPI-U. This analysis confirms that ECI and CPI-DS would have covered more postal cost inflation than the CPI-U between most rate cases. However, the highest cost coverage relative to the CPI-U would have occurred between 2011 and 2013. During this period, CPI-DS-based cost coverage would have exceeded the CPI-U-based cost coverage by more than 5 percent in multiple rate cases.

Table 5: Cost Coverage Between Rate Cases: Difference Between Cost Coverage Using Alternative Inflation-based Authorities and CPI-U-based Authority: FY 2011-FY 2022

	Chained CPI	PCE PI	PPI - Final Demand	GDP PI	ECI	CPI-Delivery Services
APRIL 2011 TO JANUARY 2012	-0.2%	0.1%	-0.4%	-0.6%	0.1%	11.1%
JANUARY 2012 TO JANUARY 2013	-0.1%	-0.4%	0.7%	-0.6%	-0.6%	6.3%
JANUARY 2013 TO JANUARY 2014	-0.1%	-0.4%	0.0%	-0.7%	-0.6%	5.2%
JANUARY 2014 TO MAY 2015	-0.2%	-0.2%	-0.2%	0.1%	0.2%	2.2%
MAY 2015 TO MARCH 2016	-0.2%	-0.1%	0.0%	0.4%	0.6%	2.0%
MARCH 2016 TO AUGUST 2016	-0.2%	0.2%	-0.5%	0.8%	1.7%	0.1%
AUGUST 2016 TO JANUARY 2017	-0.1%	-0.2%	-0.7%	0.0%	0.6%	-1.0%
JANUARY 2017 TO JANUARY 2018	-0.1%	-0.1%	-0.4%	-0.1%	0.5%	-1.3%
JANUARY 2018 TO JANUARY 2019	-0.3%	-0.3%	-0.2%	-0.3%	0.3%	-0.1%
JANUARY 2019 TO JANUARY 2020	-0.4%	-0.3%	0.4%	-0.1%	0.3%	4.1%
JANUARY 2020 TO JANUARY 2021	-0.3%	-0.2%	0.3%	0.1%	0.9%	2.0%
JANUARY 2021 TO AUGUST 2021	-0.3%	-0.3%	-1.0%	-0.1%	1.2%	-0.1%
AUGUST 2021 TO JULY 2022	0.0%	-0.1%	0.2%	0.2%	0.5%	0.3%

Cells highlighted in yellow indicate more cost coverage than the CPI-U between rate cases.

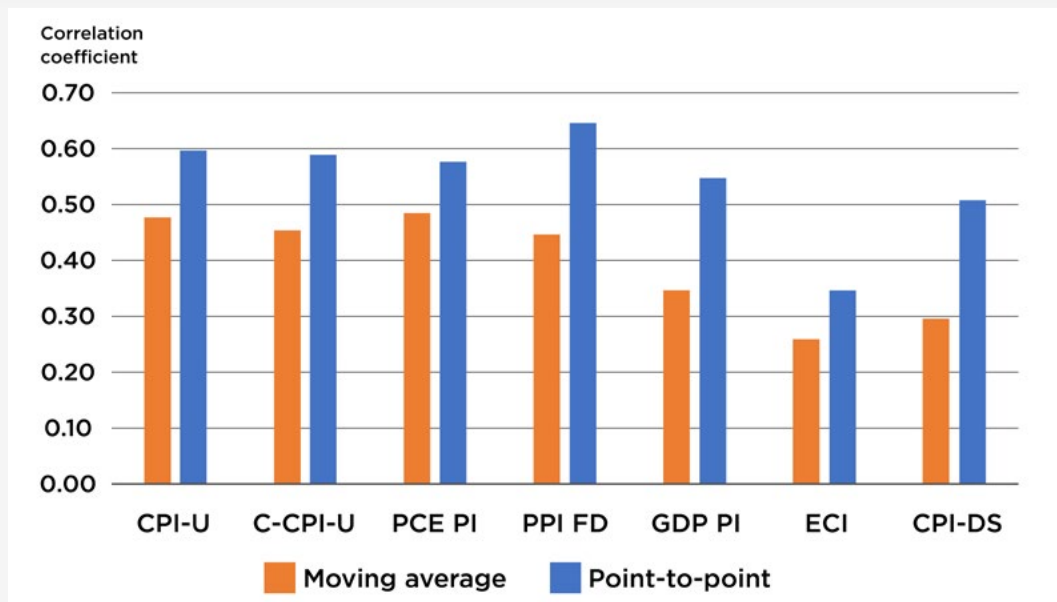
Source: OIG analysis.

²⁵ Our estimates showed that inflation for Market Dominant products was, on average, only slightly lower than the overall postal cost inflation. This means that the gap between inflation-based authorities and Market Dominant postal cost inflation would be slightly narrower than what is shown in Table 5.

Figure 4: Coefficient of Correlation Between Postal Cost Inflation and Different Inflation-based Price Authorities

Note: Correlation coefficients can vary from -1 to +1, and 0 corresponds to the absence of correlation. A coefficient of 0.7 indicates a fairly strong positive correlation.

Source: OIG analysis



Measuring Correlation Between Postal Cost Inflation and the Inflation-based Price Authorities

The OIG also calculated the level of correlation between each inflation-based price authority and postal cost inflation between FYs 2011–2022. As Figure 4 shows, we found that each inflation-based price authority is positively correlated to postal cost inflation, but correlation coefficients are generally low.²⁶ This means that these authorities move in the same direction as postal cost inflation, but not necessarily at the same pace, the same time, or in the same amount.

One factor behind the low levels of correlation may be the way the PRC calculates price authority. As previously shown in Figure 1, the price authority in effect in a particular fiscal year may be partially based on inflation that occurred up to two years earlier. Previous years' inflation may be less likely to match current postal cost inflation than current year's inflation. This could also explain why the point-to-point method yields a stronger correlation

to postal cost inflation than the moving average method. Being less “backward-looking” than the moving average method, a point-to-point-based authority is more likely to mirror the current year's postal cost inflation.

Considering the Merits of a Composite Inflation Index

Years before PAEA became law, as early postal reform legislation was being introduced, experts testified before Congress about which inflation index should be used in a price cap. Some argued that a “composite” index, which incorporates more than one measure of inflation, would be the most appropriate.²⁷ Proponents of a composite index suggested that combining inflation indices could produce a price cap that aligns more closely with the Postal Service's costs. As already mentioned, in 2003 the President's Commission on the U.S. Postal Service referenced a proposal that the ECI receive a weight of 80 percent and the GDP PI a weight of 20 percent to broadly reflect the Postal Service's cost structure.²⁸

²⁶ The correlation coefficients shown in Figure 4, which range from 0.26 to 0.65, denote a low to medium correlation.

²⁷ At the time (in 1997), GPI PI was already used in price caps in the telecommunications sector.

²⁸ “Embracing the Future – Report of the President's Commission on the United States Postal Service,” July 31, 2003, https://home.treasury.gov/system/files/136/archive-documents/pcusps_report.pdf, p.60.

While there are potential benefits to using a composite index in a price cap, there are also some aspects that need to be considered. A composite index could add complexity to a price cap. Selecting which indices to combine and determining their relative weights can be based on subjective judgment, potentially reducing the credibility and effectiveness of the index. Moreover, selecting inflation indices that closely track the increase of a regulated company's costs may negatively impact efficiency. If a company can simply increase prices to cover cost increases, it may have little incentive to become more efficient. In practice, the use in the price cap of the composite ECI/GDP PI index mentioned above instead of the CPI-U could have generated only 1 percent more cumulative revenue in total — or \$5.2 billion — than the CPI-U over the whole period from FY 2011 to FY 2022.

To date, regulators in the U.S. and abroad, rather than using composite inflation indices, have provided additional price adjustment authorities reflecting the specific market conditions or challenges facing the postal operator. This was the approach taken by the PRC in 2020, when it retained the CPI-U price cap but provided three new price authorities to address shortcomings of the ratemaking system. Similarly, as discussed in the next section, international postal price caps rely on the CPI but include additional price authority to help

postal operators offset declining volume and rising costs.

The Role of Inflation in International Postal Price Caps

The use of a price cap in the postal sector is not unique to the United States.

The OIG identified seven countries that currently use a price cap to regulate price increases. To understand how the price caps incorporate inflation, and whether stakeholders believe they have been effective, the OIG conducted desk research and reached out to each country's postal regulator.

Between February and March 2023, the OIG engaged with the following postal regulators:

- Authority for Consumers and Markets (Netherlands)
- Belgian Institute for Postal Services and Telecommunications (Belgium)
- Federal Network Agency (Germany)
- National Communications Authority (Portugal)
- Office of Communications (United Kingdom)
- Regulatory Authority for Electronic Communications, Postal and Press Distribution (France)
- Swedish Post and Telecom Authority (Sweden).

Table 6 summarizes each country's price cap.

Table 6: Characteristics of International Postal Price Caps

	Products Included in the Price Cap	Share of Postal Volume Subject to the Price Cap	Inflation Index in the Price Cap	Other Components of the Price Cap
Belgium	Single piece domestic standard letters up to 2kg and parcels up to 10kg; outgoing international standard mail up to 2kg; registered and insured items	About 25 percent of total volume	Health Index; point-to-point; based on past inflation	Efficiency factor; cost reduction factor; volume change
France	All postal items weighing up to 2kg, parcels weighing up to 20kg, excluding international inbound	About 75 percent of letter mail and one-third of parcel volume	CPI; based on a forecast	Efficiency factor; costs, volume change
Germany	Letters up to 1,000 grams	About 63 percent of total volume	CPI; moving average; based on past inflation and a forecast	Efficiency factor; costs, including those caused by declining volume
Netherlands	Single piece letters up to 2kg; domestic parcels up to 10kg; outbound international parcels up to 20kg; mail for the visually impaired; registered and insured mail	About 14 percent of total volume	CPI; based on a forecast	Volume change; penalty for excess financial returns
Portugal	Correspondence up to 2kg, excluding marketing mail; parcels up to 10kg; catalogs, books, and newspapers; registered and insured items	30-40 percent of total volume	CPI; moving average; based on past inflation	Efficiency factor; variable costs; volume change; unexpected circumstances
Sweden	Stamped letters up to 250 grams	4-5 percent of total volume	CPI; moving average; based on past inflation	Costs; volume change
United Kingdom	Second class standard letters; second class large letters and packets, including parcels up to 2kg	< 5 percent (letter mail only)*	CPI; point-to-point; based on past inflation	None

*Estimate based on share of total revenue.
Source: OIG analysis.

The Purpose and Scope of the International Price Caps

The price caps evaluated by the OIG were designed to protect consumers from excessive price increases and support the efficient provision of the country’s universal postal service provided by the national postal operator.

All seven price caps at least partially limit price increases to the rate of inflation. Except in the United Kingdom, price cap formulas also include adjustment factors to help postal operators cover their costs. Adjustment factors can provide postal operators with additional price authority, allowing them to raise prices above the rate of inflation under certain circumstances.

The products that are subject to a price cap differ by country. This is due in part to the scope of the universal service varying across countries. For example, the Swedish price cap applies to stamped letters weighing up to 250 grams, while the Portuguese cap covers correspondence up to 2,000 grams. Moreover, some price caps include parcels, while others are limited to letter mail. In our sample, the percentage of total volume covered by the price cap varies from about 5 percent in Sweden to over 60 percent in Germany, compared to about 95 percent in the U.S.

How the Price Caps Incorporate Inflation

The Consumer Price Index is the measure of inflation used in all seven price caps examined by the OIG.²⁹ Postal regulators from each country stated that the CPI is considered an appropriate inflation index to use in the price cap, and no regulator suggested plans to switch to another index. In the United Kingdom and Portugal, postal operators unsuccessfully advocated for inflation indices that typically outpace the CPI.³⁰

While every country's price cap relies on the Consumer Price Index, different formulas are used to calculate the rate of inflation. Like the United States, some countries use a moving average, while others use the point-to-point method.

Additionally, four price caps are backward-looking and only consider the pace of inflation in the past (as is the case in the United States), while three rely on a forecast of future inflation. For example, the Dutch regulator will set the price cap for 2024 based on a forecast of inflation that year. In Germany, the price cap is based partially on past inflation and partially on a forecast of future inflation.

Adjustment Factors in the Price Caps

Internationally, rather than focus on the merits of the CPI, the debate has largely centered on the adjustment factors included in the price cap formula to keep rates affordable, while enabling postal operators to remain financially viable in the face of declining mail volume. Except for the United Kingdom, every country's price cap is based upon more than the rate of inflation.³¹ Under certain circumstances, this can allow national posts to enact price increases that outpace the CPI.

Six price caps take into account volume change. In some price cap formulas, volume change is a stand-alone component, while others include it indirectly.³² Some price caps also factor in costs associated with the universal service obligation, such as infrastructure and wages, or they allow additional price authority in the event of an unexpected or significant event. Unlike in the United States, four price caps reviewed by the OIG reflect efficiency gains that the provider is expected to make (sometimes called an X-factor), and the Dutch price cap includes a claw back provision, which reduces price authority if the post earned an "excessive" rate of return during the previous year. For details about each country's postal price cap, see [Appendix C](#).

²⁹ Belgium uses the "Health Index", a subset of its CPI that excludes alcoholic beverages bought in a store or consumed in a cafe, tobacco, and motor fuels except for LPG.

³⁰ In the United Kingdom, Royal Mail advocated for the Retail Price Index, and Portugal's post lobbied for a component of the CPI that tracks transportation prices.

³¹ Although the UK price cap formula only includes CPI change, the regulator may allow a one-off above-inflation price increase to ensure the provider earns a minimum rate of return on its capped products.

³² For example, the Swedish price cap formula includes a calculation of volume change, while the German price cap formula does not. In Germany, the impact of declining volume on unit costs feeds into the regulator's calculation of the X-factor.

Box 1: Putting Findings in Perspective: CPI Delivery Services (CPI-DS)

As discussed throughout this paper, Market Dominant price caps based on alternative indices could have yielded higher or lower price authority, revenue, or cost coverage than those generated by the CPI-U-based price cap. For five of the six indices, these differences, while significant, remain within a rather limited percent range. The potential impact of the sixth one, CPI-DS, appears to be massive in terms of cumulative price authority.

Table 7: Percentage Difference to CPI-U Based Price Caps (Moving Average Method)

	C-CPI-U	PCE PI	PPI FD	GDP PI	ECI	CPI-DS
Price Authority per Rate Case (FY 2011-H1 FY 2023)						
Percent Difference to CPI-U Based Price Authority (Average per Rate Case)	-0.2%	-0.3%	0.1%	-0.1%	0.1%	2.2%
Annual Revenue (FYs 2011-2022)						
Average Annual Percent Difference to Market Dominant Revenue Based on CPI-U Price Cap	-1.2%	-1.0%	-0.7%	-1.0%	1.5%	25.5%
Coverage of Postal Cost Inflation (FYs 2011-2022)						
Average Difference to Cost Coverage based on CPI-U Price Cap (Calculated Between Each Pair of Successive Rate Increases)	-0.2%	-0.2%	-0.1%	-0.1%	0.4%	2.4%

Source: OIG analysis.

The Relevance of CPI-DS for Market Dominant Price Cap Setting Purposes is Questionable

CPI-Delivery Services measures retail prices charged by package delivery companies other than the Postal Service. In addition, almost none of the Postal Service’s products covered by the cap are package products. A 2022 OIG white paper showed that, in the long term, the average prices of the Postal Service’s Competitive products as well as UPS and FedEx prices had increased much faster than CPI-U.³³ Recent figures confirm this trend. UPS and FedEx ground rates have increased by 77 percent from 2013 to 2023.³⁴

The Postal Service’s costs are influenced by many of the same drivers that influence competitors’ costs. In fact, NALC has argued that a CPI-DS-based price cap “would serve well as a benchmark for postage rates because the same factors that drive private-sector delivery prices – energy, transportation service expenses, and labor costs – also drive postal prices.”³⁵

However, while private sector delivery companies set prices in relation to commercial and profit goals, the Market Dominant ratemaking system, as designed by the PRC, is aimed at achieving the PAEA’s objectives, which primarily pertain to the Postal Service’s public service mission.

For example, the PAEA requires that the PRC take into account the effect of rate increases on the general public and business mail users. The CPI-DS is much more volatile than CPI-U and the other alternative

³³ See Figure 4: Competitive Price Increases versus CPI-U in OIG, “Inflation and the U.S. Postal Service,” p.17.

³⁴ Logistics, “2023 Annual Carrier General Rate Increase,” <https://files.lojistic.com/files/white-papers/2023-ups-fedex-gri.pdf>, p.2.

³⁵ National Association of Letter Carriers, “Comment of the National Association of Letter Carriers, AFL-CIO, Postal Regulatory Commission Docket no. RM2017-3,” p.22.

inflation indices, and the effect of additional volatility on the public and mailers could be a significant factor in any consideration of an alternative index.

A Full Revenue Impact Analysis Would Require An Ad Hoc Mail Elasticities Analysis

When showing the impact of different inflation indices on revenue and postal inflation cost coverage (Table 7) the OIG kept volume unchanged for illustrative purposes. The OIG did not attempt to measure what mailers' response to the high CPI-DS-based price increases could have been. The OIG chose this "all things being equal" approach only to illustrate the possible dollar amount effect of the pricing authority under the various indices. It is reasonable to assume that dramatic price increases under a CPI-DS formula would cause customers to send fewer mailpieces, limiting the potential revenue gains.

Conclusion

This white paper explores what the impact on price increases and revenue for Market Dominant products could have been had six other inflation indices been used in the price cap instead of the CPI-U. Overall, leaving out CPI-DS because of its outlier nature, five of the six alternative indices would have generally yielded slightly higher or slightly lower price authority, revenue, or cost coverage than the CPI-U-based price cap. Out of these five indices, ECI would have yielded the highest rate authority, revenue, and cost coverage, beating CPI-U along these three dimensions.

The sixth indicator, CPI-DS, might have generated massive financial benefits for the Postal Service in terms of revenue and cost coverage. However, revenue impact figures do not factor in price elasticities.

Looking individually at the 16 rate cases between FY 2011-H1 FY 2023, we found that some indices would have consistently yielded more price authority than the CPI-U price cap (ECI and CPI-DS), while others would have regularly yielded less (C-CPI-U and PCE PI). For GDP PI and PPI FD, the trend is not as clear as the other indices: some rate cases would have yielded slightly more authority using these indices instead of the CPI-U, while others would have yielded less.

Cumulatively, looking at *all* rate cases in *total* between FY 2011-H1 FY 2023, we found that price caps based on the C-CPI-U, PCE PI, and GDP PI would have allowed slightly less cumulative price authority than the CPI-U, while price caps based on the ECI and PPI FD would have allowed slightly more. The CPI-DS

would have permitted the Postal Service to raise its rates by over twice as much as the CPI-U price cap.

From a revenue standpoint, excluding CPI-DS, estimated average annual revenue could have fallen by as much as 1.2 percent (C-CPI-U) or increased by as much as 1.5 percent (ECI) had alternative inflation indices been used in the price cap between FYs 2011-2022. The CPI-DS is again a stark outlier: it could have resulted in 25.5 percent more estimated average annual revenue than the CPI-U.

Regarding how well the CPI-U and the six alternative inflation-based price authorities would have kept pace with postal cost inflation between FYs 2011-2022, we found that except for the CPI-DS, neither the alternative inflation indices nor the CPI-U would have fully covered the Postal Service's cost increases caused by inflation. In fact, three indices (C-CPI-U, PCE PI, and GDP PI) would have trailed postal cost inflation even more than the CPI-U. The ECI came closest to matching postal cost inflation, but still lagged it by an average of 0.4 percent a year.

Finally, in the United States and abroad, the recent debate over the price cap has centered on the role of additional rate authorities rather than on the merits of the CPI. While the PRC had the option to replace the CPI-U following its 10-year review of the ratemaking system, like other international regulators, it decided to authorize new adjustment factors instead.

Going forward, the challenge for regulators will be keeping rates affordable for mailers, while enabling postal operators to remain financially viable. Striking that balance has become significantly more difficult as mail volume continues to decline. With a follow-up review scheduled for 2025, the PRC will again have to grapple with complex decisions about the future of the Postal Service's ratemaking system.

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Appendix A: Additional Information

Objective(s), Scope, and Methodology

Objectives

The objectives of this white paper are:

- To identify, analyze, and compare alternative inflation indices to the Consumer Price Index for All Urban Consumers (CPI-U) for regulating price increases for Market Dominant products.
- To compare the United States Postal Service's basic price authority for Market Dominant products under the CPI-U with other indices, and to determine how those alternative indices would have aligned with postal costs.

Scope

The white paper focuses on identifying, analyzing, and comparing different inflation indices. We divided our research into several tasks:

- Task 1: Describe and compare the CPI-U and six alternative inflation indices.
- Task 2: Evaluate how foreign posts incorporate inflation into their price caps.
- Task 3: Compare the Postal Service's basic price authority for Market Dominant products under the CPI-U price cap with what the authority would have been using other inflation indices instead.
- Task 4: Analyze how the CPI-U and other inflation indices align with the Postal Service's costs.

While the white paper briefly discusses various components of price caps, such as an efficiency factor ("X-factor"), its focus is on the role of inflation indices in price cap regulation. Additionally, the paper does not analyze the new authorities granted by the Postal Regulatory Commission in 2020.

The white paper is strictly intended to provide a technical analysis. It does not make recommendations as to which inflation index, if any, should be used in the postal price cap.

Methodology

The OIG relied on several methods to complete the white paper's four tasks.

- Desk research: We conducted desk research to inform tasks 1 and 2. To develop a comparative analysis of inflation indices, we analyzed content produced by federal agencies, particularly the Bureau of Labor Statistics and the Bureau of Economic Analysis, and we reviewed the economic literature. To evaluate how foreign posts incorporate inflation into their price caps, we reviewed national postal laws, analyzed documents produced by postal regulators, and read reports on international postal price caps written by consultancy firms.
- Interviews with experts: To support task 1, we interviewed experts from the Bureau of Labor Statistics and the Bureau of Economic Analysis, and the Postal Regulatory Commission (Office of Accountability & Compliance). To support task 2, we interviewed representatives from seven European national postal regulatory agencies that oversee foreign posts with inflation-based price caps.
- Analysis by an external contractor: Tasks 3 and 4 relied heavily on economic analysis conducted by an external contractor, Christensen Associates. This contractor has longstanding expertise working for the Postal Service and the OIG on projects analyzing USPS costs, including the calculation of Total Factor Productivity, a ratio of total workload to total resource usage. Christensen Associates also conducted desk research in support of task 1. A complete summary of the methodology Christensen used to support tasks 3 and 4 can be found in [Appendix D](#).

The inspection was conducted in accordance with the Council of the Inspectors General on Integrity and Efficiency's Quality Standards for Inspection and Evaluation.

Prior Coverage

Title	Objective	Report Number	Final Report Date	Monetary Impact
<i>Inflation and the U.S. Postal Service</i>	To conduct a qualitative assessment of the impacts of inflation on the Postal Service's costs and revenue, to include and highlight how the Postal Service currently manages inflation-related risks.	RISC-WP-22-008	August 16, 2022	\$0
<i>A Closer Look at Postal Labor Costs</i>	To understand the Postal Service's labor costs and how they have changed in recent years.	RISC-WP-20-001	December 2, 2019	\$0
<i>Examining Changes in Postal Product Costs</i>	To examine and analyze product costs and cost changes from FY 2006 to FY 2015.	RARC-WP-17-005	March 13, 2017	\$0
<i>Revisiting the CPI-Only Price Cap Formula</i>	To analyze the impact of pricing regulations on the financial condition of the Postal Service.	RARC-WP-13-007	April 12, 2013	\$0

Appendix B: Summary of Six Alternative Inflation Indices

Appendix B describes the CPI-U and six alternative inflation indices.

	Goods and/or Services Bought by Consumers	Goods and/or Services Bought by Businesses and Governments	Includes Imports	Includes Exports	Chained Weight	Subject to Revisions	Sector Specific
CPI-U	✓		✓				
C-CPI-U	✓		✓		✓	✓	
PCE PI	✓	Partial	✓		✓	✓	
GDP PI	✓	✓		✓	✓	✓	
PPI FD	✓	✓		✓		✓	
ECI		✓					✓
CPI-DS	✓		✓				✓

Source: OIG analysis.

Consumer Price Index for All Urban Consumers (CPI-U)

The CPI-U is produced by the Bureau of Labor Statistics, and it measures the change in prices paid by urban or metropolitan consumers for more than 80,000 goods and services. While it excludes some consumers, such as those living in rural nonmetropolitan areas, farm households, and members of the armed services, the CPI-U covers over 90 percent of the U.S. population.

Unlike some inflation indices, the CPI-U exclusively tracks purchases made by consumers, ignoring expenditures by government agencies and businesses.

To identify which goods and services American consumers are purchasing, and the share of their budget those items represent, the CPI-U relies on data from the Consumer Expenditures Survey, conducted by the U.S. Census Bureau. To

determine the prices of the goods and services tracked by the CPI-U, the Bureau of Labor Statistics surveys approximately 23,000 retail and service establishments.

Items tracked by the CPI-U are weighted based on their share of consumers' budgets. Weights are updated annually. For example, because Americans spend more money on beef than poultry, changes in the price of beef would have a greater impact on the CPI-U. The CPI-U is most heavily influenced by the price of housing, comprising roughly 44 percent of the index. The next largest share is transportation, at nearly 17 percent, followed by food and beverages at just over 14 percent.

The CPI is a widely used measure of inflation. For example, it is used to update the official poverty thresholds based on inflation, to adjust Treasury inflation-protected securities, or to deflate nominal values of other economic series, such as retail sales and hourly and weekly earnings. However, some

postal stakeholders argue that it is not the best inflation index to regulate price increases. As the PRC conducted its 10-year review of the ratemaking system, some postal labor unions observed that the CPI-U is heavily influenced by housing and food prices – two expenses that the Postal Service does not face directly.³⁶

Chained Consumer Price Index for All Urban Consumers (C-CPI-U)

The Chained CPI-U is produced by the Bureau of Labor Statistics and has the same scope and objectives as the CPI-U, with an important methodological difference: while the expenditure weights assigned to each item in the basket of goods and services tracked by the CPI-U are updated *annually*, the C-CPI-U's expenditure weights are estimated every *month*.

The CPI-U is considered a “fixed weight” index with its weights remaining static for a year, until they are updated based on new Consumer Expenditure Survey data. By contrast, the C-CPI-U's weights are estimated every month.

An advantage of a “chained weight” index like the C-CPI-U is its ability to reflect consumer spending patterns that are more current. Much can happen after a basket of goods and services and their weights are set. For example, changes in relative prices can cause consumers to substitute a less expensive good or service for one that is more expensive. For example, if the price of fish rises faster than the price of chicken, consumers may begin to purchase more chicken and less fish. A “fixed weight” index could miss these shifts in consumer behavior and produce an inflation reading that does not fully reflect the average household budget. Because the C-CPI-U reflects consumer substitution away from more expensive items, it tends to register a lower inflation reading than the CPI-U.

A possible drawback to the C-CPI-U is that it requires regular revision. Updating the weights every month requires the index to estimate consumer expenditures, as actual data does not become available until many months later. Consequently, the

preliminary Chained CPI-U report is typically revised 10–12 months after it is released, and it can take nearly two years to report final values. A price cap based on the C-CPI-U might therefore rely partially on an estimate, and partially on final data.³⁷

In 2017, Congress passed a law requiring federal income tax brackets to be adjusted each year based on the C-CPI-U.

Personal Consumption Expenditures Price Index (PCE PI)

Like the CPI-U and the C-CPI-U, the PCE PI tracks prices of goods and services purchased by consumers in the United States. Produced by the Bureau of Economic Analysis, a component of the Department of Commerce, the PCE PI is the preferred inflation index used by the Federal Reserve when making monetary policy decisions.

While the CPI-U and the PCE PI both capture price changes across a wide range of consumer goods and services, they differ in scope. Both indices include purchases made by urban consumers, but the PCE PI tracks rural and farm populations as well. Additionally, while the CPI-U always excludes expenditures by government and businesses, the PCE PI considers those purchases to be in scope if they are made *on behalf* of a consumer. That includes government payments for medical services provided through Medicare and Medicaid, or an employer's contribution toward an employee's healthcare premium.

The CPI-U and PCE PI also have key methodological differences. The PCE PI is a “chained weight” index, so it may reflect more current consumer spending patterns, including substitution. The weights assigned to the goods and services tracked by the CPI-U and PCE PI also differ. The weights used in the PCE PI are based primarily on surveys of businesses such as retail trade surveys conducted by the Census Bureau, while the CPI-U relies on a survey of U.S. households. While both indices have sizable housing and food components, the PCE PI is much more heavily influenced by healthcare expenditures than the CPI-U.

³⁶ National Association of Letter Carriers, “Comment of the National Association of Letter Carriers, AFL-CIO,” Postal Regulatory Commission Docket No. RM2017-3, February 28, 2018, p.22, and National Association of Postal Supervisors, “Comments of the National Association of Postal Supervisors (NAPS),” Postal Regulatory Commission Docket No. RM2017-3, January 31, 2020, p.3.

³⁷ For more information about the CPI-U, the C-CPI-U, and other variations of the price index, see: Interagency Technical Working Group on Consumer Inflation Measures, Report to the Office of Management and Budget: Consumer Inflation Measures, June 16, 2021, <https://www.bls.gov/evaluation/technical-recommendations-for-the-consumer-inflation-measure-best-suited-for-conducting-annual-adjustments-to-the-official-poverty-measure.pdf>.

Gross Domestic Product Price Index (GDP PI)

The GDP PI is generated by the Bureau of Economic Analysis and tracks goods and services produced in the United States. The GDP PI is broader in scope than the CPI-U, which only tracks a basket of consumer goods and services.

The GDP PI includes goods and services bought by consumers, businesses, and government, including compensation for public sector employees. Unlike the CPI-U, it includes items that are exported from the United States, and it excludes imports.

The GDP PI is a “chained weight” index, and it is regularly revised.

In the past, the GDP PI was used to regulate price increases in the telecommunications sector. Today, it is used in the natural gas distribution sector for performance-based regulation.³⁸ Early postal reform bills proposed capping price increases at the rate of inflation, as measured by the GDP PI.

Producer Price Index for Final Demand (PPI FD)

The PPI FD tracks the prices that domestic producers receive for goods and services sold to consumers, businesses, and government. The index includes exports but omits goods and services imported into the country.³⁹

The PPI FD, which is produced by the Bureau of Labor Statistics, differs from other inflation indices in important ways. First, it only tracks prices of goods and services that are ready for final consumption. Goods and services that are sold as an input into the production process are excluded. A computer purchased by a college student would be in scope, while a semiconductor purchased by the computer’s manufacturer would not. Additionally, the PPI FD measures inflation from the seller’s perspective, rather than the purchaser’s perspective. Put differently, the PPI FD measures price changes based on the prices received by domestic producers.

Producer Price Indexes have been called “leading indicators” of consumer inflation. They detect changes in the prices received by producers. An

increasing PPI might forecast a coming increase in the CPI-U, as producers faced with higher costs may attempt to pass them on to consumers.

Like the CPI-U, the PPI FD is a “fixed weight” index, and its weights are updated every five years. PPI FD results can also be revised up to four months after they are released.

The PPI FD tracks a wide range of goods and services, including apparel, energy products, food and beverages, investment services, machinery, and transportation services. Its component with the largest weight is healthcare services, at approximately 17 percent.

While the PPI FD and the GDP PI have some overlap – they both include purchases by consumers, businesses, and government – they do not align exactly. For example, both indices track government purchases, but only the GDP PI includes compensation for government employees. Consequently, wages paid to government employees will not affect the PPI FD. The PPI FD also omits some items covered by the GDP PI.

Employment Cost Index (ECI)

The Employment Cost Index measures the change in the cost of labor, including wages, salaries, and benefits.

The ECI is released quarterly by the Bureau of Labor Statistics and covers the civilian workforce. Private sector employees and people who work for state and local government are included, while federal workers, military personnel, and employees in the agricultural sector are not.

The ECI is based on the National Compensation Survey, a nationally representative survey administered by BLS that provides data on pay and benefits. Like the CPI-U, the ECI is a “fixed weight” index, and it is not revised after publication.⁴⁰

ECI data can be used by decision-makers in the public and private sectors. The index influences pay adjustments for military personnel, informs the Federal Reserve about the health of the labor market, and it can help private sector companies

³⁸ Performance-based regulation rewards companies for achieving desirable outcomes, like modernizing their electric grid or emitting less pollution. Rewards can include additional price authority.

³⁹ Roughly 10,000 PPIs are released each month, spanning nearly every industry in the goods-producing sectors of the U.S. economy.

⁴⁰ One exception are the 3-month seasonal series.

determine how much they should adjust wages to stay competitive.

Consumer Price Index – Delivery Services (CPI-DS)

The CPI-DS tracks the prices consumers pay for delivery services, *excluding* prices paid to the U.S. Postal Service.⁴¹

According to the Bureau of Labor Statistics, the CPI-DS includes “fees for delivery of items such as letters, documents, and packages at non-U.S. Postal Service facilities.”⁴²

While BLS is prohibited from disclosing the names of companies whose prices it tracks, delivery services provided by companies like Amazon Prime, DHL, FedEx, and United Parcel Service could be included in the index.

The CPI-DS is a component of the CPI-U. While it represents a tiny share of the CPI-U – just 0.01 percent – the methodology used to construct it is the same as the broader index.

Some postal stakeholders have argued that the CPI-DS should be used to regulate prices for the Postal Service’s Market Dominant products instead of the CPI-U. They contend that it makes sense to benchmark the Postal Service’s price increases against the rest of the industry because the industry faces similar costs.⁴³ However, price increases may not always be linked to costs. For example, a company might raise its prices higher than its costs require, in order to maximize its profit.

⁴¹ Another subset of the Consumer Price Index – the “CPI-Postage” component – tracks the Postal Service’s postage prices.

⁴² The CPI-DS category does not include food and grocery delivery.

⁴³ National Association of Letter Carriers, “Comment of the National Association of Letter Carriers, AFL-CIO.”

Appendix C: International Postal Price Caps

Appendix C provides information about the price cap regulations in effect in seven European countries:

United Kingdom, Germany, Belgium, Portugal, Netherlands, Sweden, and France.

United Kingdom

National postal regulatory agency: Ofcom (Office of Communications)

Scope of the price cap

The safeguard cap includes a) one cap for second-class standard letters, b) a separate 'basket' cap covering second-class large letters and parcels up to 2 kg. The letter mail cap covers less than 5 percent of Royal Mail's revenue. The objectives of the safeguard cap are to ensure that access to the universal service is available to all at affordable prices, with particular focus on the needs of vulnerable consumers. Ofcom decided to set a cap for these products after determining that they were not subject to sufficient competition. Ofcom periodically revisits the list of products that are subjected to the price cap. For example, Ofcom has proposed that second class parcels up to 2 kg no longer be covered by the cap which will apply from 2024-2029.

Safeguard cap regulations remain in effect for a fixed amount of time, currently spanning five years. As a safeguard cap regulation approaches the end of its lifespan, Ofcom issues new regulations establishing a new cap.

Inflation index used in the price cap

Ofcom currently uses the Consumer Price Index to regulate postal price increases in the UK. The choice of an inflation index is Ofcom's; it is not mandated by statute.

Price cap formula

In the first year a safeguard cap regulation is in place, the universal service provider's rates may not exceed the base price, which Ofcom sets. In subsequent years, rates may not exceed the maximum amount a provider was allowed to charge during the previous year + CPI change. CPI change is calculated annually, using the point-to-point method, and is not based on a forecast.

Ofcom has a duty to ensure that the provision of services remains financially sustainable.

Accordingly, the safeguard cap should allow Royal Mail, the universal service provider, to achieve a minimum rate of return on capped services, and Ofcom has discretion to set the cap above inflation, if necessary, to ensure that services can be provided in a financially sustainable manner. In the past, Ofcom has allowed a one-off above-CPI adjustment.

Legal sources

UK postal law does not require Ofcom to set a cap on prices. In 2012, Ofcom determined that it needed to set a safeguard cap to ensure that products are priced affordably after removing the previous price control regime.

Additional relevant comments

According to Ofcom, the CPI is widely considered to be an acceptable inflation index for regulating price increases in the UK's postal sector. However Royal Mail has suggested that Ofcom use another measure, the Retail Price Index, instead.

Germany

National postal regulatory agency: BNetzA (Federal Network Agency)

Scope of the price cap

Letter mail up to 1,000 grams is subject to Germany's price cap. In 2022, letter mail represented 63 percent of the total volume delivered by Deutsche Post in Germany.

Inflation index used in the price cap

The Consumer Price Index is used to regulate postal price increases in Germany. According to BNetzA, the CPI is suitable for use in the cap because it reflects some of the input costs faced by the universal service provider. Moreover, providers cannot influence the CPI, as they could industry-specific or sector-specific indices.

Other components of the price cap

Germany's price cap formula includes an X-factor, which considers the provider's expected productivity growth, anticipated changes in letter volume, and costs. Costs include those associated with efficient

service provision, infrastructure, non-competitive wages, and pensions. The X-factor also incorporates a profit margin that BNetzA grants to the provider.

Price cap formula

Prices are allowed to rise by the rate of inflation, minus the X-factor. Germany's price cap remains in effect for a fixed term. The past three price caps each spanned a term of three years. Beginning with the 2016–2018 price cap term, BNetzA updated the inflation and X-factor calculations just once – at the beginning of the term. Therefore, the same inflation rate and X-factor remain in place for the duration of the three-year term. To calculate a single inflation value for the duration of the three-year term, BNetzA relies on historical inflation data, as well as a forecast of future inflation. According to BNetzA, revising the price cap just once every three years makes it easier for Germany's postal operators and consumers to plan.

Legal sources

BNetzA is required to use the Consumer Price Index in its price cap. Germany's postal law requires BNetzA to consider the costs of efficient service provision when calculating the price cap's X-factor. Moreover, the law requires BNetzA to consider the productivity growth rates of companies in comparable markets when setting the X-factor.

Belgium

National postal regulatory agency: BIPT (Belgian Institute for Postal Services and Telecommunications)

Scope of the price cap

Products subject to the price cap are grouped in a "small users basket" composed of single piece items such as domestic standard letters weighing up to 2 kg, outgoing domestic and cross-border parcels up to 10 kg, standard outgoing cross-border mail weighing up to 2 kg, and registered items and outgoing domestic and cross-border insured items. About 25 percent of the post's total volume is subject to the cap.

Inflation index used in the price cap

Belgium's price cap uses the country's Health Index as its measure of inflation. The Health Index is a subset of the Consumer Price Index. It is calculated by removing a handful of products from the CPI

product basket, including alcoholic beverages bought in a store or consumed in a cafe, tobacco, and motor fuels except for LPG.

Other components of the price cap

In addition to the Health Index, Belgium's price cap includes an X-factor. The X-factor is comprised of a volume factor, a cost reduction factor, and an efficiency gains sharing factor. The cost reduction factor represents the amount of cost reduction the universal service provider, bpost, is expected to achieve through efficiency gains and savings from declining volume. The cost reduction factor is codified in law at 2.8 percent and does not change annually. The efficiency gains sharing factor, which is also enshrined in law, represents the share of the efficiency gains that go to bpost, and the share that go to the public.

Price cap formula

Prices are permitted to rise by the rate of inflation, minus the X-factor. Inflation is calculated using the point-to-point method. The X-factor's volume component is based on a forecast. For example, the 2024 price cap will be based on 2024 volume forecasts for each product in the small users basket.

The price cap is adjusted annually. Inflation and volume data are updated each year, while the cost reduction factor and the efficiency gains sharing factor are specified in law and do not change.

Legal sources

The price cap formula is prescribed in law and BIPT has no leeway to deny bpost's request for a price increase if it complies with the terms of the price cap. Parliament revised Belgium's price cap in 2018.

Portugal

National postal regulatory agency: ANACOM (National Authority for Communications)

Scope of the price cap

Portugal's price cap applies to a basket of universal services, including correspondence weighing up to 2 kilograms (excluding marketing mail); catalogs; books; newspapers and other periodic publications weighing up to 2 kilograms; postal parcels weighing up to 10 kilograms, including delivery of postal parcels received from another EU member state weighing up to 20 kilograms; registered items; and insured items. Marketing mail and express mail are

not subject to Portugal's price cap. In all, between 30–40 percent of the post's volume is subject to the price cap.

Inflation index used in the price cap

Portugal uses the Consumer Price Index in its price cap. According to ANACOM, the CPI is the best proxy for inflation in Portugal's economy.

Other components of the price cap

In addition to inflation, Portugal's price cap accounts for variable costs and volume change, and includes an efficiency factor and, on an as-needed basis, an "unexpected events" offset.

Price cap formula

The current price cap agreement spans three years, from 2023–2025. The rate of inflation is updated each year and it is based on a moving average. For example, ANACOM will use the average rate of inflation between July 2022 and June 2023 when calculating the price cap that goes into effect in January 2024. Volume change is also updated annually.

Portugal's price cap also accounts for variable costs associated with the provision of the universal service, and it contains an efficiency factor. The variable costs component and the efficiency factor have fixed values that do not change during the price cap's three-year term.

If a significant, unexpected event occurs that impacts the provision of the universal service, an additional price authority (positive or negative) may be applied. Either the universal service provider, ANACOM, or the Directorate General for Consumers (a consumer body) may request the additional rate, but all three organizations must agree on it.

Legal sources

Portugal's postal law requires the criteria for price formation of postal services which make up the universal service to be negotiated and approved by ANACOM, the universal service provider, and the Directorate General for Consumers.

Additional relevant comments

Prior to 2022, the price cap formula included forecasts of inflation, volume, and costs changes over the period covered by the cap. The formula also included inflation and volume correction factors to

compensate for differences between forecasted and actual values. The formula was revised in 2022 to make it less complex and more predictable, eliminating the need to address persistent gaps between forecasted and actual values.

Netherlands

National postal regulatory agency: ACM (Netherlands Authority for Consumers and Markets)

Scope of the price cap

The Dutch price cap applies to single piece domestic and outbound international letters weighing up to 2 kg, single piece domestic (up to 10 kg) and outbound international (up to 20 kg) parcels, mail for the visually impaired up to 7 kg, and domestic registered and insured mail. Of the 2.2 billion letter mail pieces and parcels sent domestically each year, the price cap covers roughly 300 million, or about 14 percent.

Inflation index used in the price cap

The Dutch price cap uses the Consumer Price Index. It was selected for its simplicity, and because it fits the goal of ensuring an affordable universal service. According to ACM, the CPI is widely believed to be an appropriate inflation index for the Dutch price cap, and there have not been calls to replace it.

Other components of the price cap

In addition to the CPI, the Dutch price cap factors in volume change, and it includes an adjustment if the universal service provider earned an excessive rate of return during the previous year.

Price cap formula

The Dutch price cap is updated annually. Prices are permitted to increase by the rate of inflation, plus a correction factor that captures volume change, minus a correction factor capturing the difference between the universal service provider's actual rate of return and the allowed rate of return set in postal regulations, whenever the former exceeds the later.

The rate of inflation and volume change are based on forecasts. In 2023, when ACM calculates the price cap that will go into effect in 2024, it will use a forecast of inflation and volume change between 2023 and 2024. In 2025, when calculating the 2026 price cap, both forecasted values will be replaced with the actual values, which will be known by that point.

Postal regulations do not allow PostNL to achieve an annual rate of return higher than 9 percent on universal services. Returns above 9 percent will be deducted from the provider's allowed cap space.

Legal sources

Use of the CPI is required by Dutch postal regulations, leaving the regulator, ACM, no leeway to select a different inflation index.

Sweden

National postal regulatory agency: PTS (Swedish Post and Telecom Authority)

Scope of the price cap

Sweden's price cap applies to stamped letters weighing up to 250 grams. Just 4-5 percent of total volume is covered by the cap.

Inflation index used in the price cap

Sweden's price cap uses the Consumer Price Index as its measure of inflation. Because the primary purpose of Sweden's price cap is to protect consumers, the CPI is considered an appropriate index to use. According to PTS, while there was discussion in the past about selecting a different index that better reflects postal costs, government ultimately decided to retain the CPI.

Other components of the price cap

Sweden's price cap considers volume change, and average unit cost change.

Price cap formula

Sweden's price cap is updated annually. The price cap is calculated as the sum of:

- The percentage change in the CPI, and
- The percentage change in the volume of stamped letters, multiplied by a "factor" corresponding to the change in the average cost to deliver letters caused by volume change.

The rate of inflation is updated each year, based on a moving average. Volume change is also updated annually. PTS is required to recalculate the "factor" in Sweden's price cap at least every three years.

Legal sources

Swedish laws and ordinances serve as the basis of PTS' work, and the price cap formula, including the CPI, cannot be changed by the regulator.

France

National postal regulatory agency: ARCEP (Regulatory Authority for Electronic Communications, Postal and Press Distribution)

Scope of the price cap

France's new price cap framework spans 2024-2025 (previous price caps covered three or four years). It covers a basket comprised of all universal service products except international inbound items. The price cap covers about 75 percent of La Poste's letter mail business and one-third of its parcels business.

The price cap in France has dual goals: to protect consumers by controlling the trajectory of price increases, and to strike a balance between price increases, efficiency gains, and the public compensation of La Poste (the universal service provider) for its universal service obligation.

Inflation index used in the price cap

The French price cap under the 2024-2025 framework uses the CPI as its inflation measure.

Other components of the price cap

In addition to inflation, the price cap under the 2024-2025 framework considers the universal service provider's costs, revenue, cost-cutting initiatives, and volume change.

Price cap formula

The framework is released after a month-long consultation with stakeholders. Under the 2024-2025 framework, the price cap used forecasted values of inflation, revenue, costs, and volume change.

Legal sources

The law tasks ARCEP with developing the terms of the price cap framework after examining La Poste's proposal or, in the absence of a proposal, on its own initiative after having informed La Poste.

Additional relevant comments

At the end of the first year of the price cap framework, La Poste may propose modifications if circumstances changed significantly (e.g., if the pace of inflation is significantly different than what was forecasted). ARCEP may also conduct a review of the framework at the end of the first year.

Appendix D: Methodology

Appendix D provides an overview of the methodology used to calculate price authority, counterfactual revenue, postal cost inflation, and cost coverage.

Calculating Price Authority

- **Data sources:** The original source of the inflation indices was either the Bureau of Labor Statistics or the Bureau of Economic Analysis.
- **Scope of the analysis:** Once an inflation index series was downloaded, the 12-month moving average method was applied as laid out in 39 CFR § 3030.140–143. The dates for each rate case were established using information provided by the Postal Regulatory Commission, and only included rate cases that applied to First-Class Mail and Marketing Mail or Standard Mail. For subsequent analyses, price authority was also calculated using the point-to-point method. This was done by calculating the change in the raw inflation series between the dates covered by a rate case. The dates of each rate case were always preserved, including partial year rate cases.
- **Cumulative price authority:** To calculate cumulative price authority, an index equal to 100 was set at the start of the period. For each inflation measure, the index was then increased (or decreased) by the amount allowed by each rate case. The final value of that index was then divided by the starting value (100) and 1 was subtracted from it to get the cumulative price authority. Standard deviation was calculated as the standard deviation of the price authority across rate cases.
- **Deflationary periods:** Inflation indices occasionally show deflation. The OIG analysis does not ignore periods of deflation. Calculations of alternative rate authorities simply preserve all rate case dates and display negatives when they occur. For example, case R2017-1 using the CPI-Delivery Services index shows a negative price authority of -0.9 percent. This result is used at face value and

is not lower bounded by zero or ignored. While one could make another choice, this allows for a higher degree of comparability across indexes.

Calculating Counterfactual Revenue

Revenue data for Market Dominant products comes from public Revenue, Pieces, and Weight reports filed by the Postal Service on a quarterly basis. Because this information is filed quarterly and rate cases do not apply exactly at the start of fiscal quarters, the white paper makes several assumptions. First, it assigns the date of implementation to be the first full month after the stated implementation date. For example, if a rate case is to take effect January 22, the white paper assigns the implementation date to be February 1. Second, it evenly divides the revenue from a quarter among all months in that quarter. This means that January, February, and March will each be assigned one-third of the revenue observed for fiscal quarter 2. These allocated revenues represent the base revenue for the white paper's calculations. Since PPI FD begins in November 2009, the white paper omits rate cases earlier than this.⁴⁴

The next step in calculating counterfactual revenue was to calculate an index for prices using each inflation index. To do so, an index with the value of 100 in April of 2011 was assigned (the month before the rate case R2011-2 took effect).⁴⁵ Using the price authority given by each rate case, a counterfactual rate index for each inflation measure was calculated. This was done using the 12-month moving average method and the point-to-point technique.

To calculate the counterfactual revenue, the analysis first took the baseline revenue, reversed the price authority granted by the moving average CPI-U, and then inflated (or deflated) that revenue using the alternative index. Once the counterfactual revenue was established, its difference from the actual observed revenue was calculated.

⁴⁴ Rate cases R2008-1, R2009-2, and R2023-1 are excluded from this analysis.

⁴⁵ Although this analysis technically begins in April of 2011, it would be immaterial to begin it in January 2011 since all indexes would be 100 for the first months of 2011 because the preceding rate case occurred in fiscal year 2009 and was in place for all of 2011.

Calculating USPS Resource Price Inflation

Christensen Associates calculates postal cost inflation — which it calls “price of resource usage” — as part of its computation of Total Factor Productivity. Total Factor Productivity (TFP) is an index that measures how efficiently USPS uses resources to handle all aspects of its workload. The Postal Service uses TFP data for internal planning and analysis and reports TFP results in its financial statements and in required filings to the PRC.

USPS postal cost inflation is an inflation measure that is specifically tied to the mix of inputs used by the Postal Service. Resource usage is an aggregate of three component indexes: labor, materials, and capital. Labor is by far the most significant component of resource usage, accounting for 73 percent of total input in FY 2022, followed by materials (21 percent) and capital (5 percent).

Materials input is a cost-weighted aggregate of various categories of transportation inputs such as highway transport and air transport as well as non-transportation inputs like professional services and various utilities. First, expenses in each category from postal accounting systems are tracked. Next, price indices to estimate the inflation USPS faces in each category are compiled. Finally, quantity indices for each category as the portion of the expense change not attributable to inflation are computed.

Most of the materials price indices come from Bureau of Labor Statistics PPIs or CPIs, while a few of the price indices are derived from postal-specific price information. For example, “domestic network” air transportation expenses are deflated based on the terms of USPS’s shipping contracts with FedEx and UPS.

Capital input distinguishes inputs as owned versus rented, and by asset classes such as buildings, vehicles, and different types of equipment. Derived capital prices account for factors such as opportunity cost, economic depreciation, and asset price inflation to estimate an implicit rental price of USPS’s capital stock over time. Changes in these prices reflect capital inflation.

For each of the detailed categories of labor, materials, and capital, indices are maintained that estimate the price inflation faced by the

Postal Service for that expense category and then these inflation measures are aggregated using postal-specific weights. For this reason, this inflation measure is highly tailored to USPS business operations and hence is a suitable benchmark for evaluating how well other inflation measures such as the CPI-U track with actual postal cost inflation.

Comparing Counterfactual Price Authority with USPS Postal Cost Inflation

To compare USPS postal cost inflation with the various price authority amounts that would have been allowed using inflation indices other than the CPI-U, a price index starting at 100 in fiscal 2007 is set for each counterfactual price index. Increases are applied to the index at the start of the month following the implementation date listed in each rate case.

To get a “high level picture” of cost coverage, we first calculated the compound annual growth rate (CAGR) of postal cost inflation over FYs 2011–2022 and compared it to the CAGR of the inflation-based price authorities each inflation index would have yielded. We then did a “rate case by rate case” analysis. We first calculated postal cost inflation between two rate cases, using estimated postal indices for the month following the implementation of a rate case and the month of implementation of the next. To estimate a postal cost inflation index for a given month, we make them accumulate in a smooth manner over the fiscal year. Said differently, we assume that 1/12th of the cost inflation is implemented in each month. Finally, we compare postal cost inflation between two successive rate cases to the price increases the use of each inflation index would have yielded.

Appendix E: Management's Comments

SHARON D. OWENS
VICE PRESIDENT, PRICING & COSTING



October 31, 2023

CINDY COBHAM
DIRECTOR, RESEARCH AND INSIGHTS SOLUTION CENTER

SUBJECT: Management Response: Examining Alternative Inflation Indices for
Regulating Market Dominant Price Increases (Project Number 2023RISC003)

Thank you for the opportunity to review and comment on the Office of Inspector General's (OIG's) white paper, *Examining Alternative Inflation Indices for Regulating Market Dominant Price Increases*.

The Postal Service has consistently taken the position that the Commission should abandon price-cap regulation altogether. In our view, the price cap is unnecessary, because market pressures are sufficient to incentivize efficiency, service quality, and pricing restraint. The Postal Service agrees that in both the United States and abroad, recent postal price-cap focus has been more on supplemental rate authorities than on the base inflation index used in the price-cap formula. Still, it is noteworthy that the OIG has found that as a base inflation index, the Employment Cost Index (ECI) kept pace with USPS cost inflation from Fiscal Year 2011 to Fiscal Year 2022 more closely than any other index studied, including the one in actual use (CPI-U). As Figure 3 in the report shows, USPS unit cost inflation averaged to +2.8 percent per year over that period, while CPI-U grew by 2.1 percent per year on average and ECI grew by 2.4 percent per year on average.

The OIG has also properly described the CPI-Delivery Services (CPI-DS) index as an outlier, and included caveats, such as that this index reflects mainly the delivery of parcels (as opposed to letters or flats) by private-sector carriers, and that only the retail (as opposed to the commercial) prices charged by those carriers are represented in the index (pages 10 and 25).

E-SIGNED by SHARON OWENS
on 2023-10-30 16:38:21 EDT

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Vice President, Pricing & Costing

cc: *Corporate Audit & Response Management*

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