# Modernizing Economic Statistics

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SoDa Symposium

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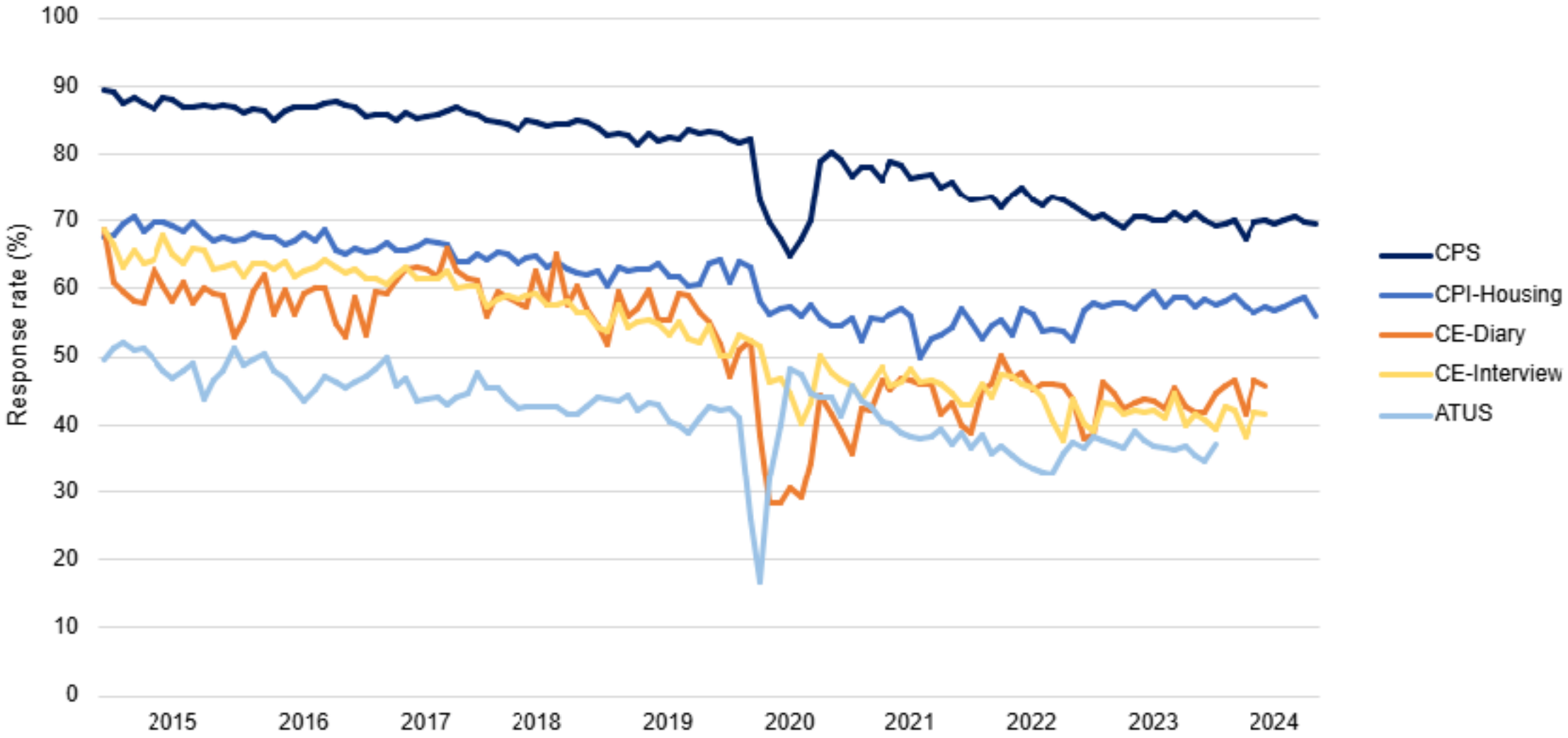
# Infrastructure and methods for U.S. economic statistics developed in years after WWII

- For decades, surveys based on probability samples have provided reliable estimates at lower cost than complete enumerations
  - Surveys underlie estimates of employment, unemployment, earnings, labor turnover, job openings, production, sales, prices, …
  - Samples designed to represent the population of interest
  - Questionnaires designed to collect desired information
- Periodic censuses provide benchmarks
- Administrative data contribute to estimates and used as benchmarks
- Tasks allocated across several statistical agencies
  - Bureau of Labor Statistics (BLS), U.S. Census Bureau and Bureau of Economic Analysis (BEA) primary responsibility for economic data

# Model has served nation well, but subject to growing pressures

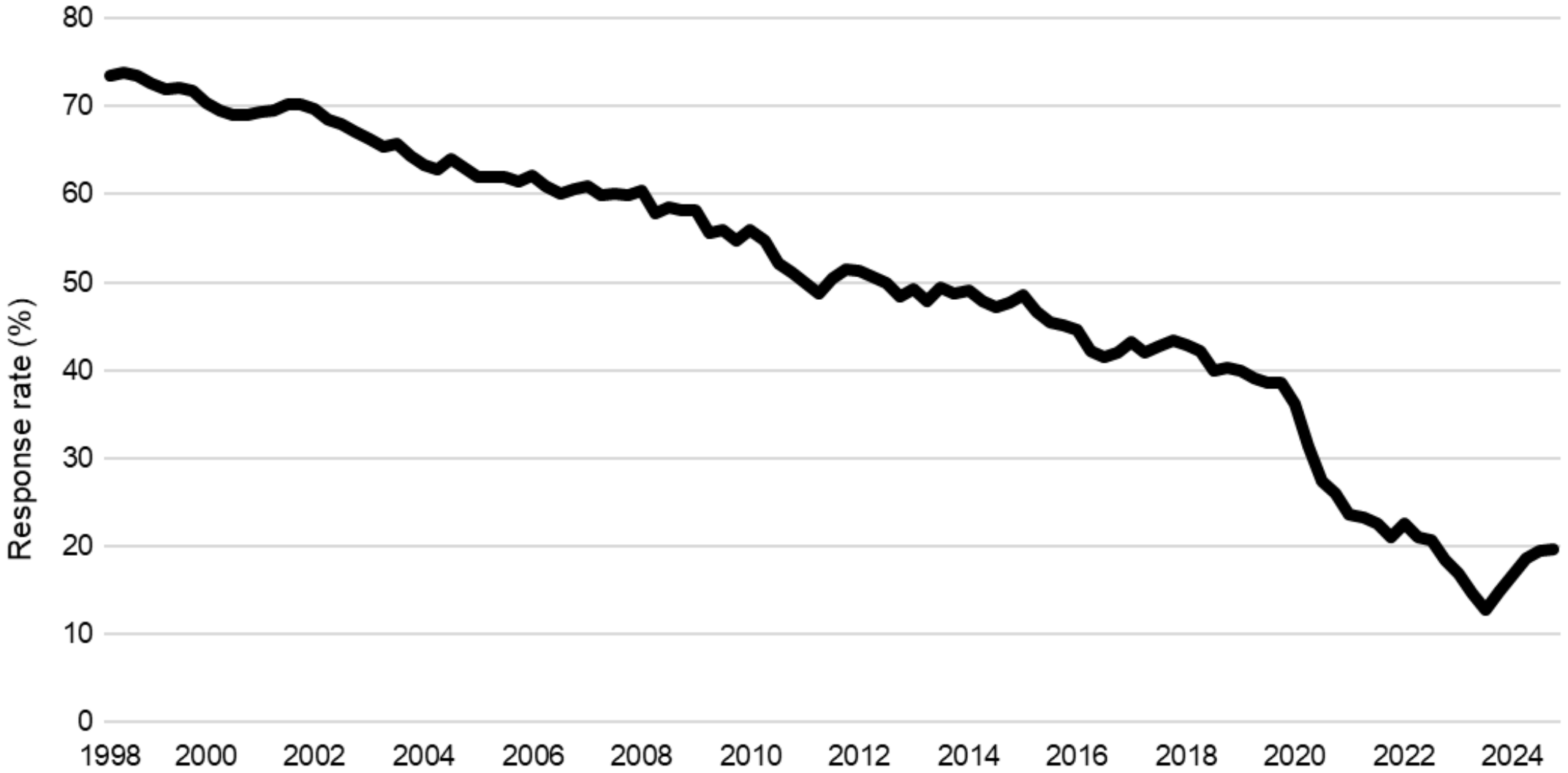
- Increasing difficulty of obtaining survey responses

# Response rates for US household surveys



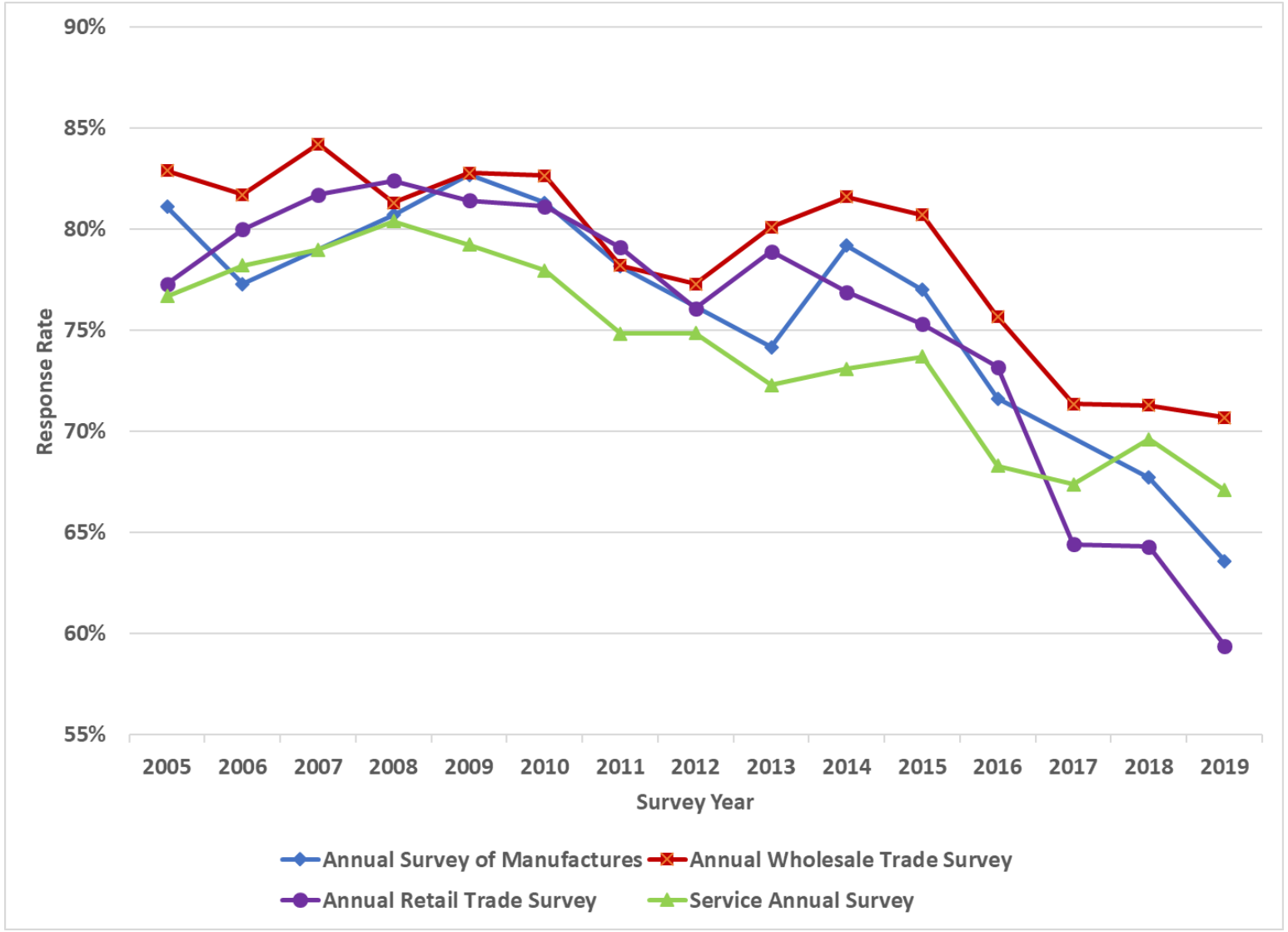

*Source:* Bureau of Labor Statistics

# Response rate for the UK Labour Force Survey




*Source:* Office for National Statistics

# Unit response rates, selected annual business surveys




Source: U.S. Census Bureau

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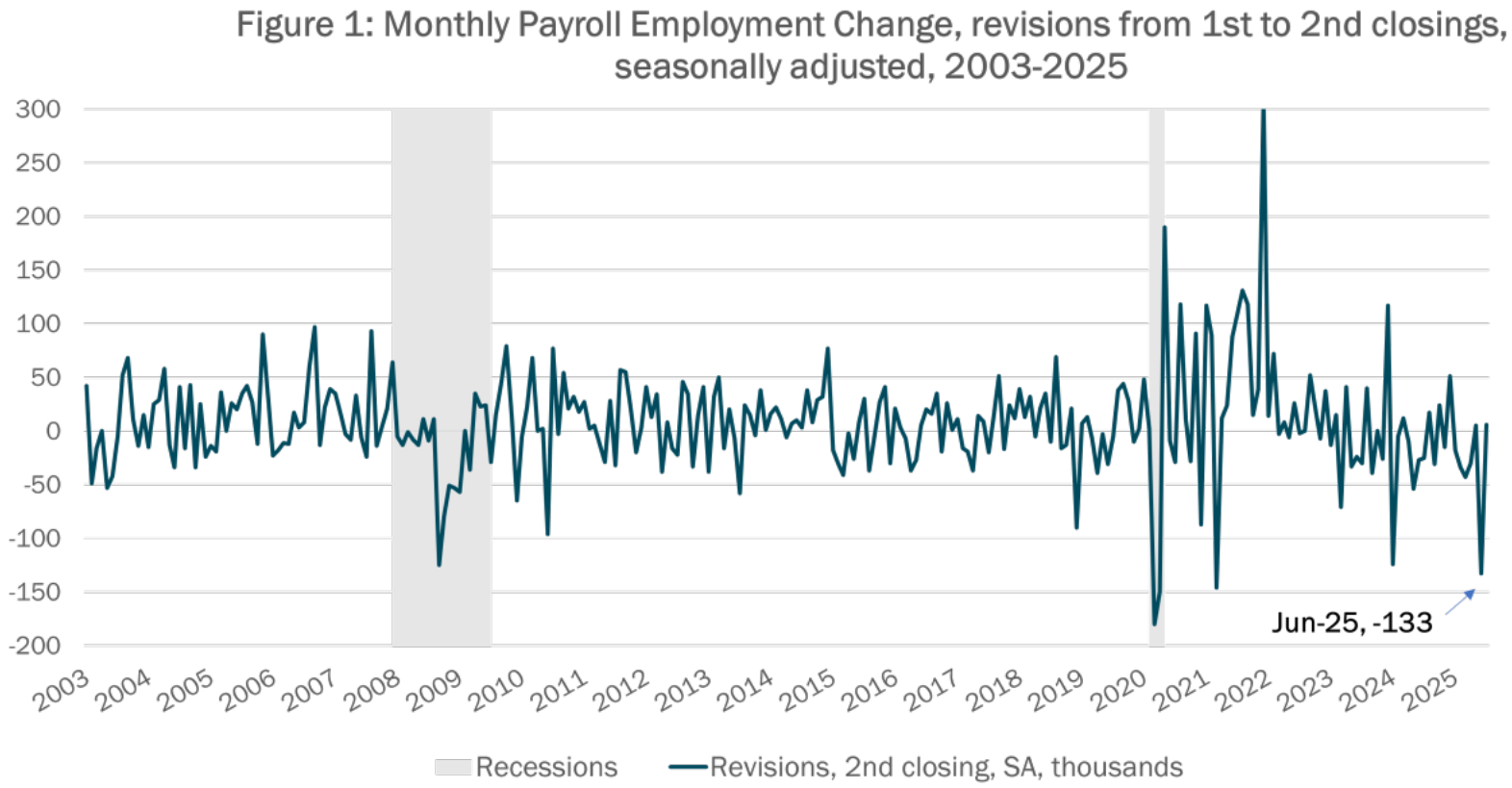
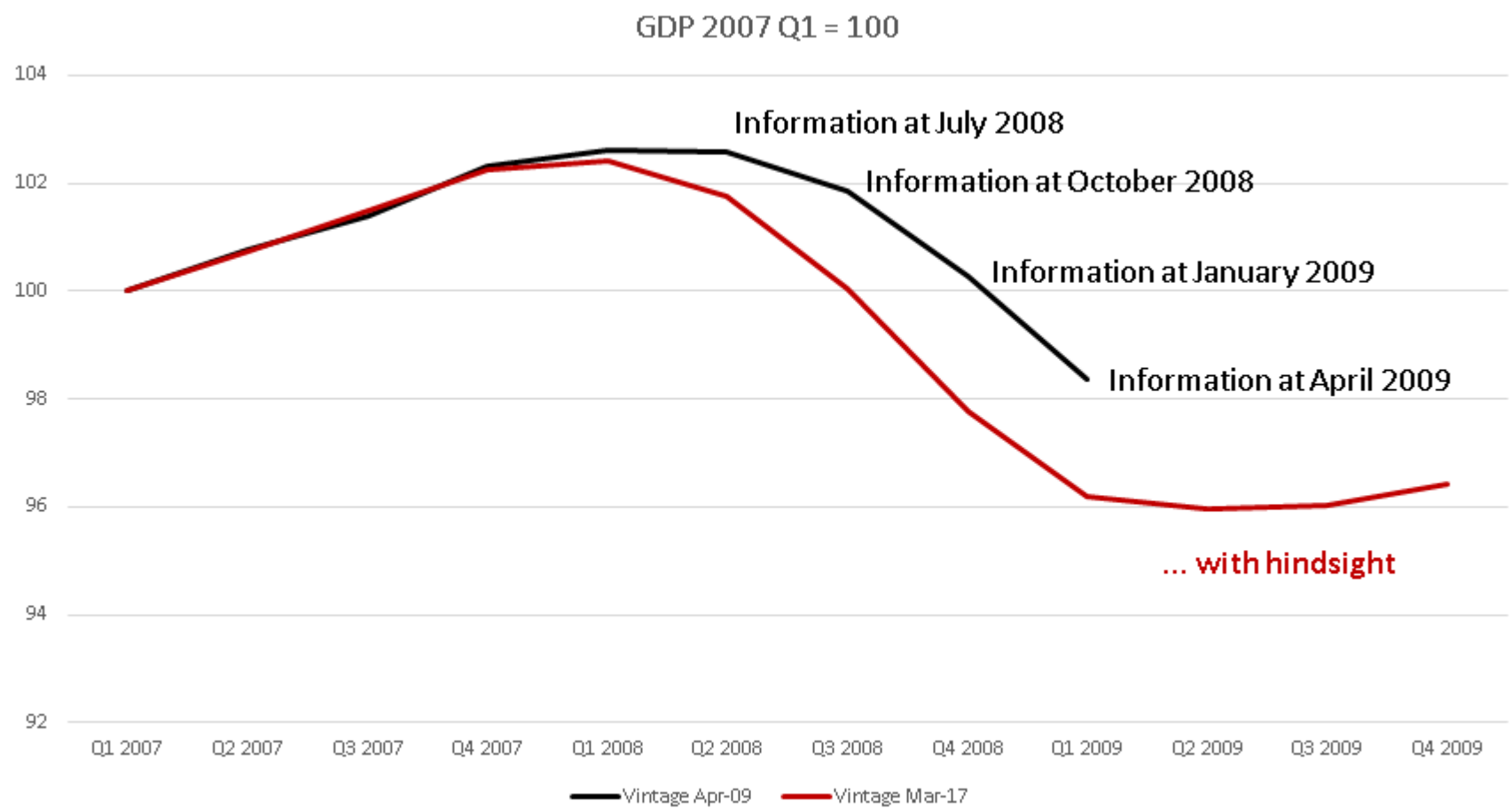
- Increasing difficulty of obtaining survey responses
- Increasing demand for more timely data with smaller revisions

# BLS payroll employment revisions

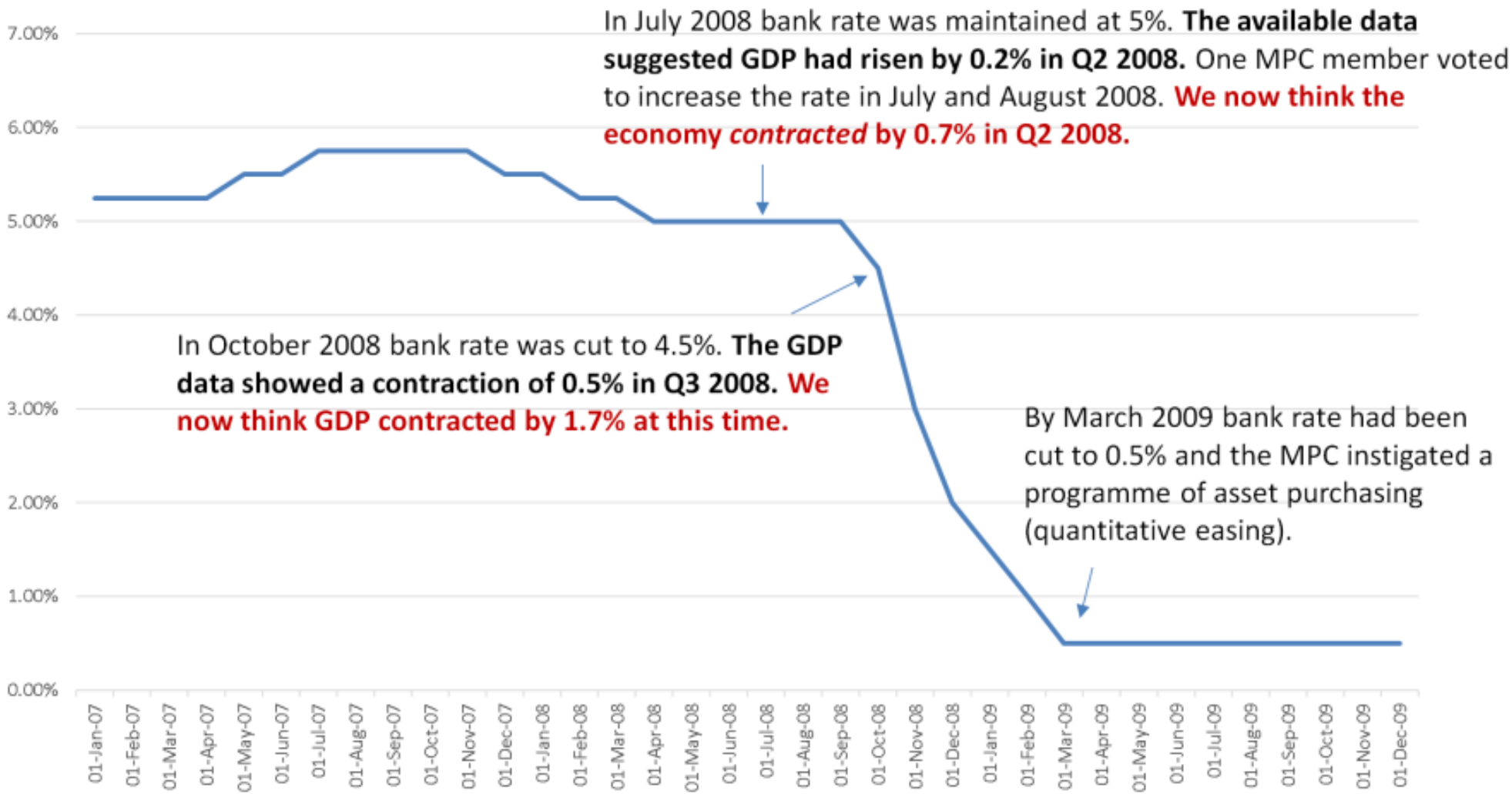



Source: Michael W. Horrigan, "BLS Revisions to Payroll Data Are Concerning, but not for the Reasons the Trump Administration Thinks," W.E. Upjohn Institute, 9/29/25.
https://www.upjohn.org/horrigan-bls-revisions-payroll-data-are-concerning-not-reasons-trump-administration-thinks

# UK GDP estimates during the Global Financial Crisis



# Bank of England “Bank Rate”: 2008-09



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- Increasing demand for more disaggregated data
- Stagnant or declining agency budgets

# Big data to the rescue?

- Natively digital data have proliferated in recent years
- Economic statistics agencies considerable experience with *administrative* big data; use of such data increasing
- Increasing interest in use of naturally occurring data from *private sources* in the production of economic statistics to:
  - Reduce respondent burden
  - Increase timeliness and/or reduce revisions of published data
  - Increase the granularity of published data
  - Lower statistical agency costs?

# Wealth of naturally occurring private data

- Scanner data from retail outlets
- Prices, product characteristics and other information on the Web
- Credit card transactions data (e.g., JP Morgan Chase data, Spending Pulse MasterCard data)
- Payroll processing and scheduling data
- Sensor data (e.g., satellite imaging, traffic cameras)
- GPS tracking data (e.g., tractors, trucks)

# Statistical agencies are actively exploring the potential uses of new data sources

- A few examples:
  - BLS: Substituting data from alternative sources of data on prices in the CPI where feasible and cost-effective
  - Census Bureau: Using point-of-sale data to strengthen national retail sales estimates and as an input into regional sales estimates
  - Census Bureau: Developing methods to use satellite images to estimate housing starts, completions and selected housing characteristics
- With time and resources, more could be done!
  - Possible to go beyond substituting new source data into the existing production processes to rethinking the production processes themselves

# Economic Measurement Research Institute (EMRI)

- Objective: Initiate and support research collaborations among federal statistical agencies, the business community, and academic experts in order to advance improvements in economic statistics and the development of new economic measures.
- The EMRI will
  - Support research collaborations to develop new approaches that address agency priorities and have a path towards implementation
  - Provide funds for junior scholars to purchase data needed for economic measurement research
  - Convene workshops and conferences focused on improvements in economic measurement
- Housed at the National Bureau of Economic Research; Co-Directors Katharine Abraham and Matthew Shapiro; Executive Director Dylan Rassier.
- Initial funding for three years from the National Science Foundation, with additional support from Sloan Foundation

# Prices and quantities: The RESET project

# Status quo:  Decentralized data collections

- Real output
  - Census collects the “numerator”:  Revenue=P*Q
  - BLS collects the “denominator”:  Prices
  - BEA does the division:  Q = P*Q/P
- Price and quantities collected separately
  - Increasing difficulty in obtaining survey responses
  - High cost and burden
  - Price and revenue data mismatched
  - Can’t easily account for product turnover

# RESET Project: Re-Engineering Statistics using Economic Transactions

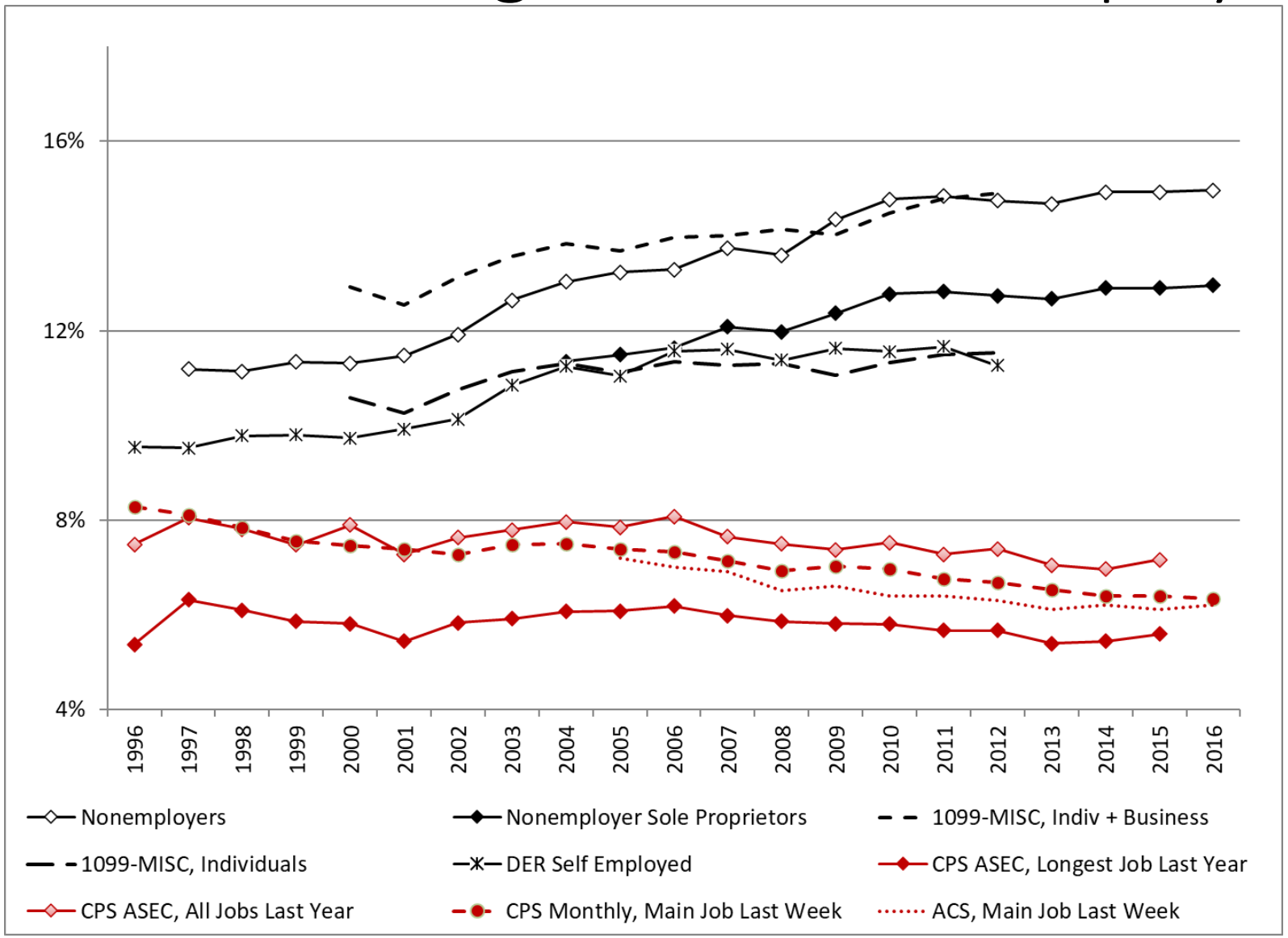
- Measure consumer price inflation and components of GDP from item-level transactions ("point of sale" or "scanner" data)
- 21st Century statistical infrastructure
  - Replace current system of surveys and enumerations with a pipeline from business information systems to statistical agencies
- RESET Demonstration Project
  - Collaboration between University of Michigan, University of Maryland, Census Bureau, and Circana

# RESET demonstration project plans

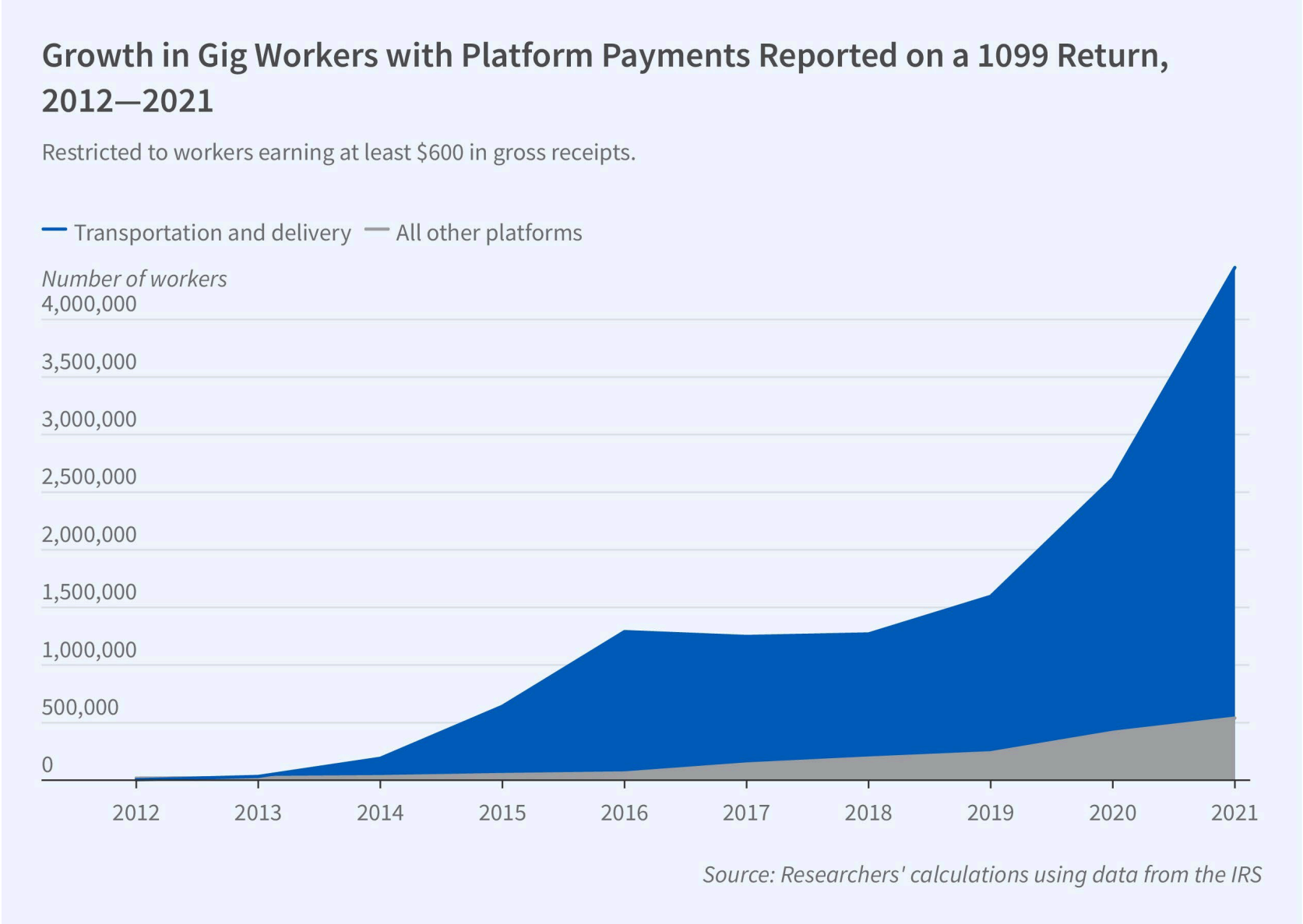
- Indices:  National-level indices of price and quantity
  - Consistent, simultaneous measures of price and quantity (instead of separate surveys from different sample)
  - Near census of transactions monthly (instead of 5-year Economic Census)
- Circana coverage: near universe of transactions for most consumer goods
  - Includes food at home, consumer packaged goods, general merchandise (e.g. tech goods and apparel)
  - Excluding vehicles, gasoline, furniture, and prescription drugs
- Frequency:  Monthly
- Timeliness:  At least as timely as CPI and GDP
- Confidentiality:  No individual firm data exposed to researchers

# Labor market statistics

# Survey and administrative data have told different stories about growth in self-employment

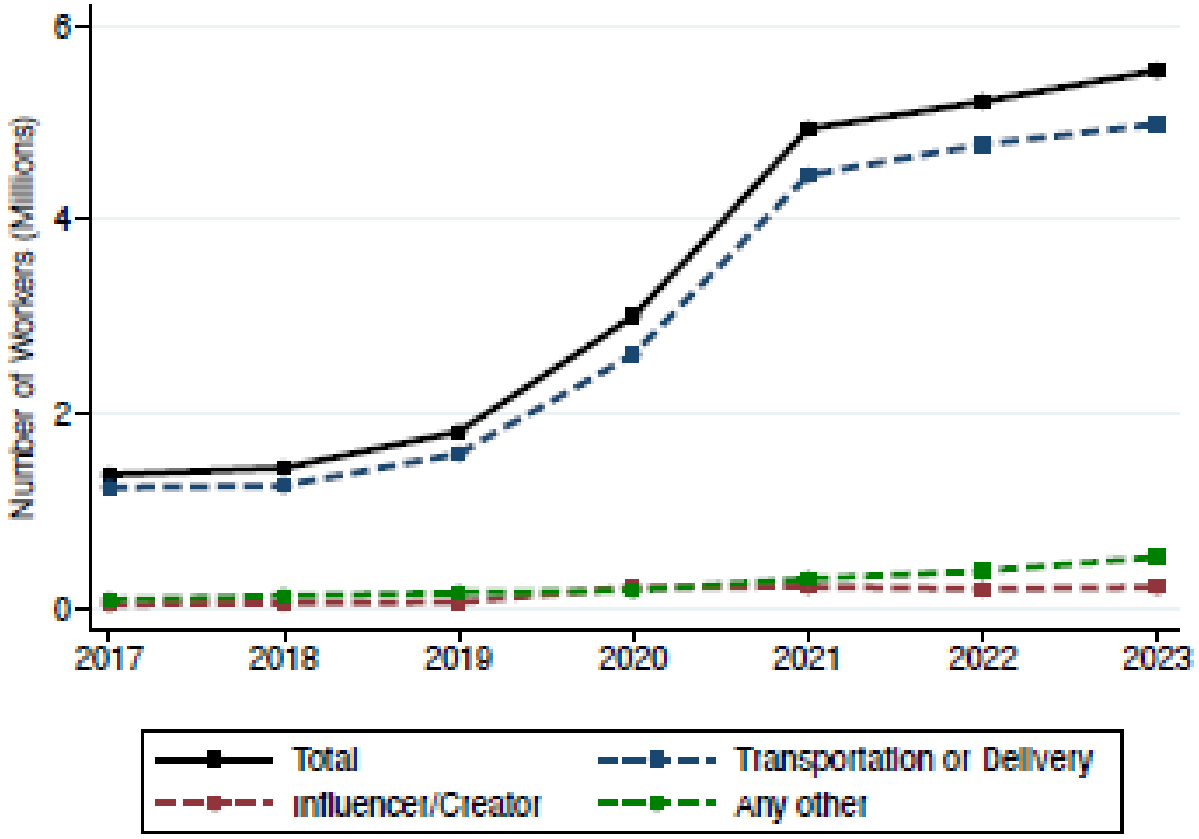



Source: K. Abraham, J. Haltiwanger, K. Sandusky and J. Spletzer, "Measuring the Gig Economy: Current Knowledge and Open Issues," in C. Corrado, J. Haskel, J. Miranda and D. Sichel, eds., *Measuring and Accounting for Innovation in the 21st Century*, 2021.



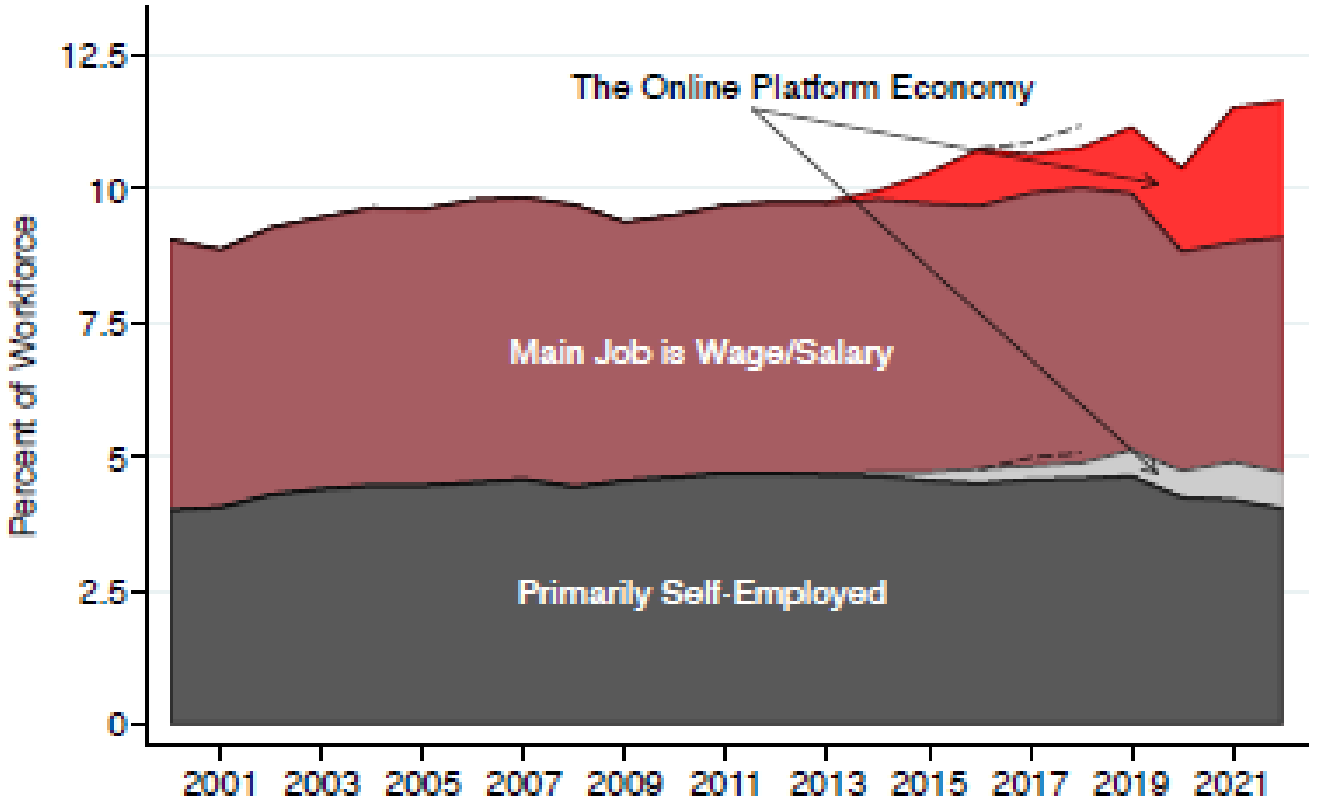

Source: A. Garin, E. Jackson, D. Koustas, and A. Miller, “The Evolution of Platform Gig Work, 2012-21,” NBER WP 31273, 2023.

# Composition of platform work, 2017-2023




Source: A. Garin, E. Jackson, D. Koustas, and A. Miller, "The Evolution of Platform Gig Work, 2012-24," in S. Houseman, A. Polivka, and A. Sahin, *The Changing Nature of Work* (forthcoming, University of Chicago Press).

# Gig economy work: Primary or secondary

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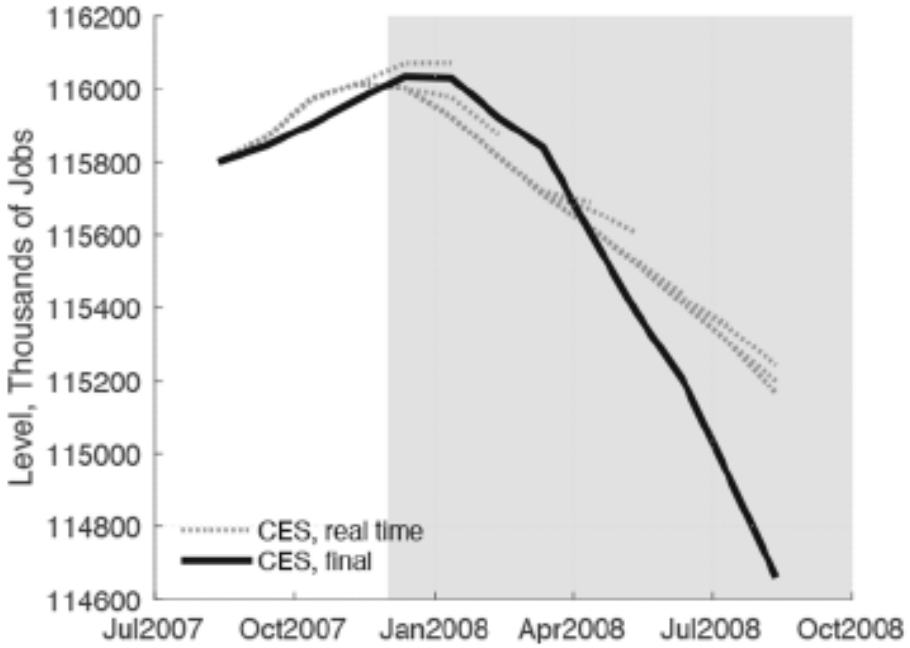
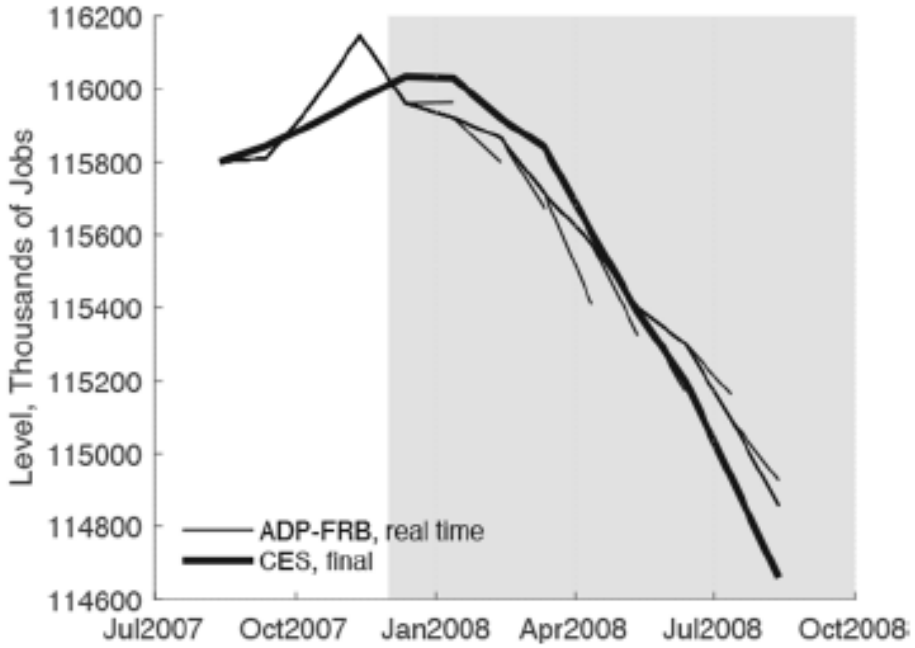
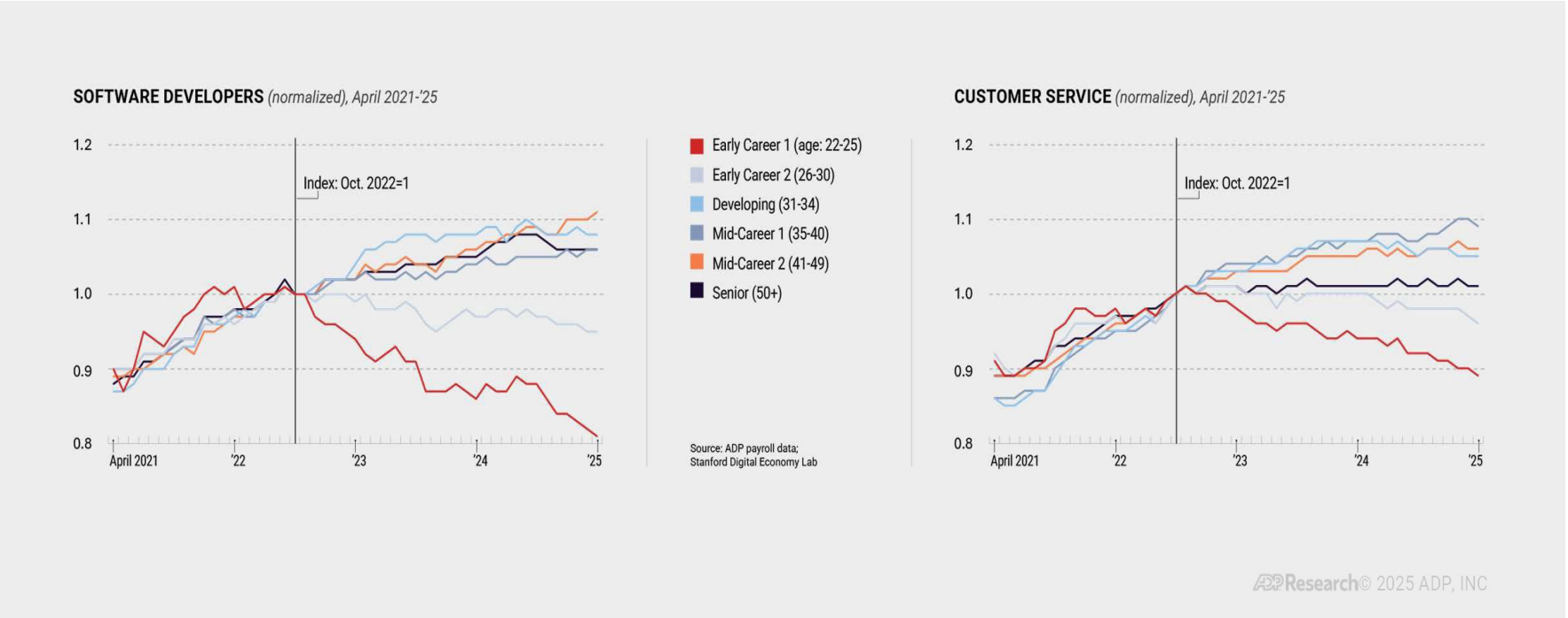
# Data from payroll service providers could reduce revisions in monthly employment estimates




Source: T. Cajner, L. Crane, R. Decker, A. Hamins-Puertolas, and C. Kurz, "Improving the Accuracy of Economic Measurement with Multiple Data Sources: The Case of Payroll Employment Data," in K. Abraham, R. Jarmin, B. Moyer and M. Shapiro, *Big Data for Twenty-First Century Economic Statistics,* 2022.

# Private sector data can provide rich occupation detail




Employment for early career software developers and customer service workers fell dramatically after the release of AI tools.

Source: N. Richardson, presentation at “Advancing Economic Measurement” NBER conference, November 13, 2025.

# Investments in R&D and other intangibles

# Two EMRI projects related to R&D, other intangibles

- Jan Eberly: Use new information on income statements of businesses to lay the groundwork for improving the measurement of intangible capital to account for investments in R&D.
- James Traina: Linking of data from the NSF Business R&D and Innovation Survey to other business data housed at the Census Bureau to generate new estimates of the contribution of R&D to productivity growth in manufacturing.

# Potential future directions

# Many topics on which work could be fruitful

- One area of particular interest: Geographically disaggregated statistics
- Researchers are thinking about projects to
  - Use transactions data to trace flows of consumption across regions
  - Incorporate administrative data into the production of state-level income and poverty estimates
  - Exploit remote sensing data to improve local crop estimates
- Lots to be done!

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