



COMMITTEE ON NATIONAL STATISTICS

Modernizing the Consumer Price Index for the 21st Century

A Consensus Study Report of

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

Hutchins Center on Fiscal and Monetary Policy

Brookings Institution

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Overview by [Dan Sichel](#) (Wellesley College and NBER)

Background

- In spring 2020, BLS contracted with National Academies to undertake study providing recommendations for CPI Modernization
- Recognized need and opportunities for modernizing the CPI.
- Recent attention on inflation highlights need for maintaining a “gold-standard” CPI



Panel Members

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What the Report Covers

- Using Alternative Data (“Big Data”) for price quotes
- Higher-level Expenditure Shares
- Housing/Shelter ([Raven Molloy](#) with discussion by [Frank Nothaft](#))
- Medical Care
- Price Indexes by Income Group ([Laura Rosner-Warburton](#) with discussion by [David Johnson](#))
- Organizational/structural considerations



If You Want to Know More . . .

- **Link to report:**

<https://nap.nationalacademies.org/catalog/26485/modernizing-the-consumer-price-index-for-the-21st-century>



Why now? Rapid Changes in Consumer Landscape

- More products; rapid product turnover, and larger share of information products
- More diverse outlets, with rising share of e-commerce (chart)
- Explosion of alternative digital data sources (“Big Data”)

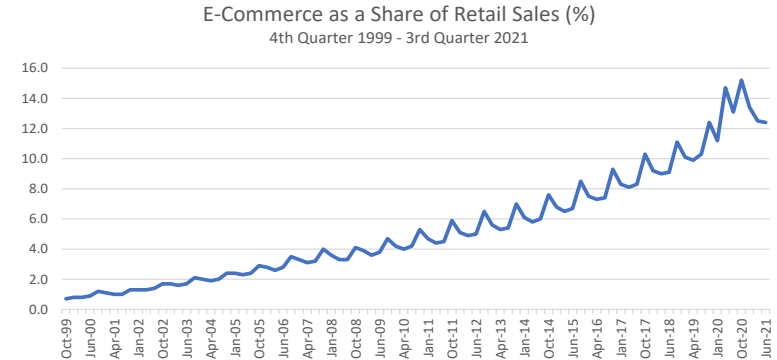


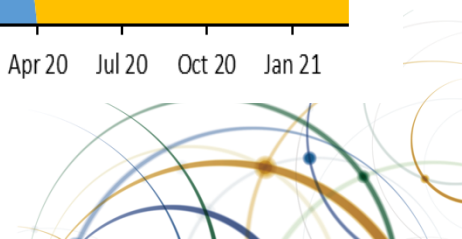
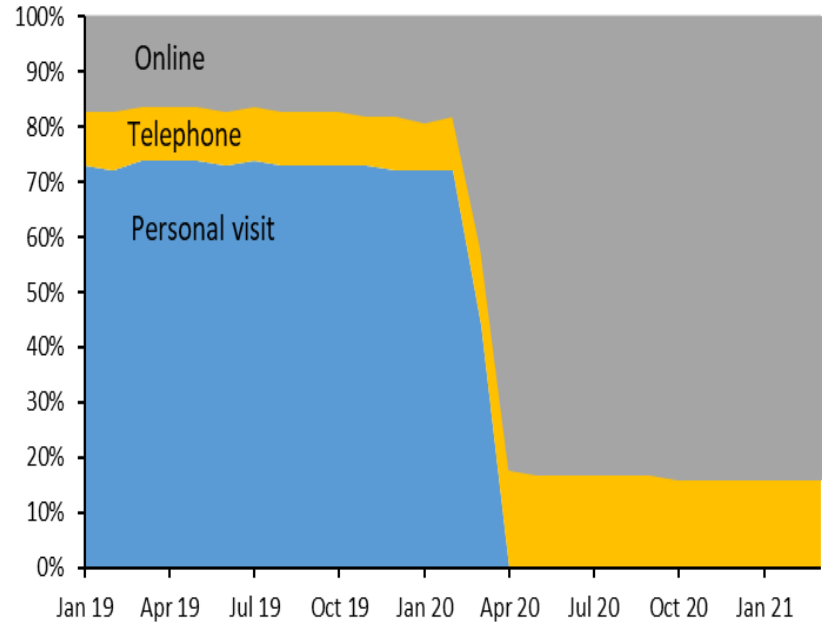
FIGURE 1-1 Growth of online shopping since 1999 in the United States (excluding food services).

SOURCE: Quarterly data from Retail Indicators Branch, U.S. Census Bureau.



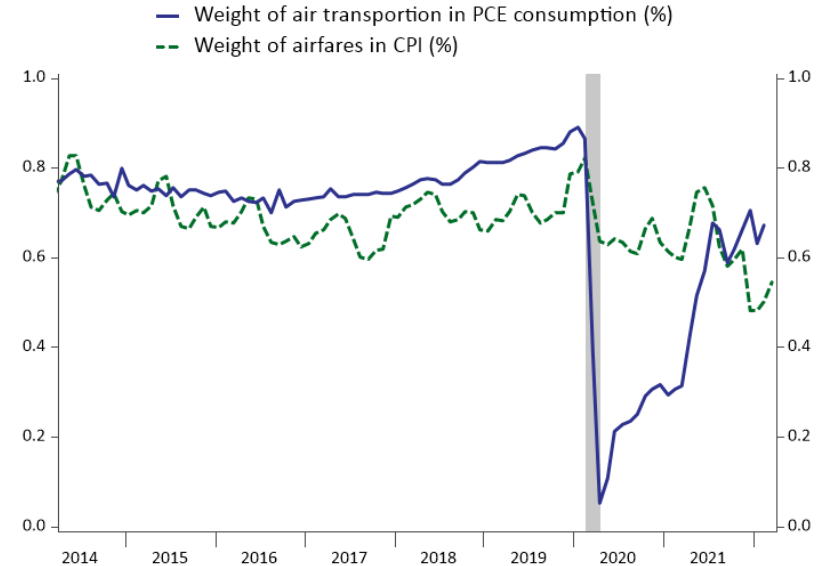
Why now? Price Quotes

- Until COVID, about 70 percent of price quotes from personal visits to outlets
- COVID highlights challenges of old methodology but also opportunities



Why Now? Expenditure Shares

- Survey response rates falling
- Current survey methodology too rigid to capture rapid changes in consumer behavior (e.g. COVID)
- New expenditure shares incorporated with average lag of 36 months
- Example: airfares (chart)



Sources: BEA/H, BLS/H/Haver/MacroPolicy Perspectives LLC



Big-Picture Message: Modernization is Imperative

- Imperative that BLS transition to a blended approach incorporating alternative data along with traditional data sources.
- Will require paradigm shift, lessening reliance on older survey-based approaches and methodologies.
- Will require new methodologies and new metrics for gauging data quality.
- The status quo is not a viable path forward.



Using Alternative Data for Price Quotes

BLS should embark on a broad-based strategy of **accelerating and significantly enhancing the use of transactions data and other alternative data sources.**

(Recommendation 2.1)

- Continue identifying promising alternative data sources: **scanner data, web-scraped, direct feeds from large retailers**
- Research to support use of:
 - Alternative data
 - Associated new methodologies (such as multilateral indexes)
 - Implications for measuring quality change
 - New metrics for assessing data quality.



At Same Time, Changes Must be Made Carefully

BLS should accelerate testing of new indexes . . . and maintain a significant overlap period during which parallel indexes based on new data sources can be tested (Recommendation 2.4)

BLS should ensure that key **information about data modernization is readily available to all stakeholders**. (Recommendation 7.6)



Higher-Level Expenditure Shares: Updating More Frequently and Rapidly

Current procedure: Long lag to introduce new expenditure shares.

- Weights introduced in January 2022 are average for 2019 and 2020 (average lag of 36 months).

BLS must update upper-level weights . . . more frequently and rapidly
(Recommendation 3.1)

- Ideally, the expenditure data used to calculate CPI weights would come from a single 12-month period ending no more than six months prior to their introduction.
(Recommendation 3.2)



Higher-Level Expenditure Shares: Alternative Data

BLS should invest in collecting comprehensive data for individual spending using electronic means of payments such as credit/debit cards or other electronic payment processors . . . (Recommendation 3.3)

BLS should consider **integrating PCE data** to adjust the acknowledged weakest categories of the Consumer Expenditure Survey. (Recommendation 3.4)

BLS should begin exploring **development of a household-based scanner recording program** that would capture prices, quantities, and item characteristics of purchases made by surveyed respondents. (Recommendation 3.5)



Organizational/Structural Considerations

BLS should designate a single, high-level person within the agency ... whose job is to lead data transformation efforts. Would ensure focused coordinated effort and accountability. (Recommendation 7.1)

More extensive collaboration between BLS, Census Bureau, and BEA . . . is needed to advance the acquisition and use of alternative data sources in the production of economic statistics. (Recommendation 7.2)

BLS should **enhance its contacts and collaborations with CPI staff in statistical agencies outside the United States.** (Recommendation 7.3)

Develop requisite staff expertise. (Recommendation 7.5)



Bottom Line

- Modernization is imperative
- Will require:
 - High-level focus
 - New skills
 - Resources
- Maintaining status quo not a viable option

