

Improving Consumer Inflation Statistics in the Digital Age: BLS Response to the CNSTAT Report

Jeffrey Hill

Associate Commissioner
for Prices and Living Conditions
Bureau of Labor Statistics

Rob Cage

Assistant Commissioner
for Consumer Prices and Price Indexes
Bureau of Labor Statistics

prepared for
Federal Economic Statistics Advisory Committee
June 10, 2021

■ Framework

- Measure price change more accurately
- Improve BLS' management of respondent burden
- Expand item and geographic coverage and/or publish new products
- Achieve cost savings / be budget neutral

■ Legal considerations

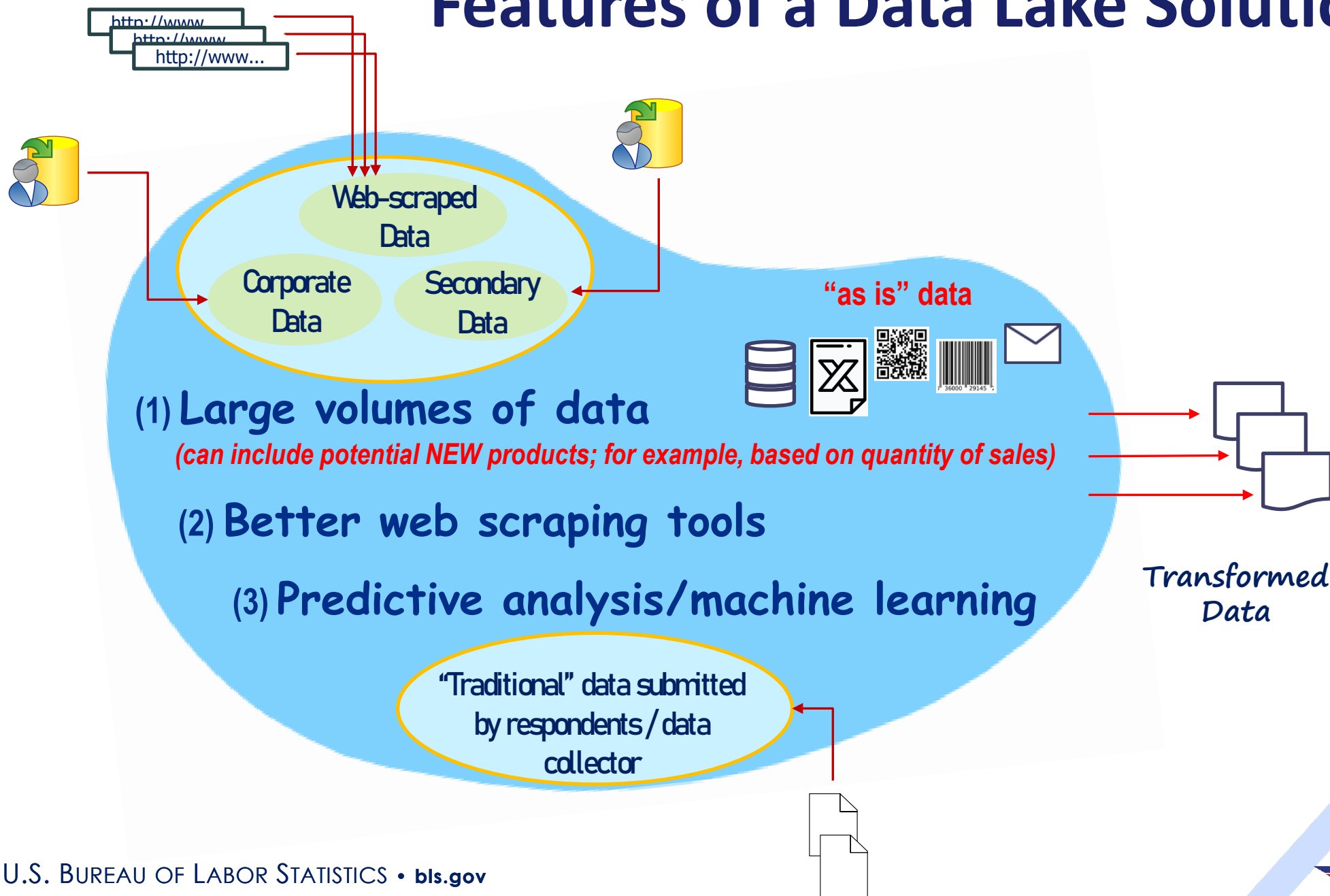
- CIPSEA
- Terms of service / contractual agreements
- Authority to Use / Authority to Operate

■ Data science

- Actively expanding skills and positions

■ Data lake pilot

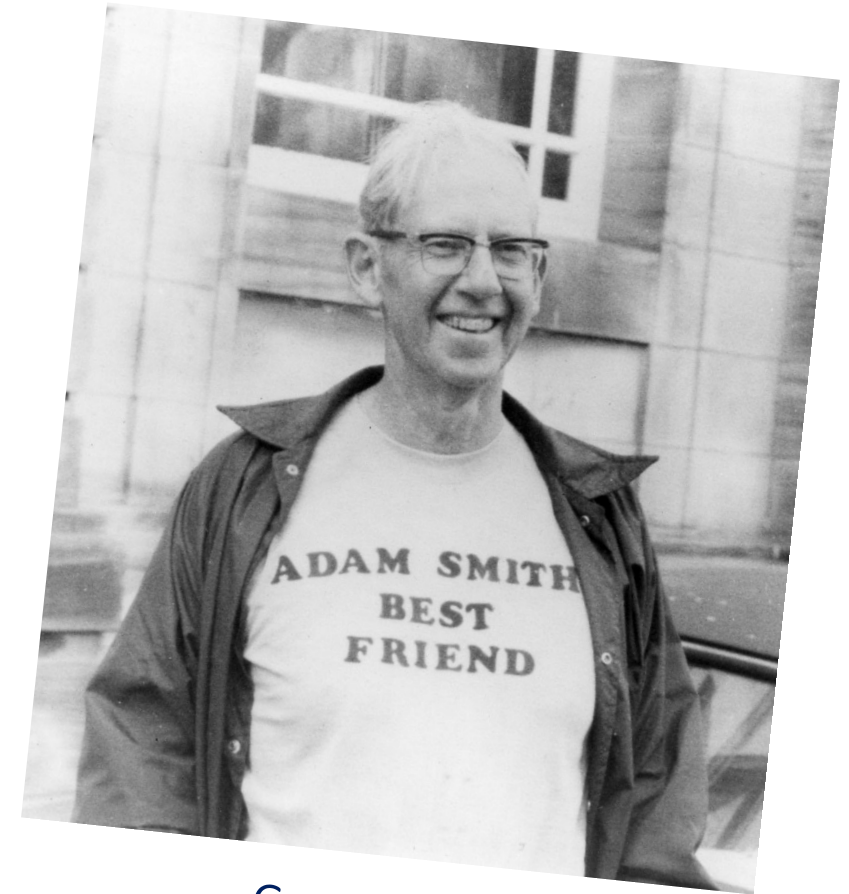
Features of a Data Lake Solution



Notable reports on improving the CPI: Congressional Committees

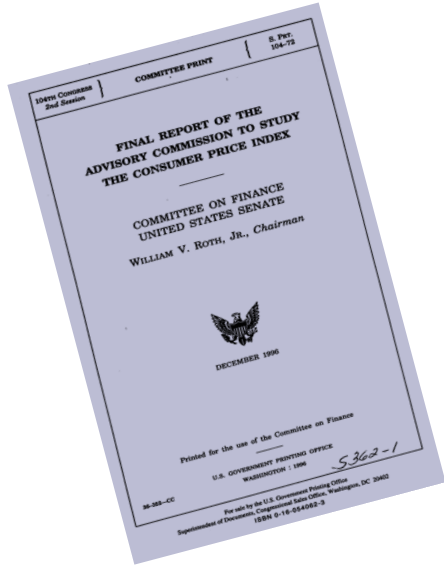
Price Statistics Review Committee (1961)

- ✓ Adopt the cost-of-living-index concept as CPI measurement objective
- ✓ Expand population coverage to all households in urban areas
- ✓ Create permanent price index research division in BLS



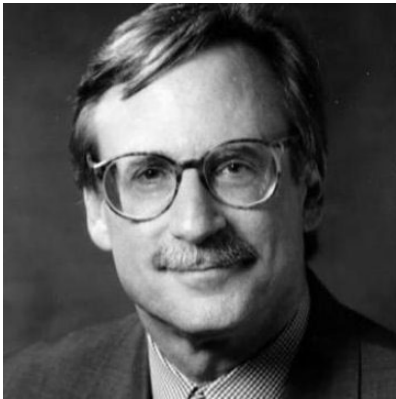
George Stigler
1911-1991

Notable reports on improving the CPI: Congressional Committees



Advisory Commission to Study the Consumer Price Index (1996)

- Quantified CPI biases at +1.1% (range of 0.8% to 1.6% per annum)
- ✓ Continuous, more frequent than decadal revisions of weights and samples
- ✓ Geometric formula at component level
- ✓ Adopt superlative aggregation at upper level
- ✗ Adopt flow of services approach for durables
- ✗ Adopt ex-ante measure for insurance



Michael Boskin

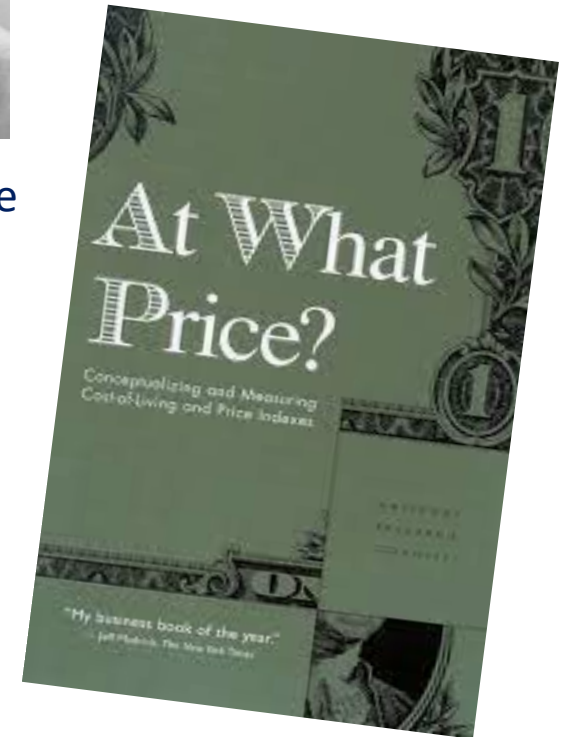
Notable reports on improving the CPI: NAS-CNSTAT

At What Price? (2002)

- 15 executive conclusions and recommendations
- ✓ Adopt *conditional* COLI as measurement objective
- ✓ Produce Chained CPI in real-time using C.E.S. formula
- ✓ Produce disease-based medical indexes
- ✓ Produce a PCE-weighted CPI
- ✗ Create a task force with CMS to construct a total medical care price index
- ✗ Establish an independent advisory council for hedonics
- ✗ Associate collected prices with household characteristics



Charles Schultze



Notable reports on improving the CPI: NAS-CNSTAT



Measuring What We Spend (2013)

- BLS adopted 9 of 12 recommendations
- ✓ Added data quality section to public website
- ✓ Online diary (July 2022)
- ✓ Streamlined interview questionnaire (starting in 2023)
- More info available at:
<https://www.bls.gov/cex/geminiproject.htm>

Notable reports on improving the CPI: NAS-CNSTAT



Modernizing the CPI for the 21st Century (2022)

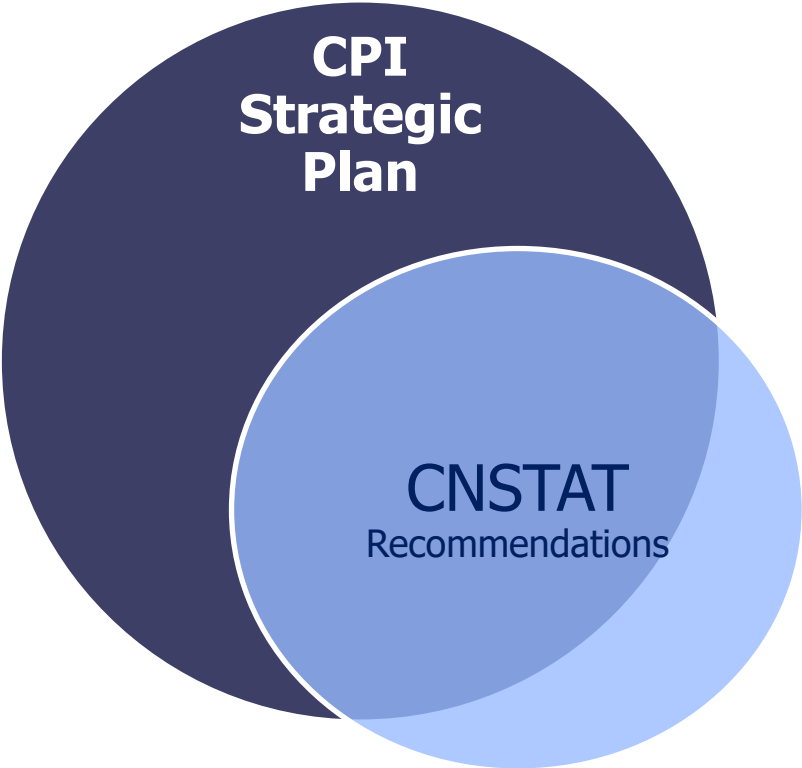
- 37 recommendations
- ? implemented within 5 years



Dan Sichel



CPI Strategic Plan



CPI 2021-2025 Strategic Plan

CPI Mission Statement

To produce timely, accurate, objective, and relevant measures of prices and price changes experienced by consumers.

CPI Vision Statement

Provide users with information they need when they need it by advancing the field of consumer price measurement.

We will do this within 5 years by:

Strategy 1 PRODUCTION

producing accurate and timely statistics

Strategy 2 IMPROVEMENTS

innovating new products and methodologies

Strategy 3 SOURCE DATA INNOVATION

harnessing the power of data

Strategy 4 ORGANIZATIONAL EXCELLENCE

changing the way we work

Strategy 5 CUSTOMERS AND OUTREACH

disseminating information transparently and collaborating with the global statistical community

Near term

- Prioritize identification and research of scanner data sources
- Develop an algorithmic approach to selecting substitute items
- Continue research and improvement of hedonic methods, notably for telecommunications and electronic items

Mid and longer term

- Expand web-scraping ability and use

Near term

- Implement annual weights for CPI-U and CPI-W

Mid and longer term

- Improve efficiency of household expenditure data collection and processing
- Improve timeliness of Chained CPI-U
- Incorporate Tornqvist in headline CPI-U

Near term

- Control for structure type in OER samples
- Improve rental equivalence weight imputation
- Publish special aggregate indexes by tenant status

Mid and longer term

- Mitigate lag caused by biannual pricing scheme
- Incorporate payments approach for household cost indexes

Near term

- Incorporate medical claims data for hospital outpatient and physician services

Mid and longer term

- Continue to research to improve indirect pricing approach for medical insurance
- Initiate efforts to consider appropriateness of direct pricing of medical insurance

Near term

- Continue researching methodologies for demographic cohorts

Mid and longer term

- Publish monthly research series by household income (notably low-income), possibly other demographic groups (e.g., renter vs. owner)
- Incorporate methods to control for price change heterogeneity at elementary level (outlets, unique goods, variation in transaction prices paid)

Near term

- Continue collaboration with Statistics Canada and U.K. Office of National Statistics
- Participate in UN sponsored statistical and price index committees

Mid and longer term

- Develop plan for coordination of data ingestion priorities within BLS and across federal statistical agencies

Question & Answer

