The **Double Whammy** of **AI** for Official Statistics

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United States® Census Bureau

The First Whammy

- Statistical agencies need to figure out how to use **AI** to do their work better.

Lots of “help” out there for this. But not so much for the…

. . . Second Whammy

- It’s the work of statistical agencies to measure the impact of **AI** on the economy.

So, let’s focus on the Second Whammy.

My Lens

Goal: Improved Economic Measurement

- More relevant
- More detailed
- More timely
- More accurate

My Roles:

- Economist
  - ~~Past Ron~~
- Boss
  - ~~Past Ron~~
- Economist and Private Citizen
  - **Future Ron**

What do we need to know?

- Impact on economic growth
  - In particular, the impact of productivity growth
- Impact on labor markets

Or, translated into statistical agency-speak…

Is our Economic Measurement Infrastructure *(both official statistics and other measures)* up to the task?

- Measuring adoption?
- Productivity of adopting firms?
- Impacts on labor demand and wages?
- Investment?
- Prices?
- Trade?

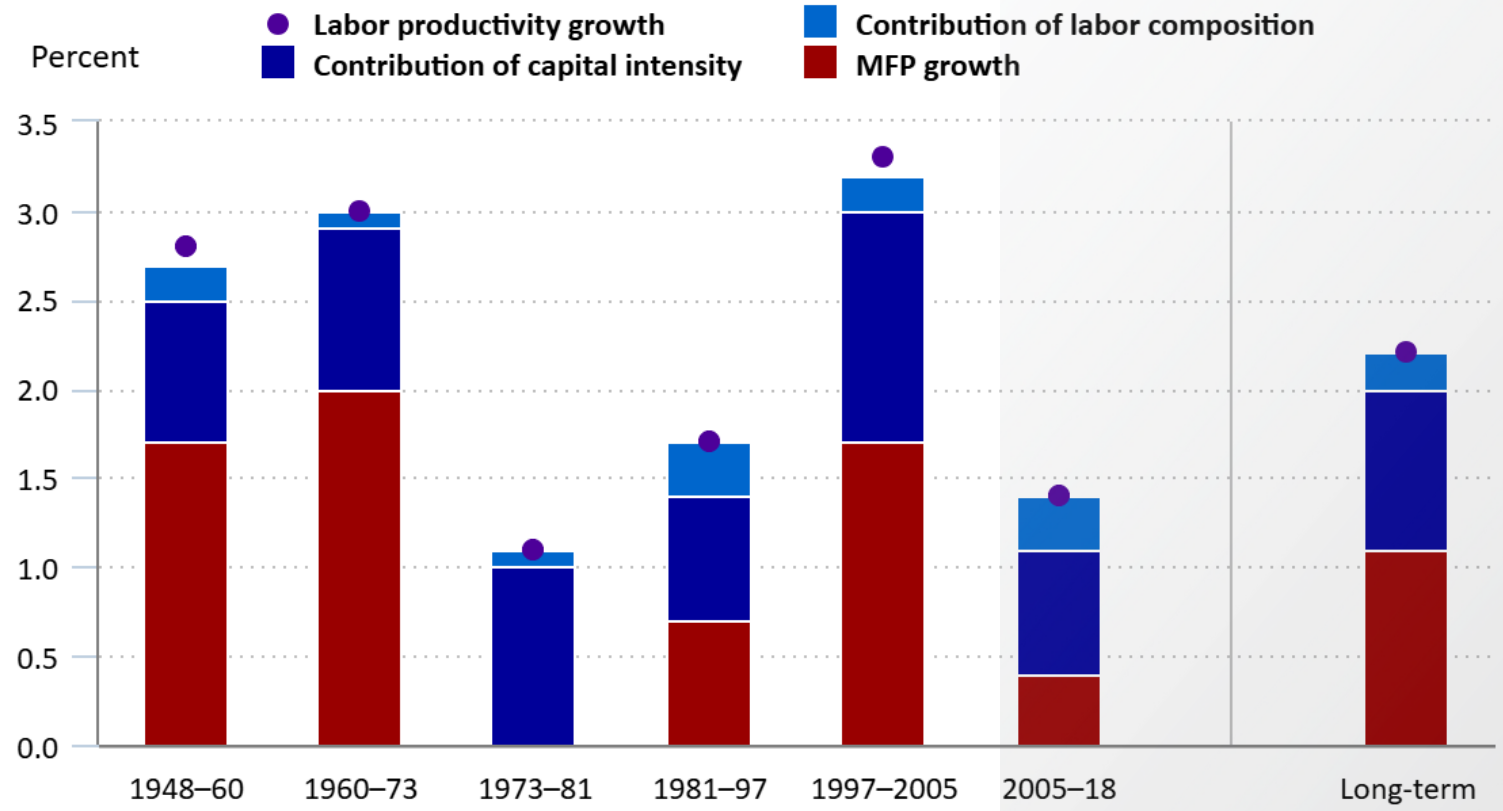
We've seen this movie before – in the 90s.

COMPUTERS

E-COMMERCE

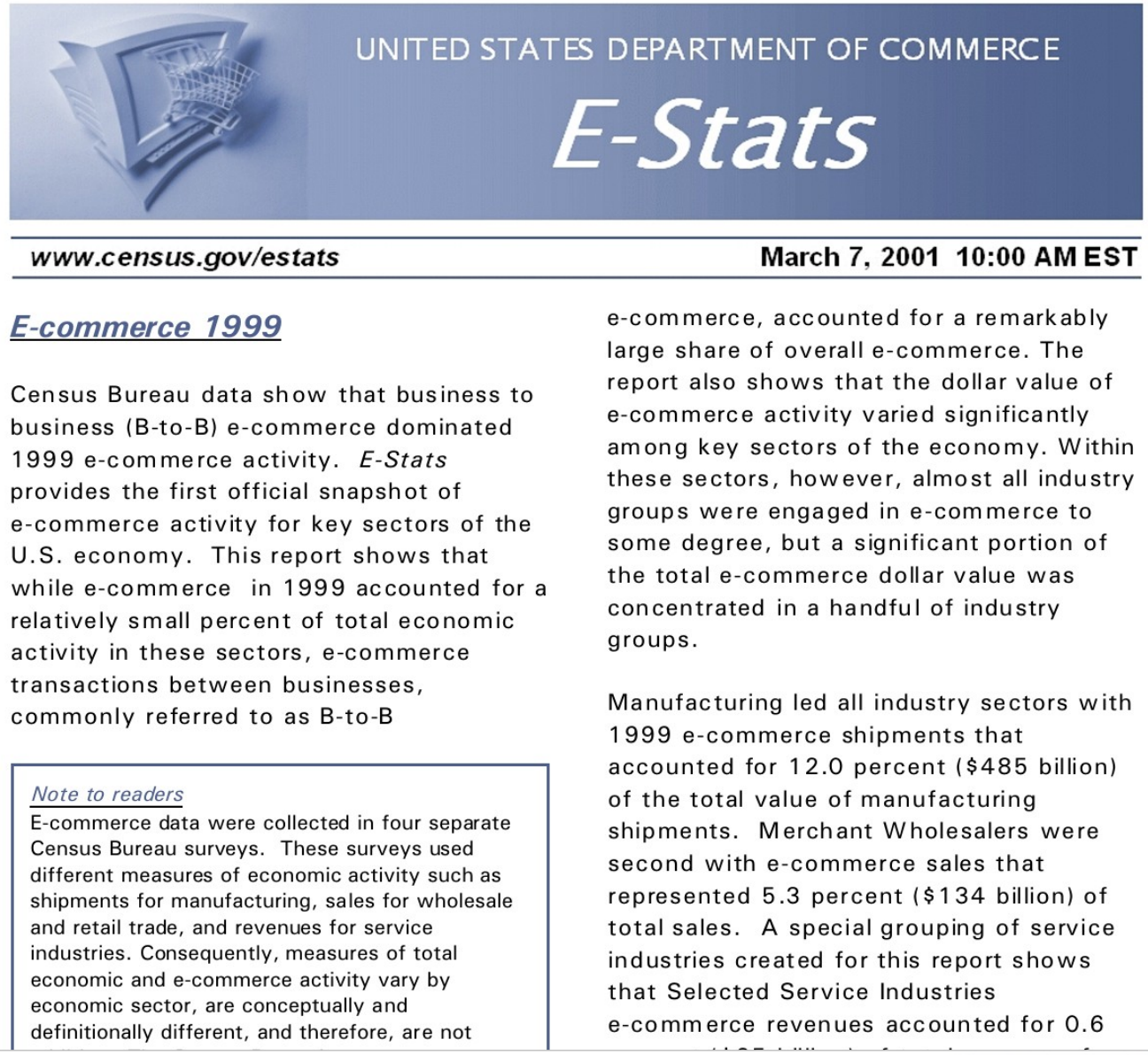
Hindsight: Impact of IT on Productivity

Figure 2. Contributions to labor productivity growth: MFP growth, contribution of capital intensity, contribution of labor composition, average annual growth rates for selected periods, private nonfarm business sector, 1948–2018



Click legend items to change data display. Hover over chart to view data.
MFP = multifactor productivity
Source: U.S. Bureau of Labor Statistics.

But we weren't ready then…



UNITED STATES DEPARTMENT OF COMMERCE

E-Stats

www.census.gov/estats — March 7, 2001 10:00 AM EST

E-commerce 1999

Census Bureau data show that business to business (B-to-B) e-commerce dominated 1999 e-commerce activity. *E-Stats* provides the first official snapshot of e-commerce activity for key sectors of the U.S. economy. This report shows that while e-commerce in 1999 accounted for a relatively small percent of total economic activity in these sectors, e-commerce transactions between businesses, commonly referred to as B-to-B

Note to readers

E-commerce data were collected in four separate Census Bureau surveys. These surveys used different measures of economic activity such as shipments for manufacturing, sales for wholesale and retail trade, and revenues for service industries. Consequently, measures of total economic and e-commerce activity vary by economic sector, are conceptually and definitionally different, and therefore, are not

e-commerce, accounted for a remarkably large share of overall e-commerce. The report also shows that the dollar value of e-commerce activity varied significantly among key sectors of the economy. Within these sectors, however, almost all industry groups were engaged in e-commerce to some degree, but a significant portion of the total e-commerce dollar value was concentrated in a handful of industry groups.

Manufacturing led all industry sectors with 1999 e-commerce shipments that accounted for 12.0 percent ($485 billion) of the total value of manufacturing shipments. Merchant Wholesalers were second with e-commerce sales that represented 5.3 percent ($134 billion) of total sales. A special grouping of service industries created for this report shows that Selected Service Industries e-commerce revenues accounted for 0.6

Important Innovations at Census, 2000-2020

- LBD – Firm Dynamism
- LEHD – Labor Market Dynamics
- Improved Record Linkage
- Electronic Response
- Fully Online Surveys
- RDC Expansion – Increased collaboration

Better Statistical Infrastructure → Better Understanding

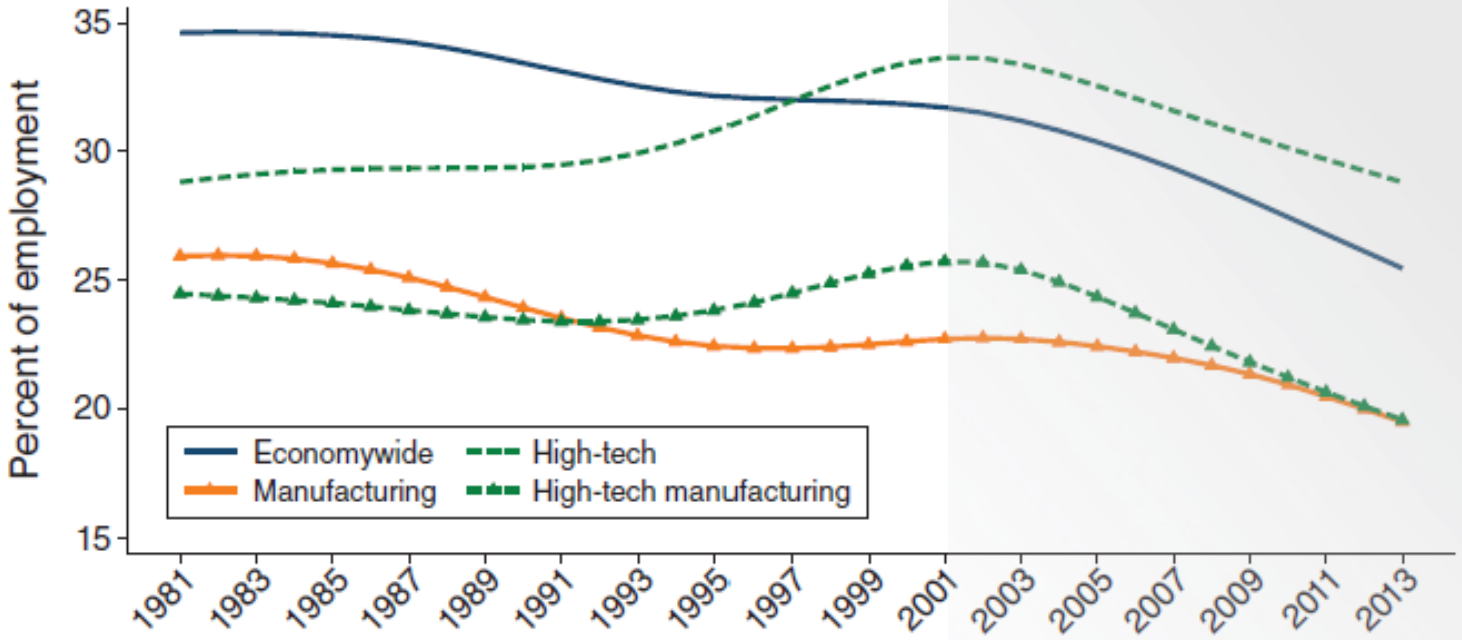


FIGURE 1. JOB REALLOCATION PATTERNS DIFFER BY SECTOR

Notes: HP trends using parameter set to 100. Industries defined on a consistent NAICS basis; high-tech is defined as in Hecker (2005). Data include all firms (new entrants, continuers, and exiters).

Source: LBD

Staying relevant… with a nudge from researchers

Management and Organizational Practices Survey (MOPS)

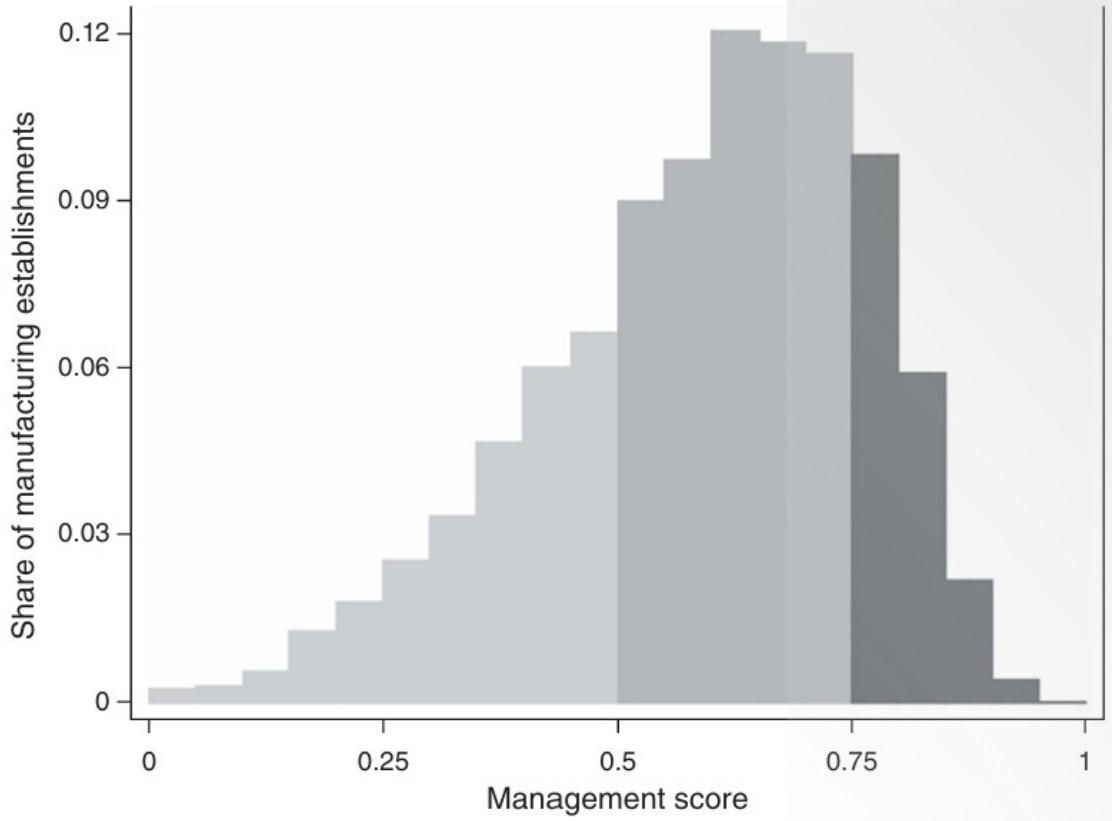


FIGURE 1. THE WIDE SPREAD OF MANAGEMENT SCORES ACROSS ESTABLISHMENTS

Notes: The management score is the unweighted average of the score for each of the 16 questions, where each question is first normalized to be on a 0–1 scale. The sample is all 2010 MOPS observations with at least 11 non-missing responses to management questions and a successful match to ASM, which were also included in ASM tabulations, and have positive value added, positive employment, and positive imputed capital in the ASM. Figure is weighted using ASM weights.

Important Internal Lessons from the MOPS

- Businesses can answer qualitative questions.
- Qualitative and forward-looking responses add important context to standard content.
- Changing roles for both internal (CES) and external researchers for impacting the production function of official statistics.

Those innovations and lessons helped during…

COVID pandemic

- Small Business Pulse Survey
- Household Pulse Survey

✓Real time

✓ Rotating content

✓ Very nimble

Now Back to AI

- We’re in much better shape than in 1999
- Far richer baseline infrastructure (e.g., mature LBD and LEHD)
- AI content on surveys:
  - Annual Business Survey (ABS)
  - MOPS
  - Business Trends and Outlook Survey (BTOS – formerly the Small Business Pulse Survey)

I'll focus mainly on BTOS measures

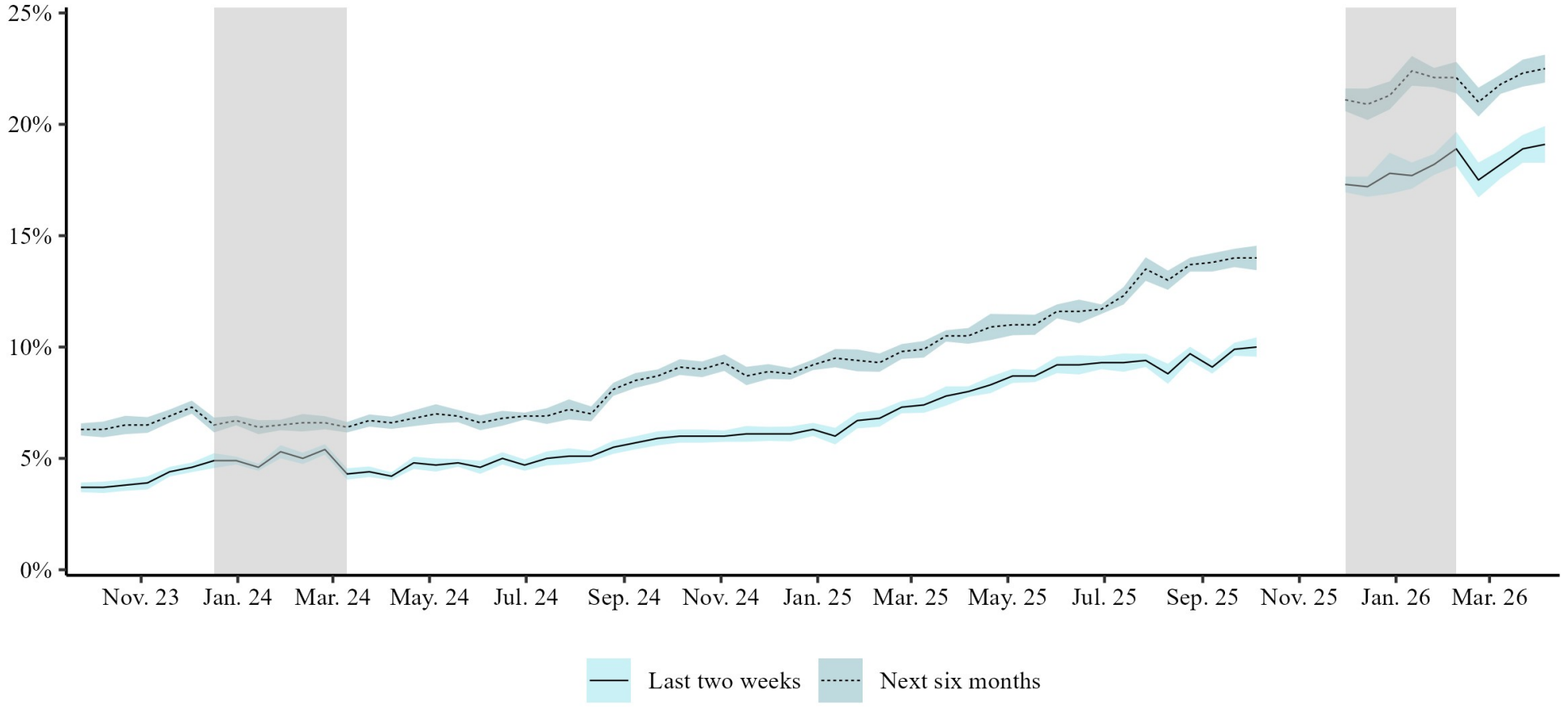
Drawing from …

Bonney et. al. (2024) and Bonney et. al. (2026).

https://www.nber.org/papers/w32319 and CES-WP-26-25.pdf.

BTOS

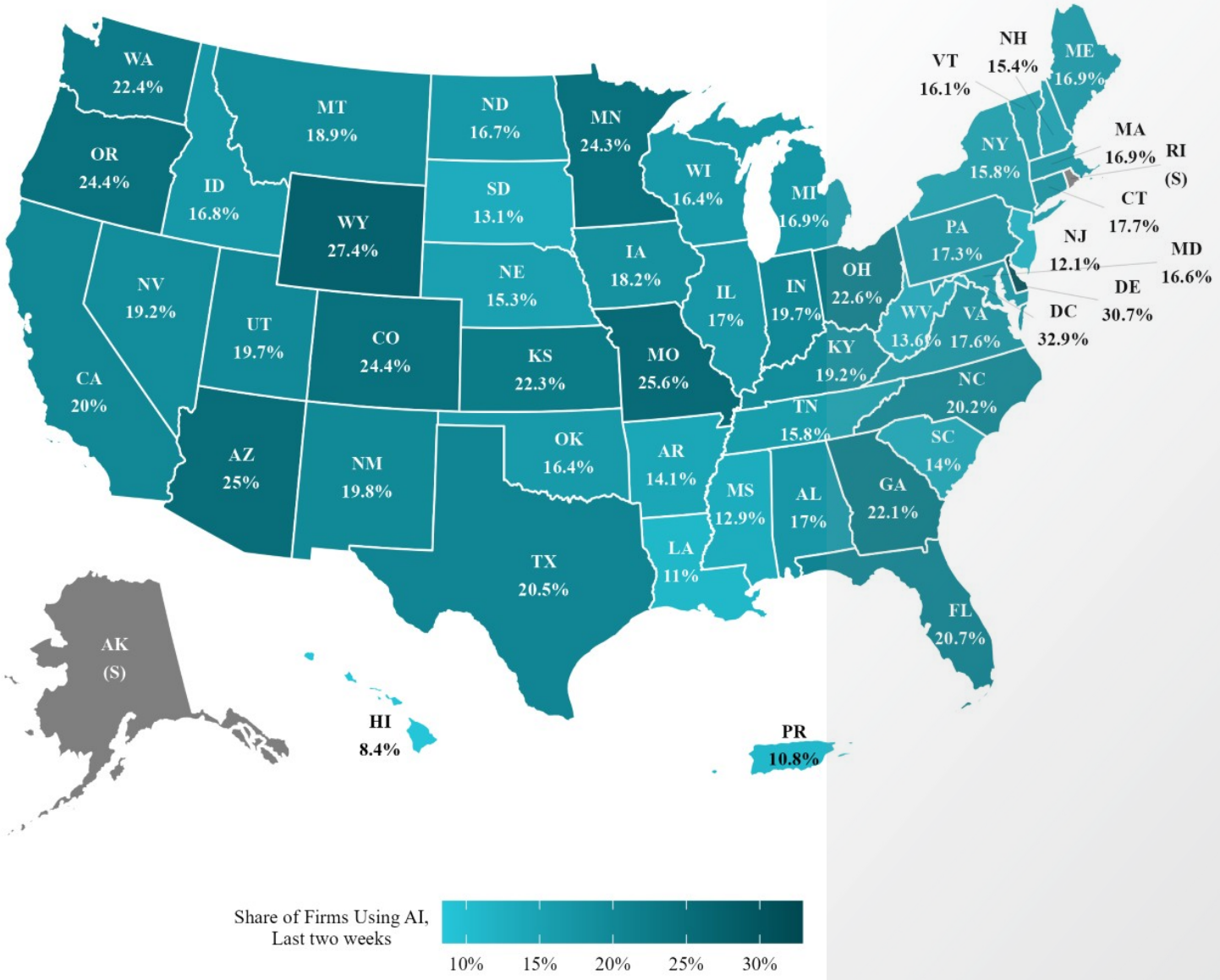
Real-Time Adoption



Note: Shaded areas indicate 95% confidence intervals around BTOS estimates given BTOS response standard errors.
Grey shaded areas represent AI supplement collection periods.

BTOS

Adoption by State



Multi-State Firms: 34.6%
Data collected 3/23/-4/5/26

Survey Measure of U.S. AI Adoption
(As of Nov/Dev 2025)

	Percent of Firms		Percent of Individuals	
Survey	Weighted	Unweighted	Work	Nonwork
BTOS (Census)	28	18		
SBU (Atlanta Fed)	78	69		
SBU GenAI (Atlanta Fed)	54	46		
RTPS (St. Louis Fed)			41	56

Ron’s Office Window Reality Check

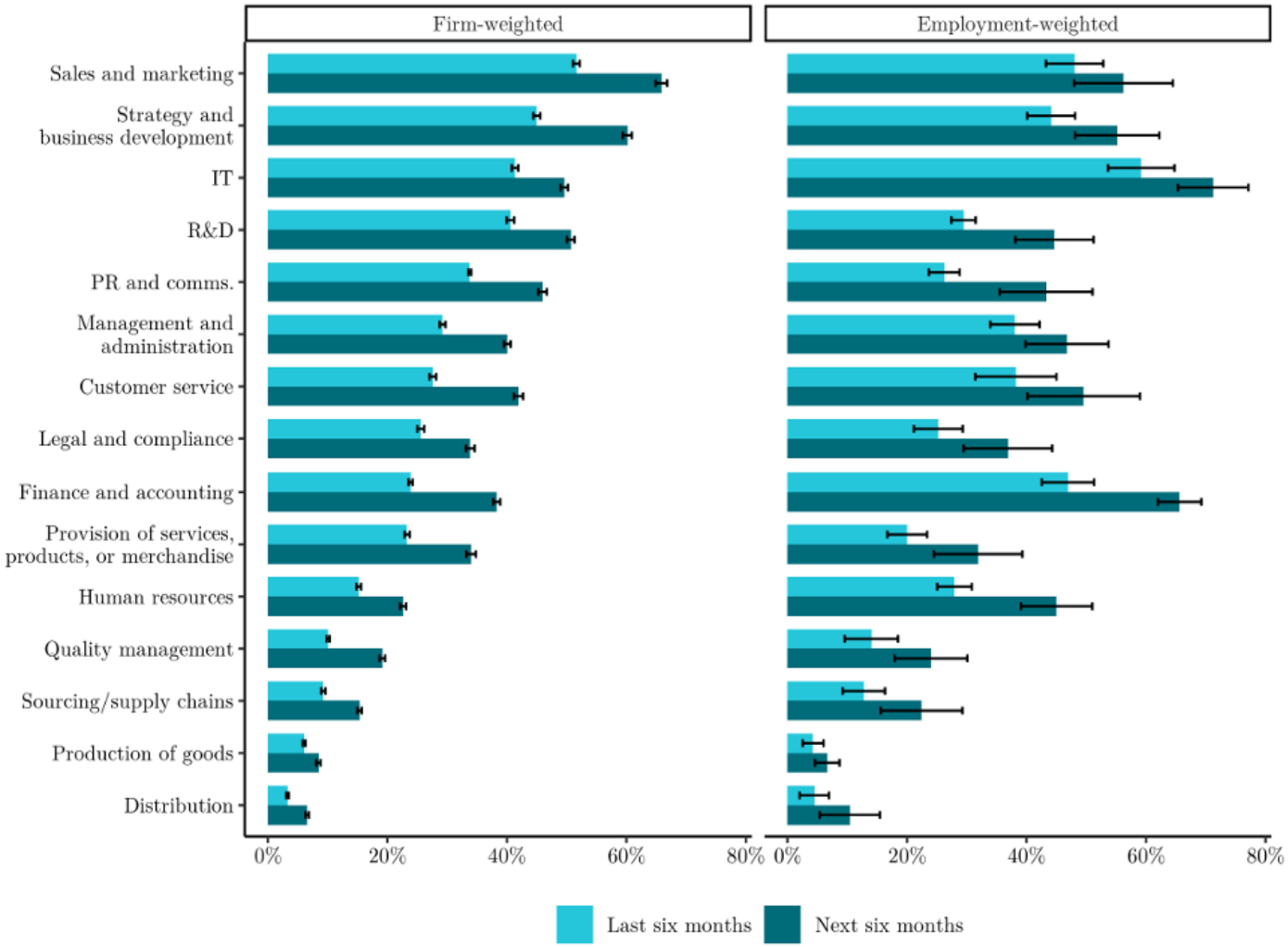
More BTOS finding on AI

- AI adoption concentrated in larger firms and in knowledge-based industries like Information, Professional Services and FIRE.
- About 1 in 4 firms reports using AI to replace worker tasks – but most of those that do replace only a small number of tasks.

BTOS

Business Function

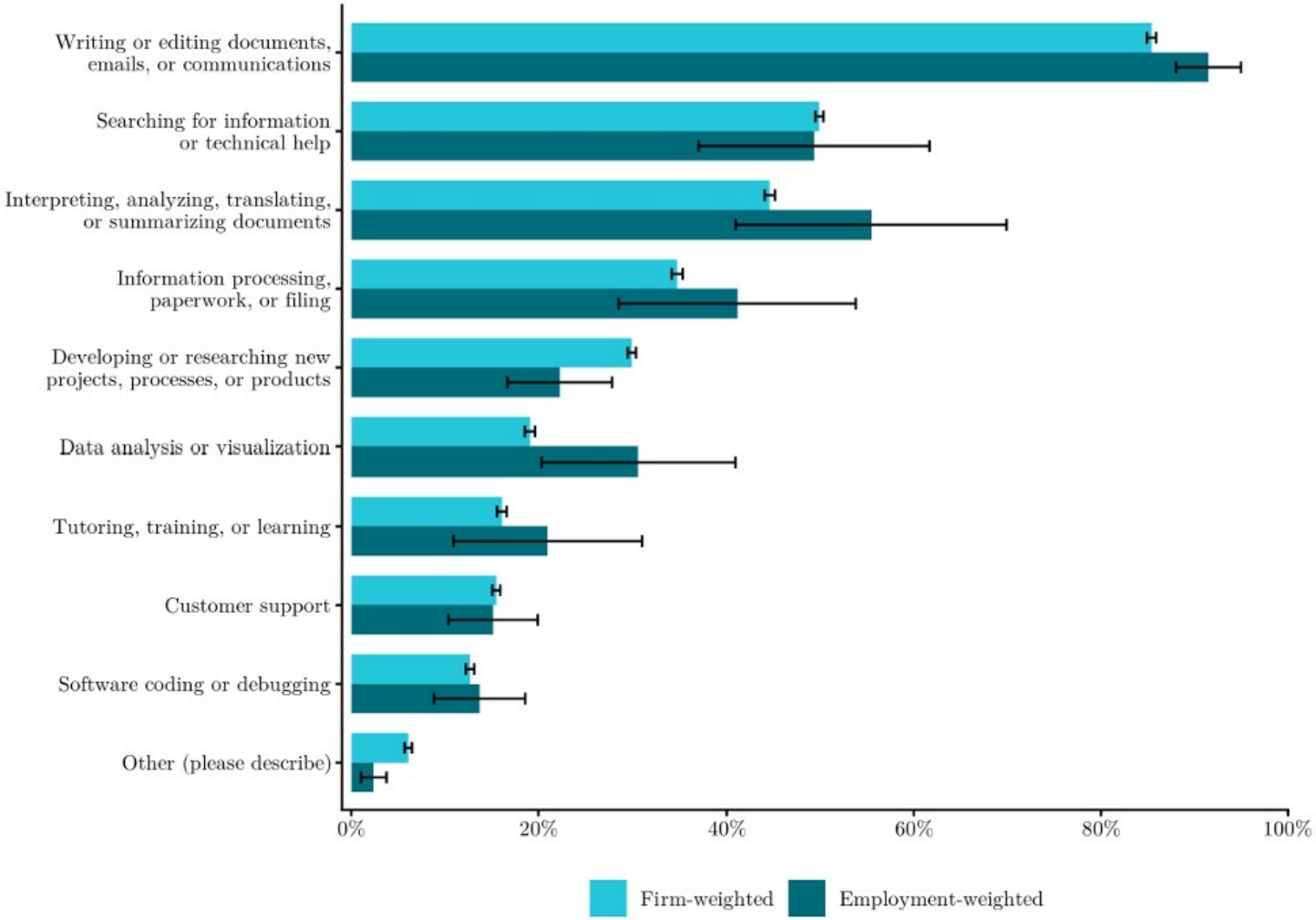
Figure 7: AI use rate by business function – conditional on use in at least one function



Note: Error bars indicate 95% confidence intervals around BTOS estimates given BTOS response standard errors. Response rates are conditional on answering 'Yes' to AI use for at least one business function.

BTOS
Worker Tasks

Figure 9: Worker GenAI use rates by task – conditional on use in at least one task



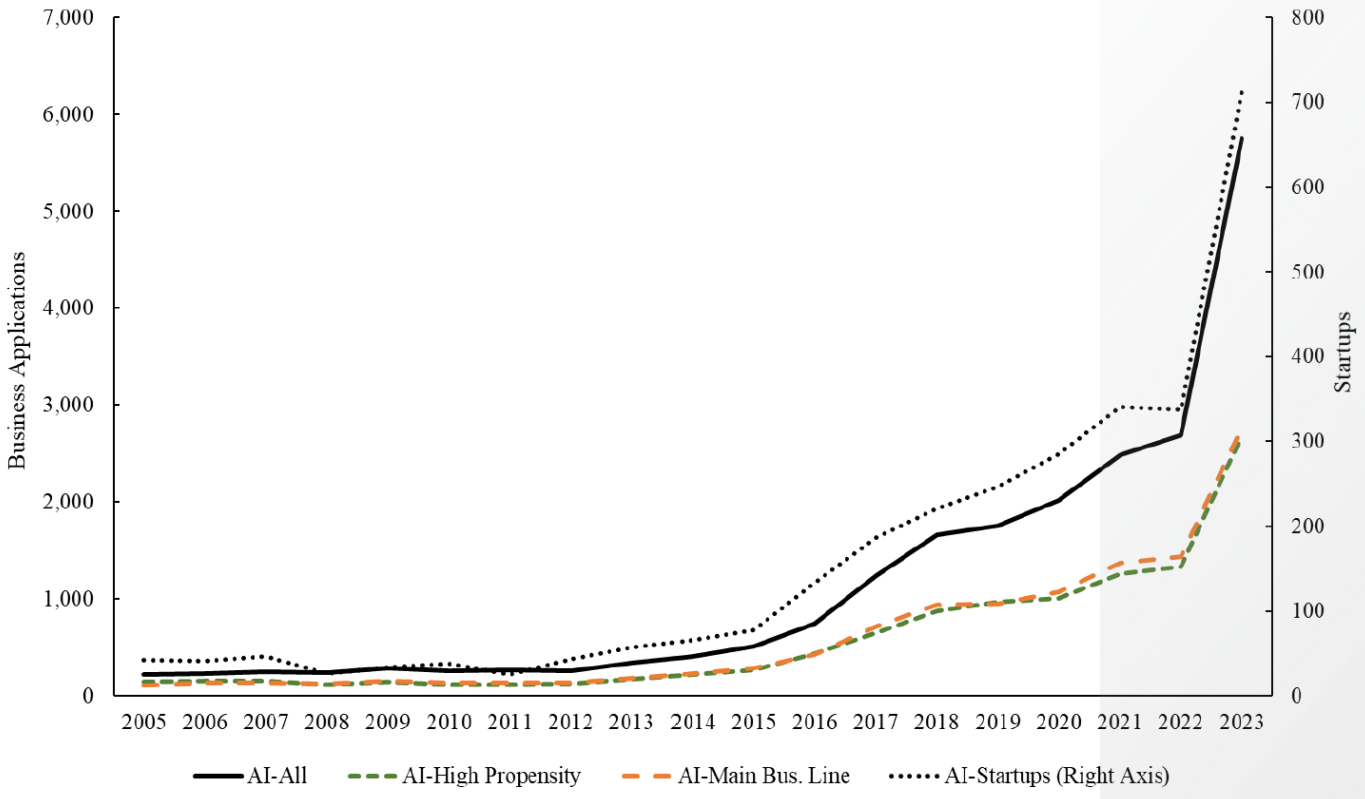
Note: Error bars indicate 95% confidence intervals around BTOS estimates given BTOS response standard errors. Q32 is conditional on responding 'Yes' to Q31: Generative AI use by employees.

What Do We Know About The Impacts Of AI?

- Nearly all AI adopters report no change in employment (BTOS 2024).
- AI adopters more likely to report expected employment growth in the future relative to non-adopters.
- AI adopters generally exhibit stronger business performance along several dimensions.
- Difficult to attribute causal impact of AI adoption from BTOS and other surveys.

Business Formation Statistics (BFS)

Figure 1: AI business applications and formations per year



Notes: Uses all AI business applications for the period 2005-2023m10, AI business formations (also referred to as transitions or startups) within 8 quarters of application for the period 2005-2019, and predicted AI business formations for the period 2020-2023m10. Plotted are all AI business applications (AI-All), AI business applications based on main business line (AI-Main Bus. Line), AI business applications based on business/trade name (AI-Bus./Trade Name), and AI employer startups originating from applications within 8 quarters of application (AI-Startups) – uses predicted startups after 2019.

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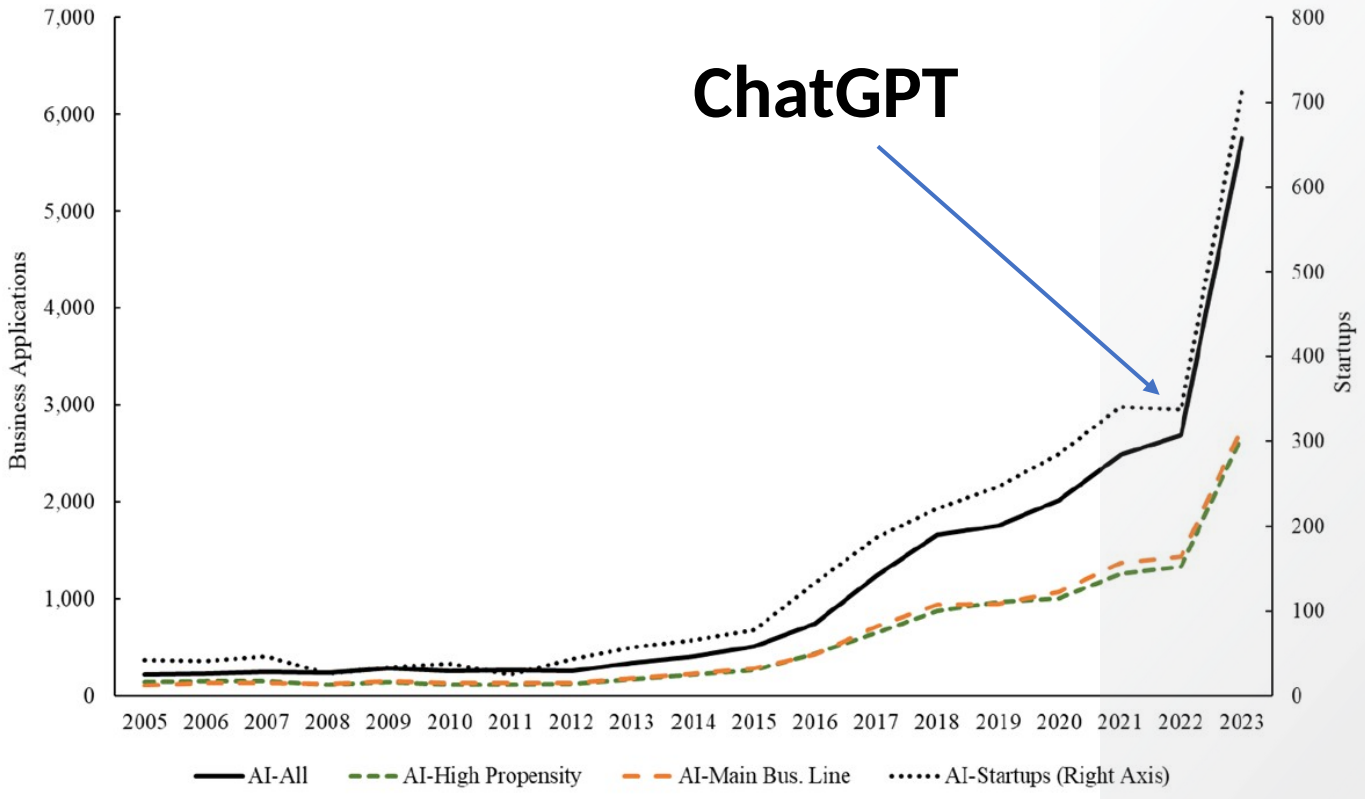

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Where are we?

- **AI** adoption still low – but growing.
- Respondents reporting changes post adoption mention task and or capital/software replacement. Not worker replacement … so far.

Evidence of AI's impact on productivity is sparse and niche

- This isn't surprising, given limited adoption.
- Some evidence from very narrow activities (e.g., software development).
- McElheran, Yang, Kroff and Brynolfsson (2025) find evidence of a **J-curve** pattern of AI adoption and productivity in U.S. manufacturing using the MOPS/ASM.

Looking forward

- Will **AI** spur increased dynamism and productivity growth, a la the late 1990s and early 2000s?
- What about the impact on the labor market?

Who knows?

But we're in a better position to measure these in closer to real time than ever before.

Thank you!

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U.S. Census Bureau