AI and the Labor Force

A Virtual Seminar for Members of Federal Reserve Community Advisory Groups

September 29, 2026

Research and the Community

Today’s speakers



Natalie K. Holmes

Senior Researcher, Community Engagement and Analysis

Federal Reserve Bank of San Francisco



Sylvain Leduc

Executive Vice President and Director of Research, Economic Research

Federal Reserve Bank of San Francisco



Adam Scavette

Economic Advisor, Community Development and Regional Outreach

Federal Reserve Bank of Philadelphia



Paul E. Soto

Principal Economist, Industrial Output Section, Research and Statistics

Board of Governors of the Federal Reserve

Housekeeping items

Disclaimer

- Views expressed during this session are those of the speakers and are intended for informational purposes only. They do not necessarily represent the views of Fed Communities, any of the Federal Reserve Banks, or the Federal Reserve System.

- Presenters' slides, and a transcript of today's event will be published on fedcommunities.org within 2 weeks of today.

FEDERAL RESERVE BANK
OF SAN FRANCISCO

AI and the Labor Force

Federal Reserve Bank of Cleveland

September 29, 2026

Sylvain Leduc

Executive Vice President & Director of Research

Views expressed are those of the presenter and not necessarily those of the Federal Reserve Bank of San Francisco or the Federal Reserve System.

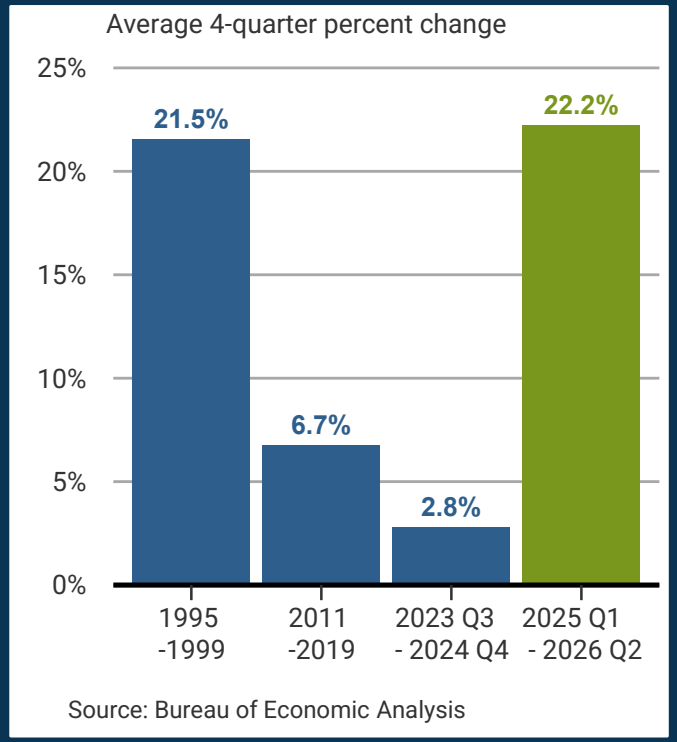
The Fed has two mandates

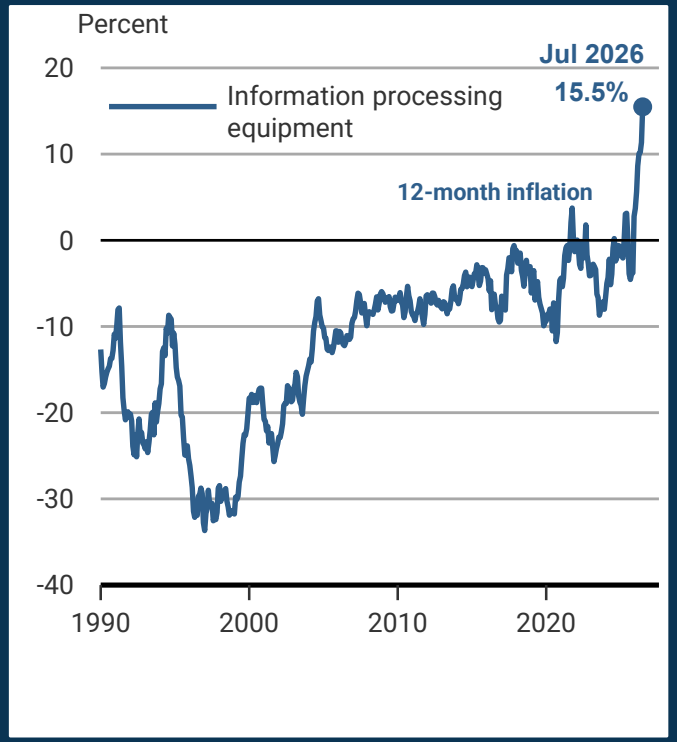
Maximum Employment

Price Stability

Strong AI-induced equipment investment

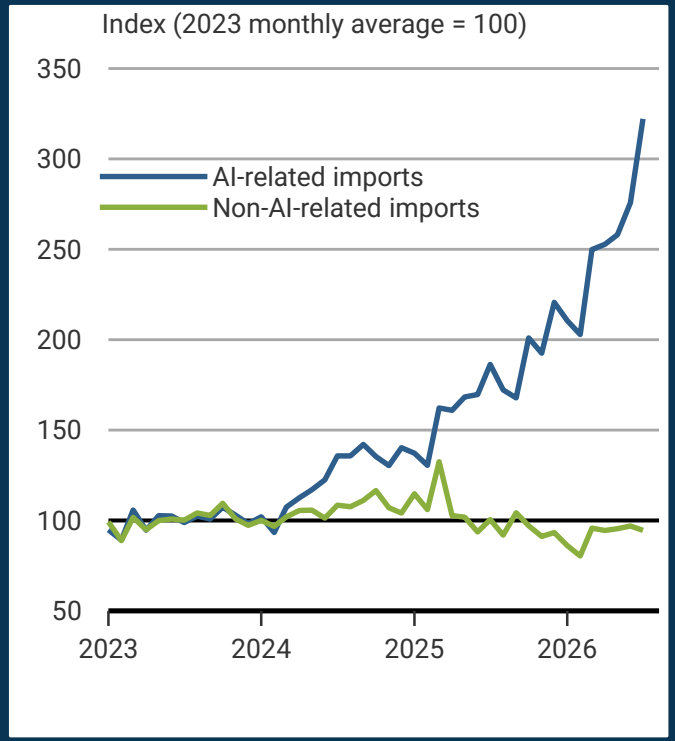
Investment growth vs. price index inflation: information processing equipment

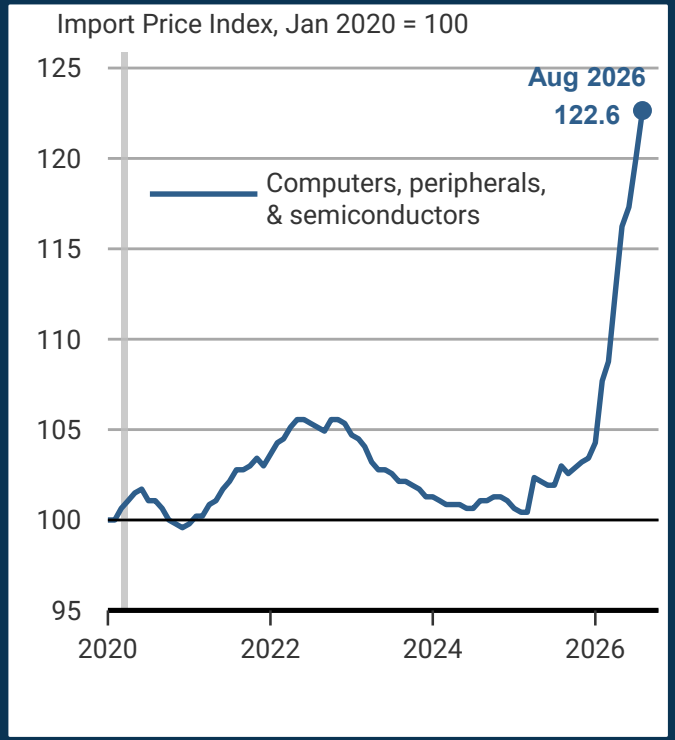




AI-related imports rising rapidly

AI-related imports vs import price index inflation

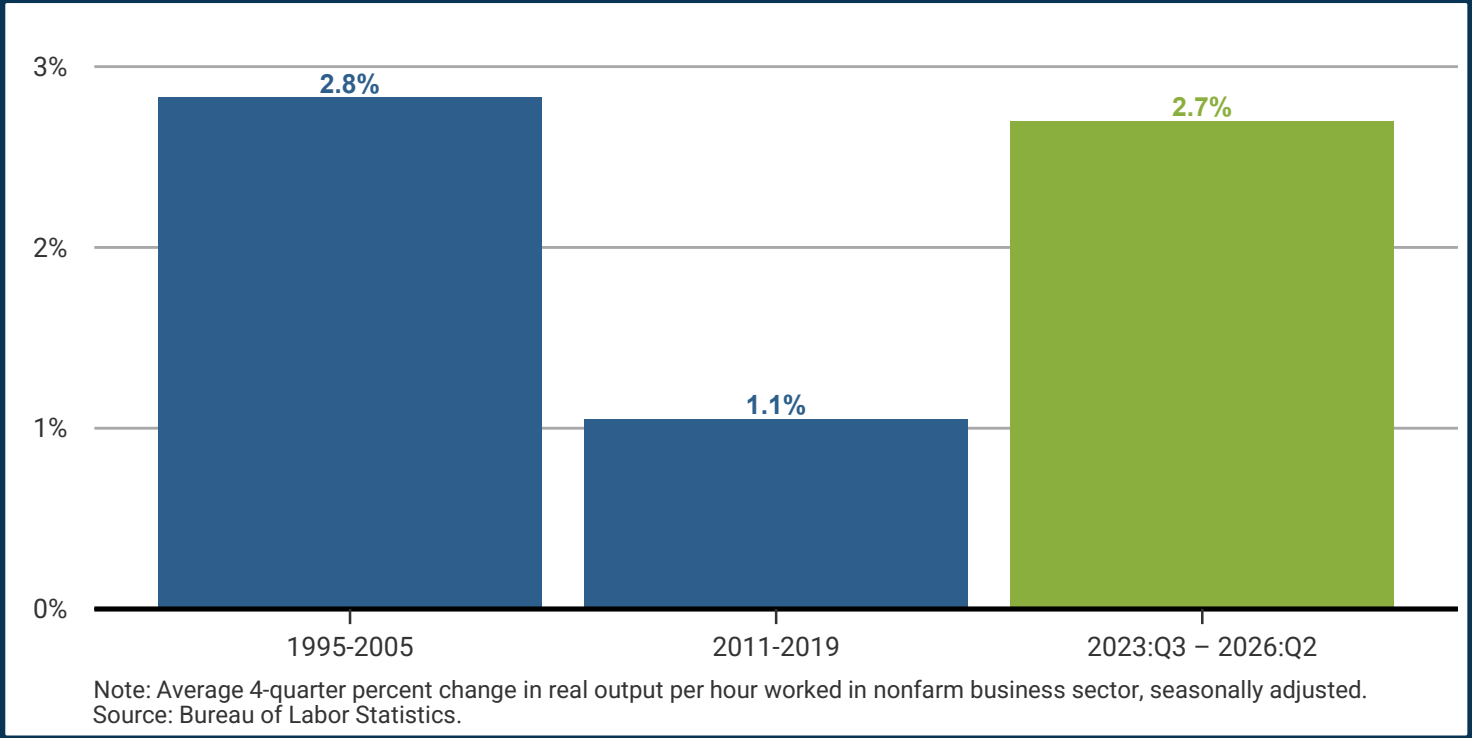




Note: Import Price Index not seasonally adjusted.
Source: Bureau of Labor Statistics; Federal Reserve Bank of Minneapolis

Investment boosting productivity growth

Labor productivity growth



Note: Average 4-quarter percent change in real output per hour worked in nonfarm business sector, seasonally adjusted.
Source: Bureau of Labor Statistics.

AI has demand and supply effects

Demand effects push inflation up

- higher spending via wealth effects from higher stock prices
- higher investment demand
- pressures on inputs costs for all industries (e.g., memory chips)

Supply effects push inflation down

- higher productivity lowers costs and prices

Demand effects may outpace supply effects early on

Policymakers must net out these effects over time



Survey Insights: AI Adoption and Its Impact on Third District Firms

Adam Scavette, PhD

Community Development Economic Advisor

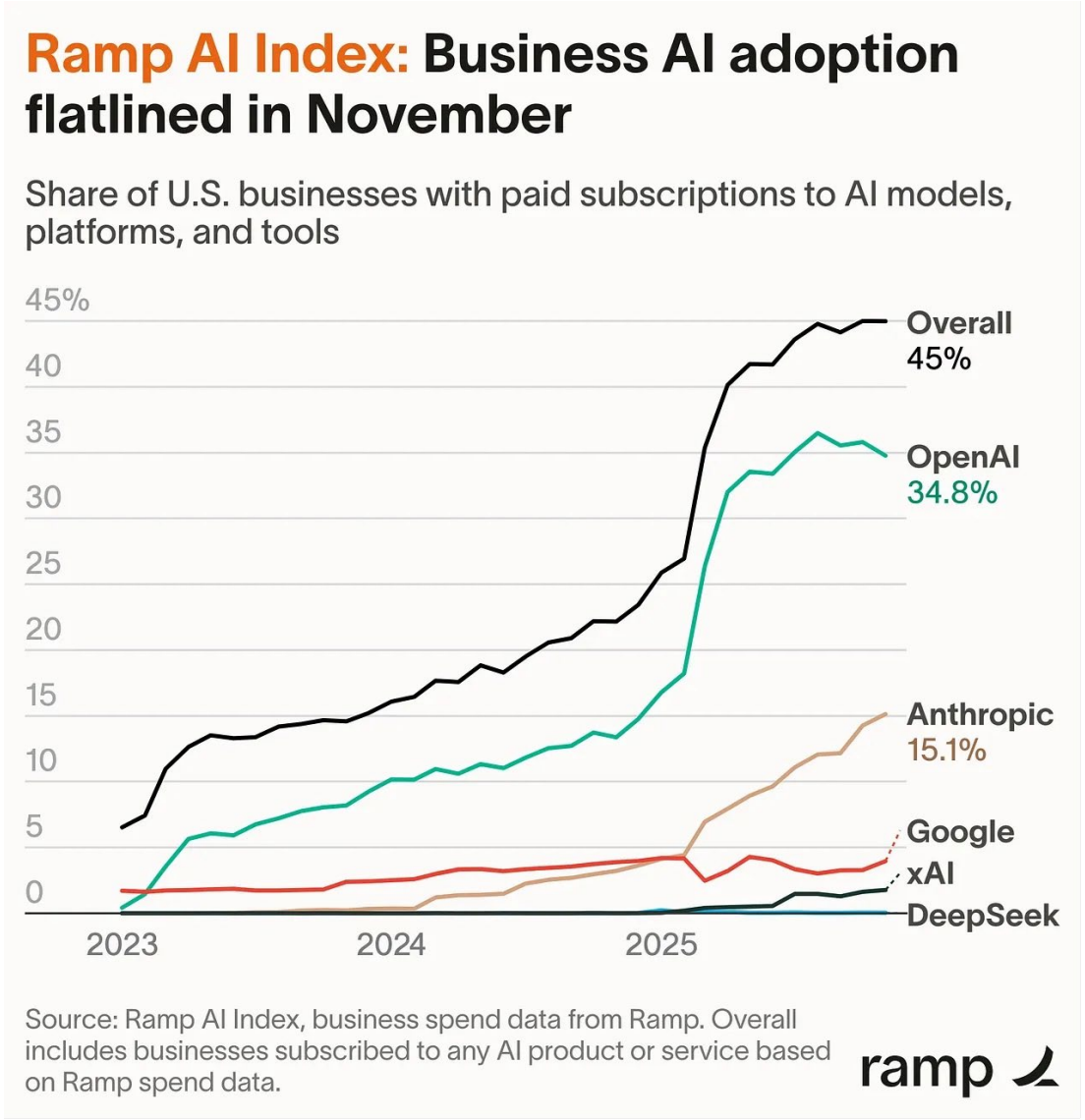
FEDERAL RESERVE BANK
PHILADELPHIA

The views expressed today are our own and not necessarily those of the Federal Reserve Bank of Philadelphia or the Federal Reserve System.

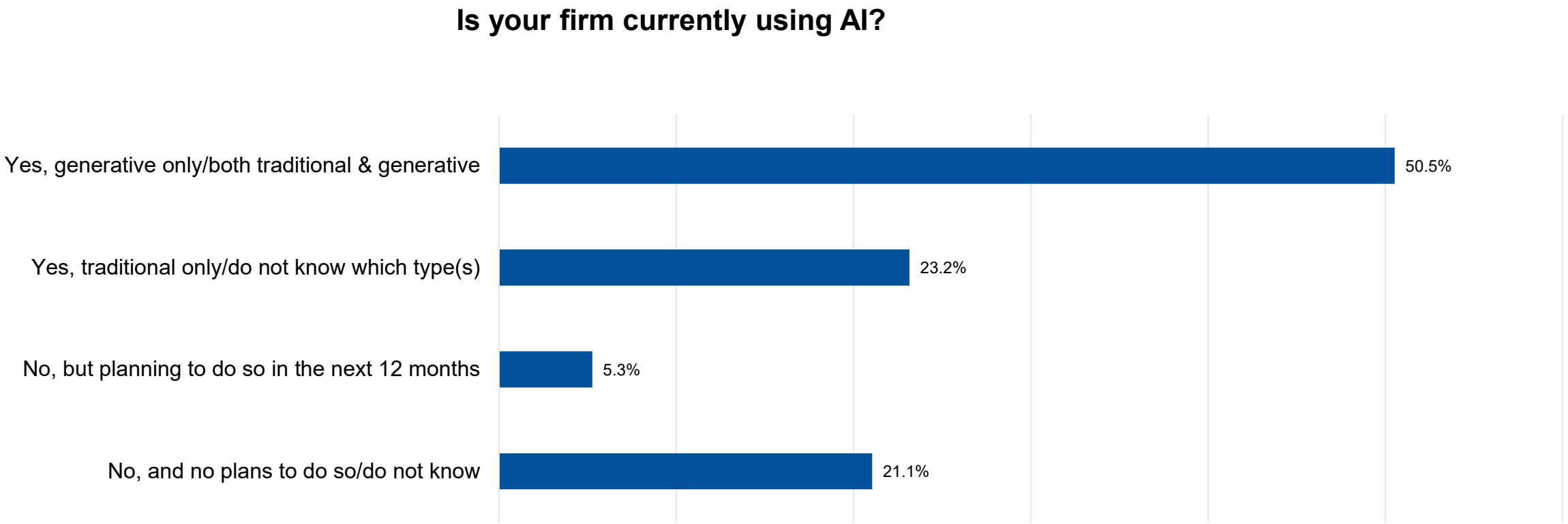
The views expressed today are our own and not necessarily those of the Federal Reserve Bank of Philadelphia or the Federal Reserve System.

What is the rate of Generative AI Adoption among Firms?

Just under half of U.S. businesses have paid subscriptions to AI applications



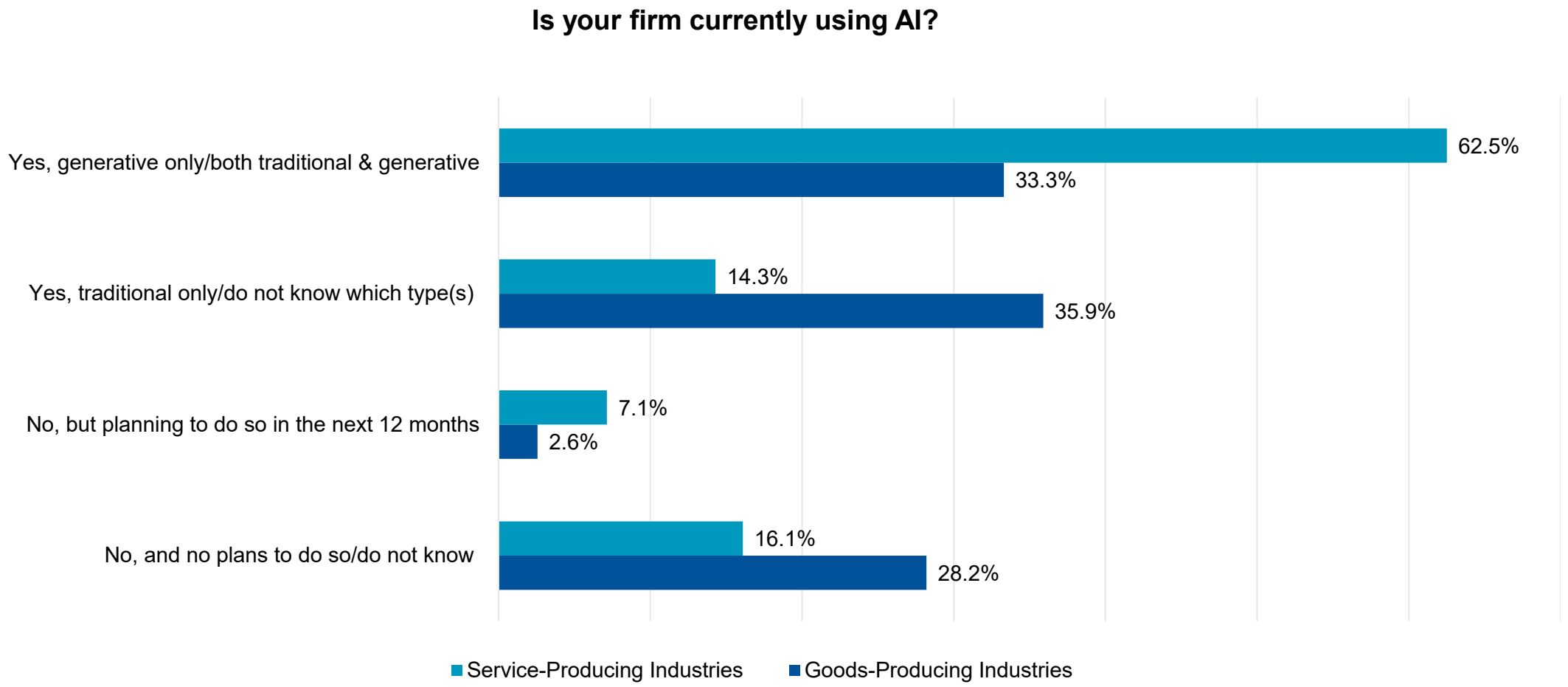
Half of Third District Firms Are Currently Using Generative AI



Source: Dunne & Scavette (2026)

Note: The sample consists of 95 firms who responded to the survey question, 'Is your firm currently using AI?' The survey period ran from October 27-31, 2025.

Generative AI Use More Common at Service Firms

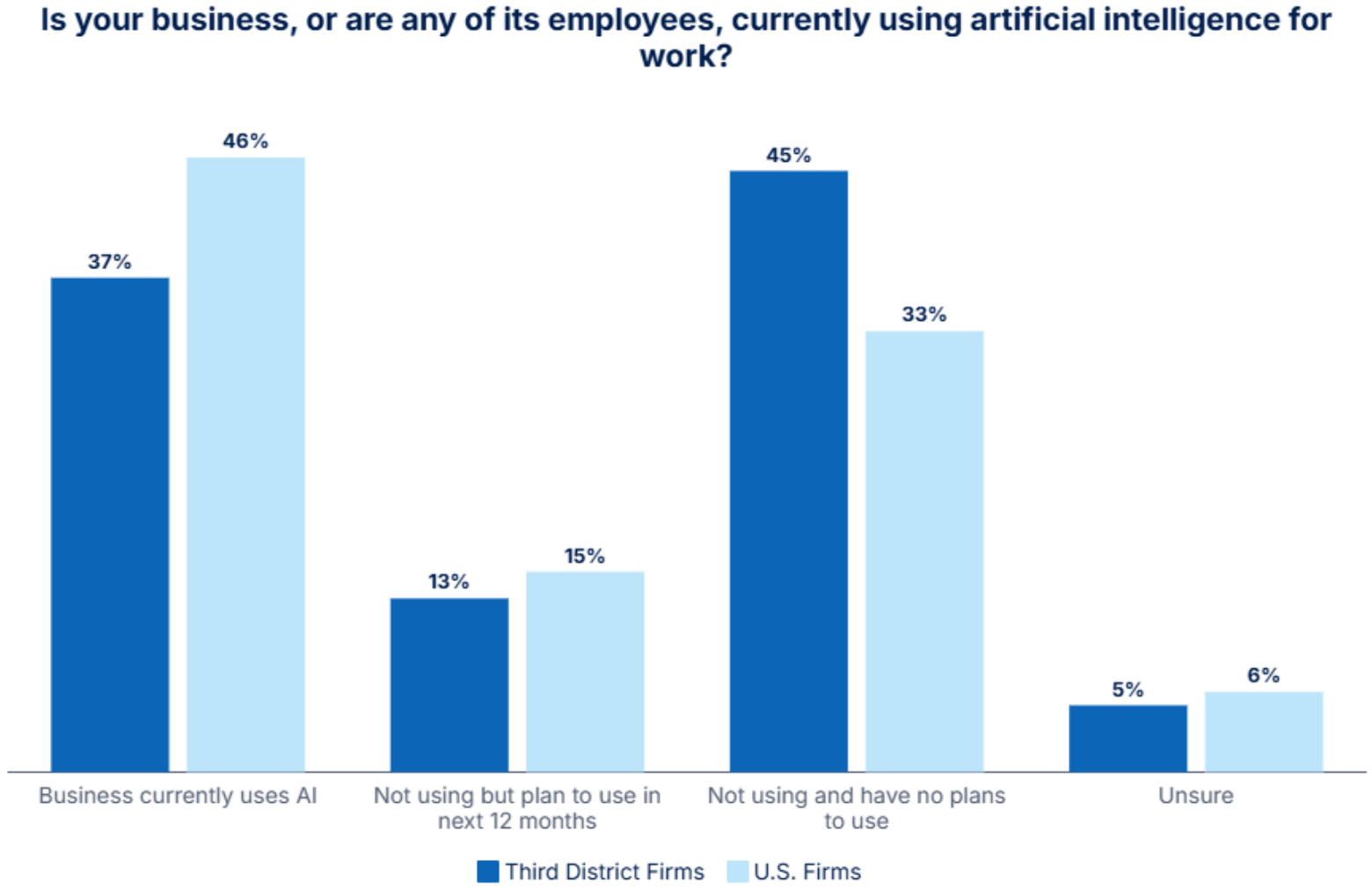


Source: Dunne & Scavette (2026)

Note: The sample consists of 95 firms who responded to the survey question, 'Is your firm currently using AI?' The survey period ran from October 27-31, 2025.

How Are Small Firms Utilizing AI?

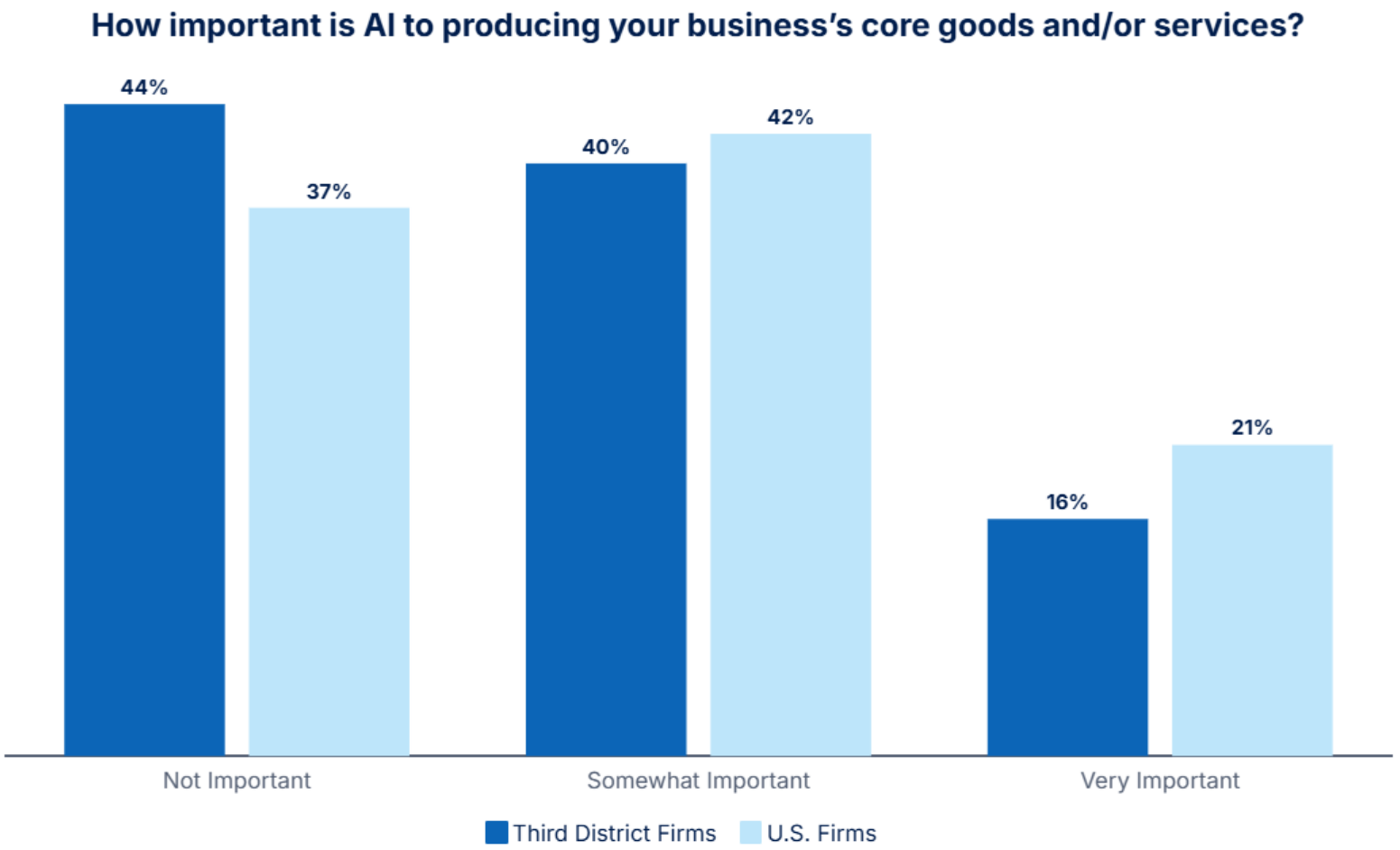
Third District Small Businesses Have Lower AI Adoption Rates Compared with the Nation



Source: 2025 Small Business Credit Survey

Note: The Third District sample consists of 679 firms and the U.S sample consists of 5,248 firms that responded to the above question during the survey collection period, September 3-November 14, 2025. The same figure also appears in Barca (2026).

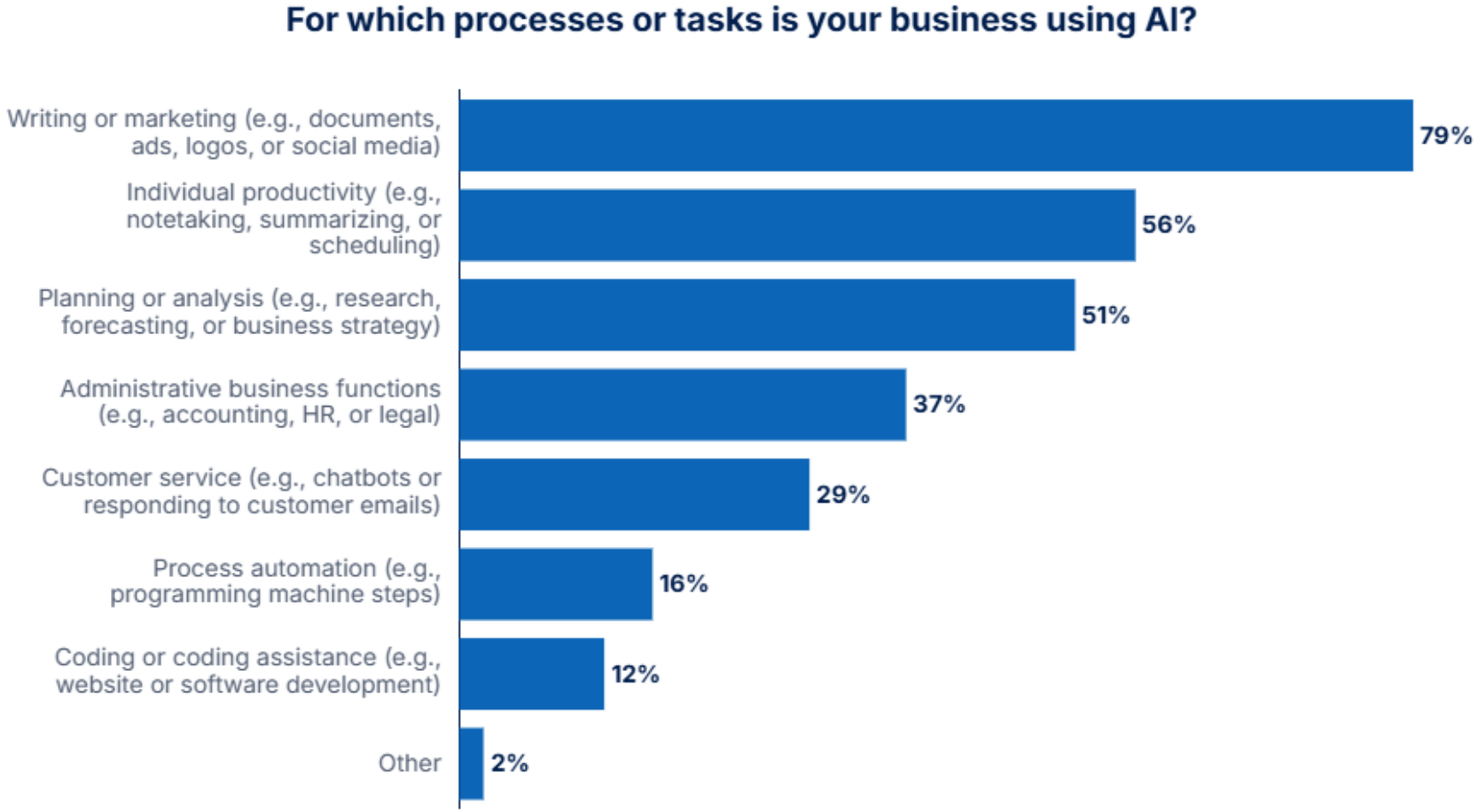
Third District firms tended to see the technology as less important than nation as a whole



Source: 2025 Small Business Credit Survey

Note: The sample consists of 206 Third District firms and 2,127 U.S. firms that responded to the above question during the survey collection period, September 3–November 14, 2025. This question was restricted to firms that answered "Yes" to "Is your business, or are any of its employees, currently using Artificial Intelligence for work?"

Most Firms Use AI for Writing, Marketing and Productivity



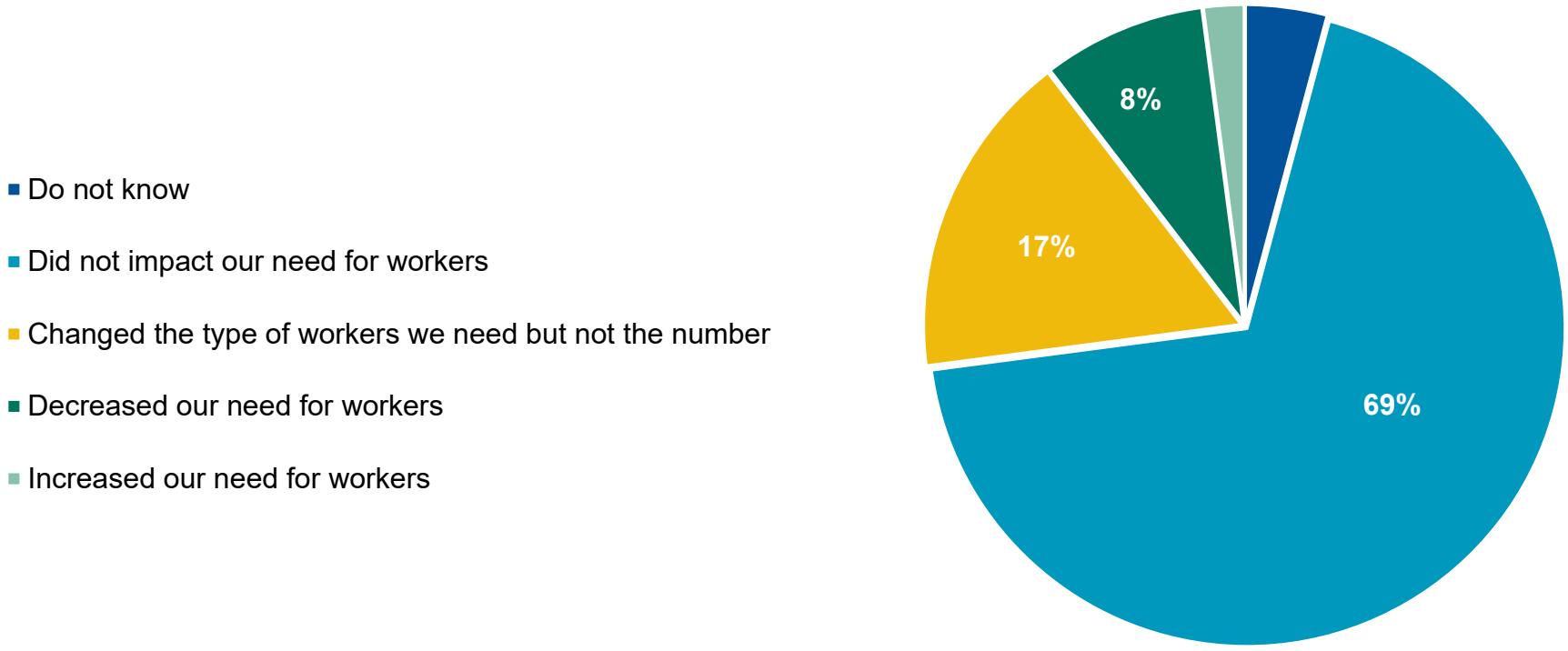
Source: 2025 Small Business Credit Survey

Note: The sample consists of 215 Third District firms using AI that responded to the above question during the survey collection period, September 3–November 14, 2025. This question was restricted to firms that answered "Yes" to "Is your business, or are any of its employees, currently using Artificial Intelligence for work?" Respondents could select multiple answers, which is why percentages add up to more than 100 percent.

How is Generative AI Use Impacting Firm Outcomes?

Most (69%) Firms Using Generative AI Report No Impact on Employment

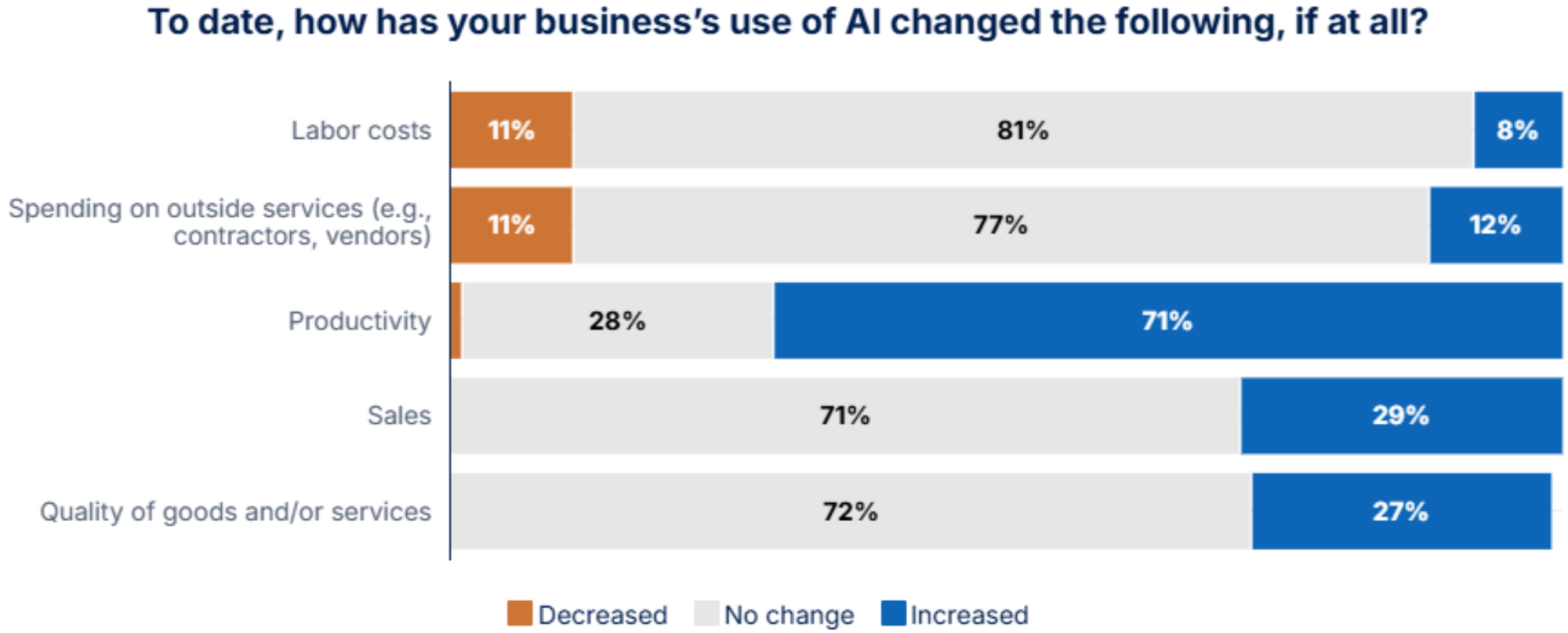
How has the use of generative AI affected employment at your firm?



Source: Dunne & Scavette (2026)

Note: The sample consists of the 48 firms who responded 'Yes' to the survey question, 'Is your firm currently using AI?' The survey period ran from October 27-31, 2025.

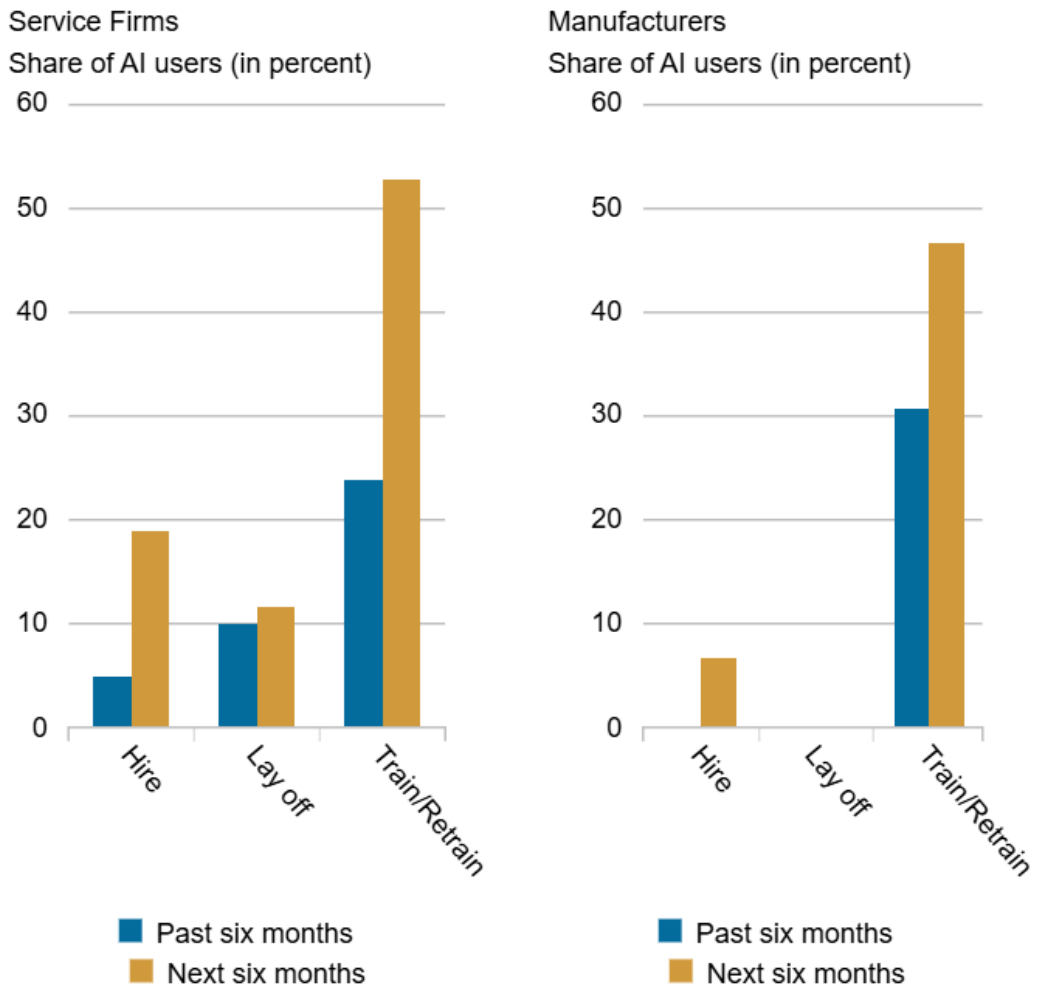
Majority of Small Firms Reported Limited Impact on Labor Costs



Source: 2025 Small Business Credit Survey

Note: The samples consist of 188 firms for labor costs, 191 firms for spending on outside services, 198 firms for productivity, 188 firms for quality of goods and/or services, and 185 firms for sales that responded to the above question during the survey collection period, September 3–November 14, 2025. This question was restricted to firms that answered "Yes" to "Is your business, or are any of its employees, currently using Artificial Intelligence for work?" Shares may not add up to 100 because of rounding.

Businesses Plan to Retrain Workers to Adapt to AI



Source: Abel et al. (2024), Federal Reserve Bank of New York, Regional Business Surveys, August 2024.

Note: Respondents were next asked whether they had hired, laid off, or trained/retrained workers due to the use of AI in the past six months, and about their future plans for AI-related staffing in the next six months..

Takeaways

Roughly half of U.S. and Third District firms are utilizing Generative AI

Small Third District Firms report using AI to improve productivity at tasks, not replacing operations or jobs

Most firms using Generative AI report no impact on employment

Thank you!

Contact me at adam.scavette@phil.frb.org

FEDERAL RESERVE BANK
PHILADELPHIA

Generative AI: What Type of Technology?

with Martin N. Baily, David M. Byrne, and Aidan T. Kane

Presented by: Paul E. Soto

September 29, 2026

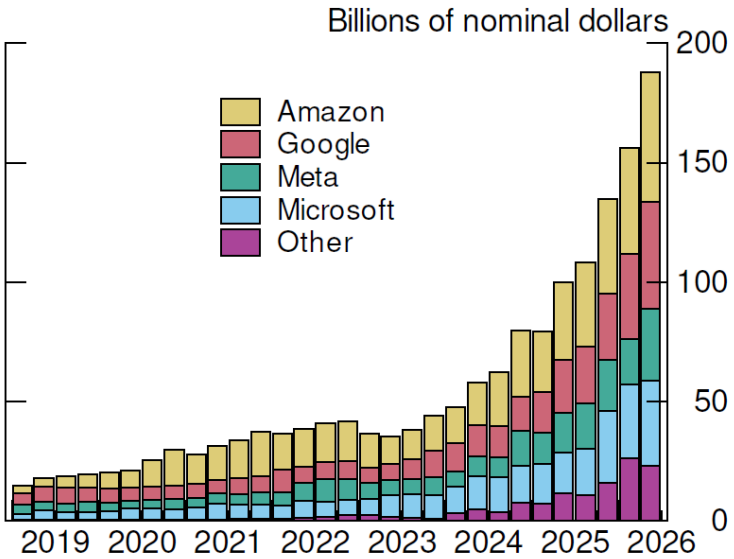
AI and the Labor Force

The views expressed here are not represented to be the views of the Federal Reserve Board of Governors or the Brookings Institution.

Motivation: The AI Buildout

Investment and expectations have moved faster than realized gains

Hyperscaler capex

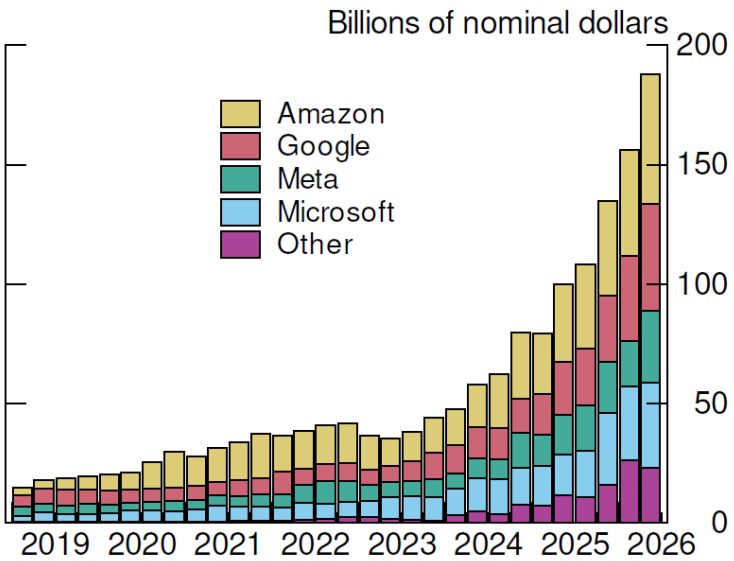


Source: SEC Filings

Motivation: The AI Buildout

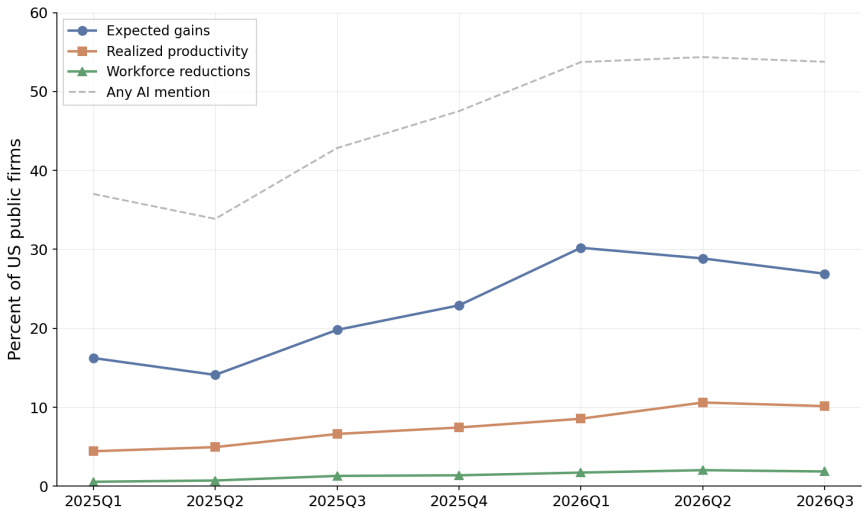
Investment and expectations have moved faster than realized gains

Hyperscaler capex



Source: SEC Filings

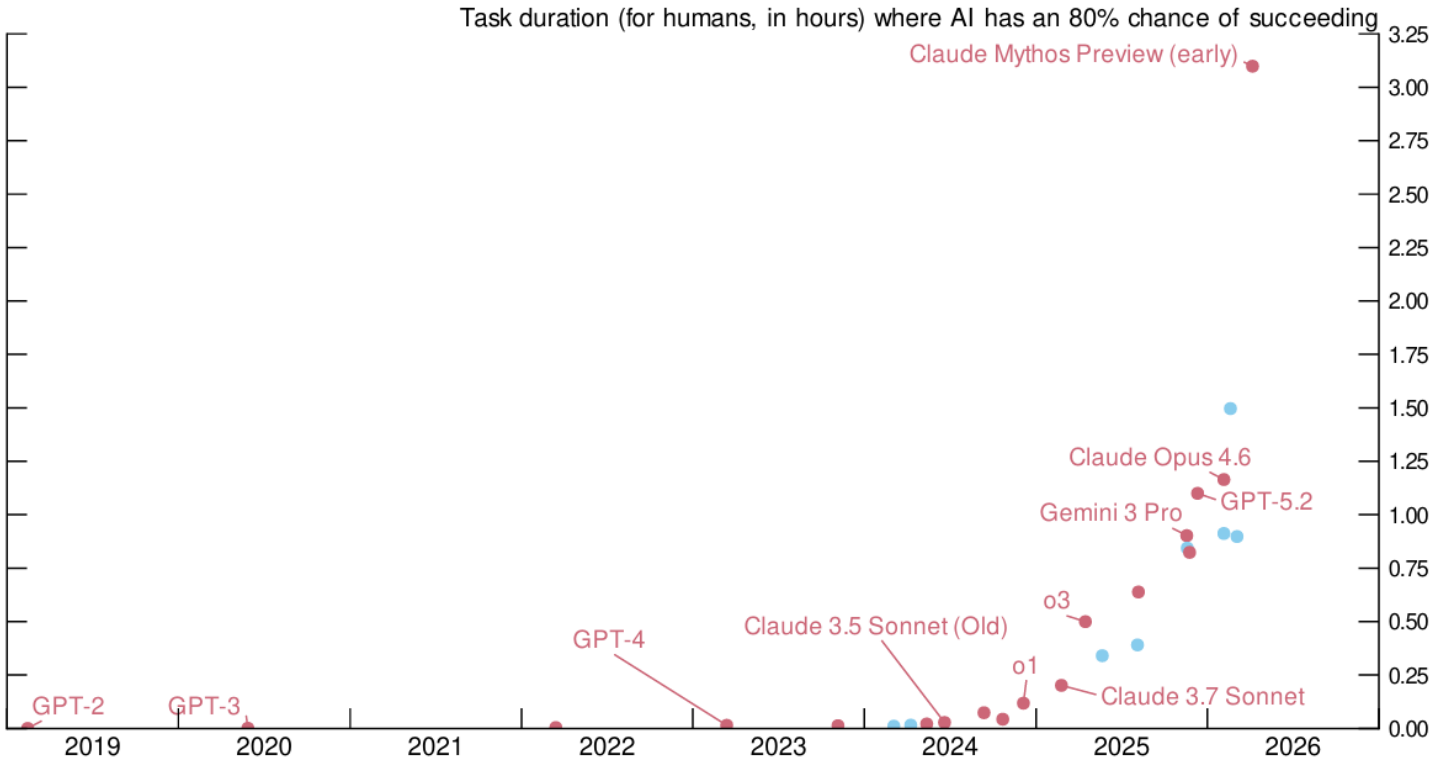
Expected Gains Outrun Realized Gains



Preliminary; my own calculations from conference calls

Our Approach: Focus on Profitability, not Feasibility

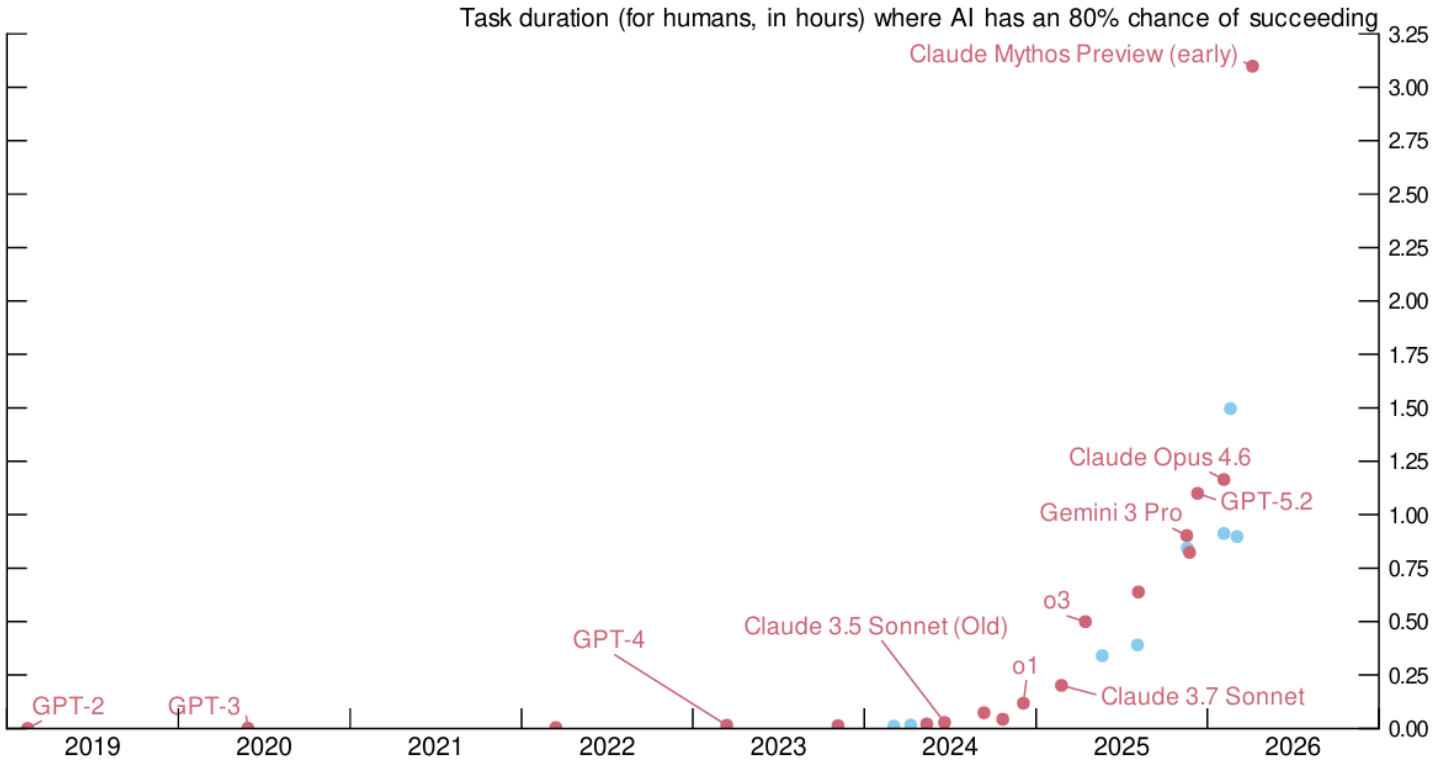
Many things are technically feasible



Source: METR

Our Approach: Focus on Profitability, not Feasibility

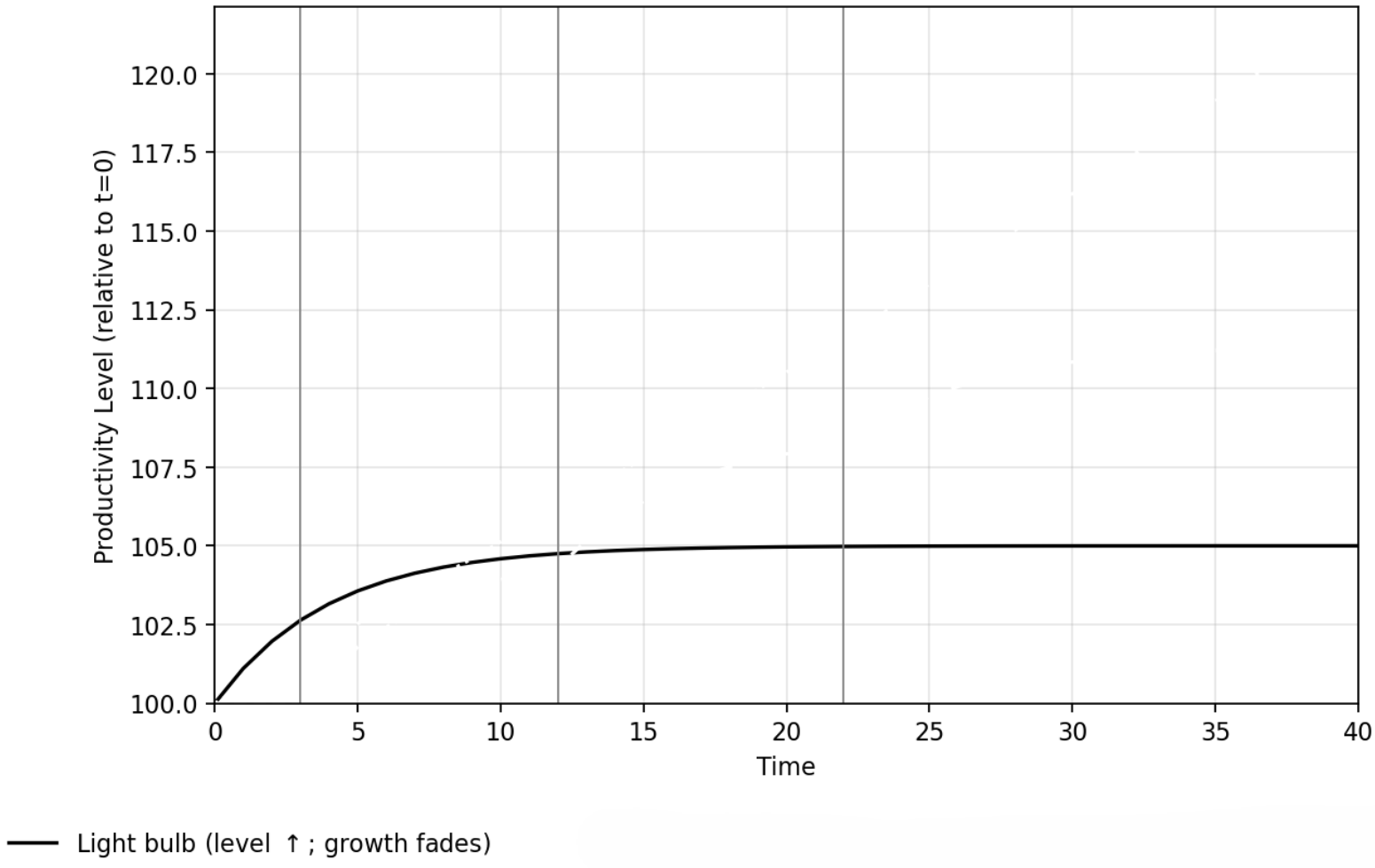
Many things are technically feasible



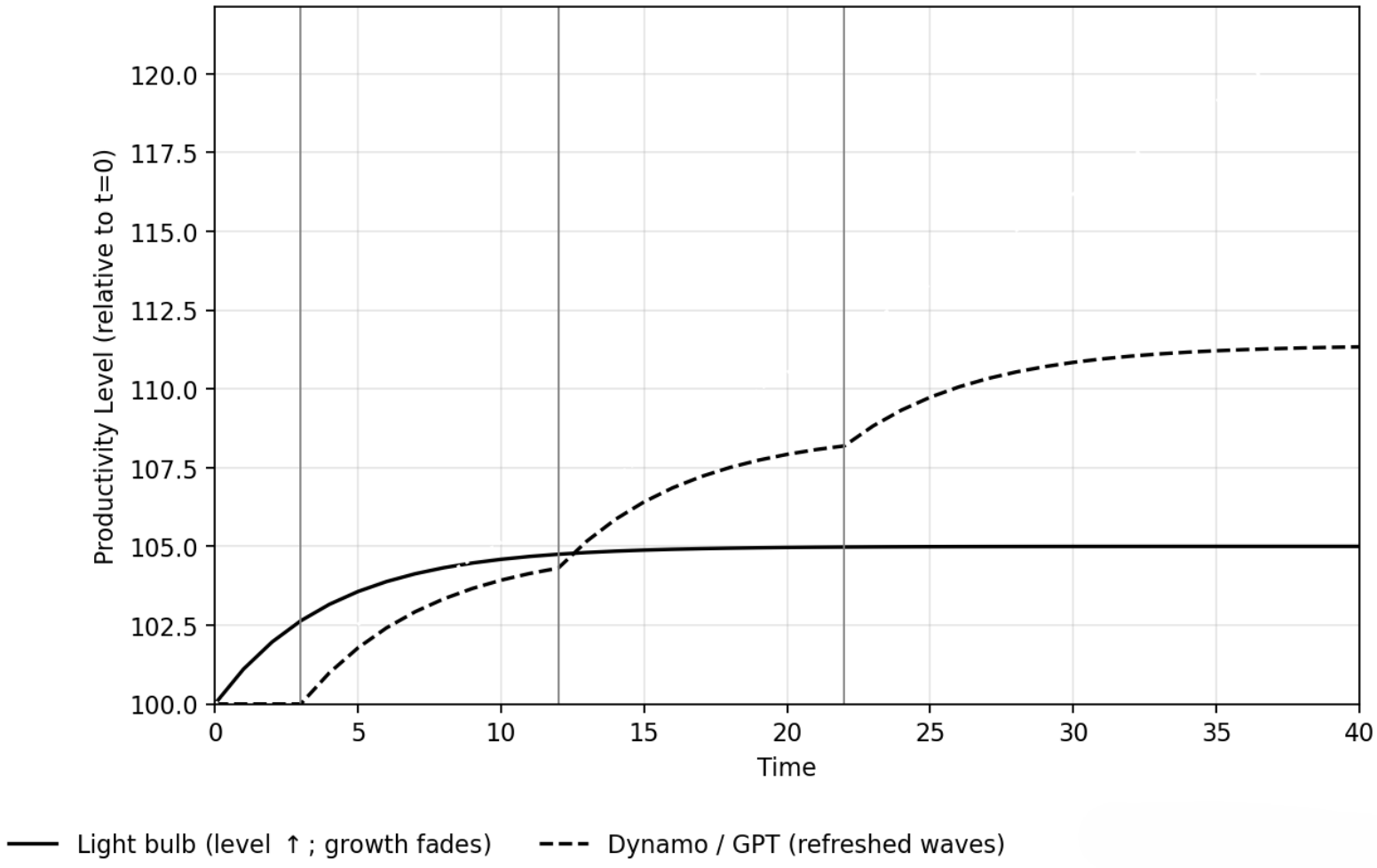
Source: METR

Human Level Benchmarks ≠ Cost-Effective Deployment at Scale

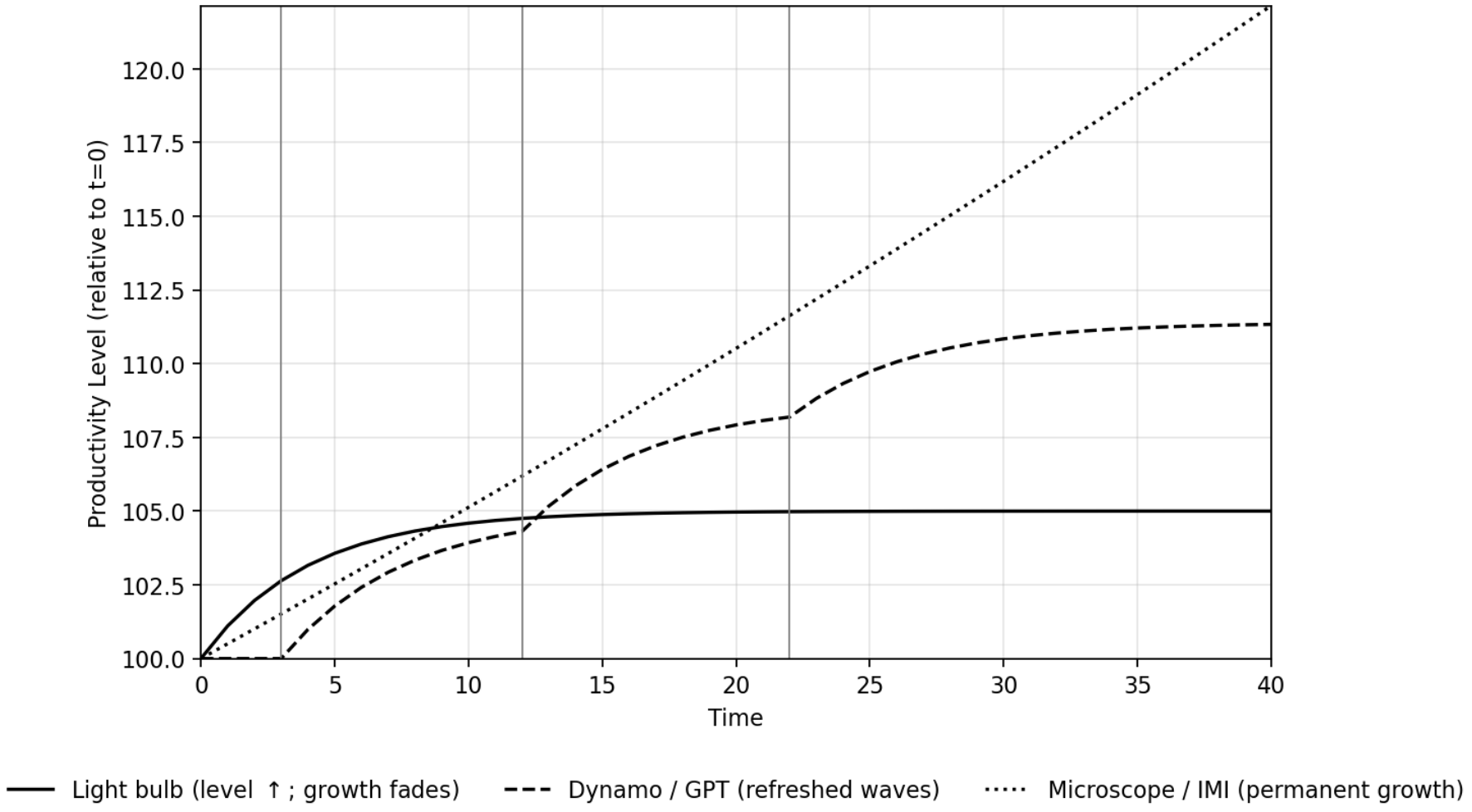
Our Approach: Types of Growth



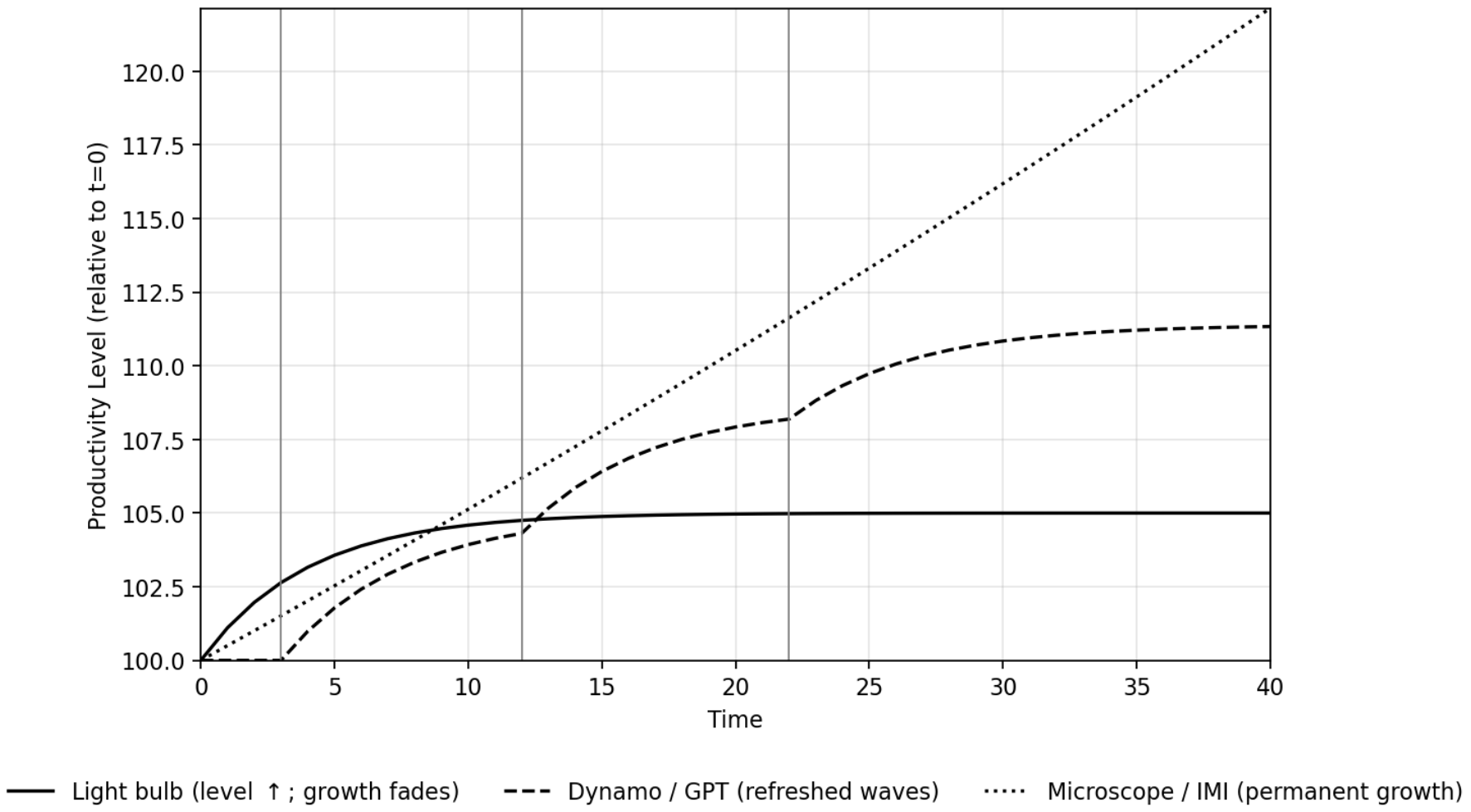
Our Approach: Types of Growth



Our Approach: Types of Growth



Our Approach: Types of Growth

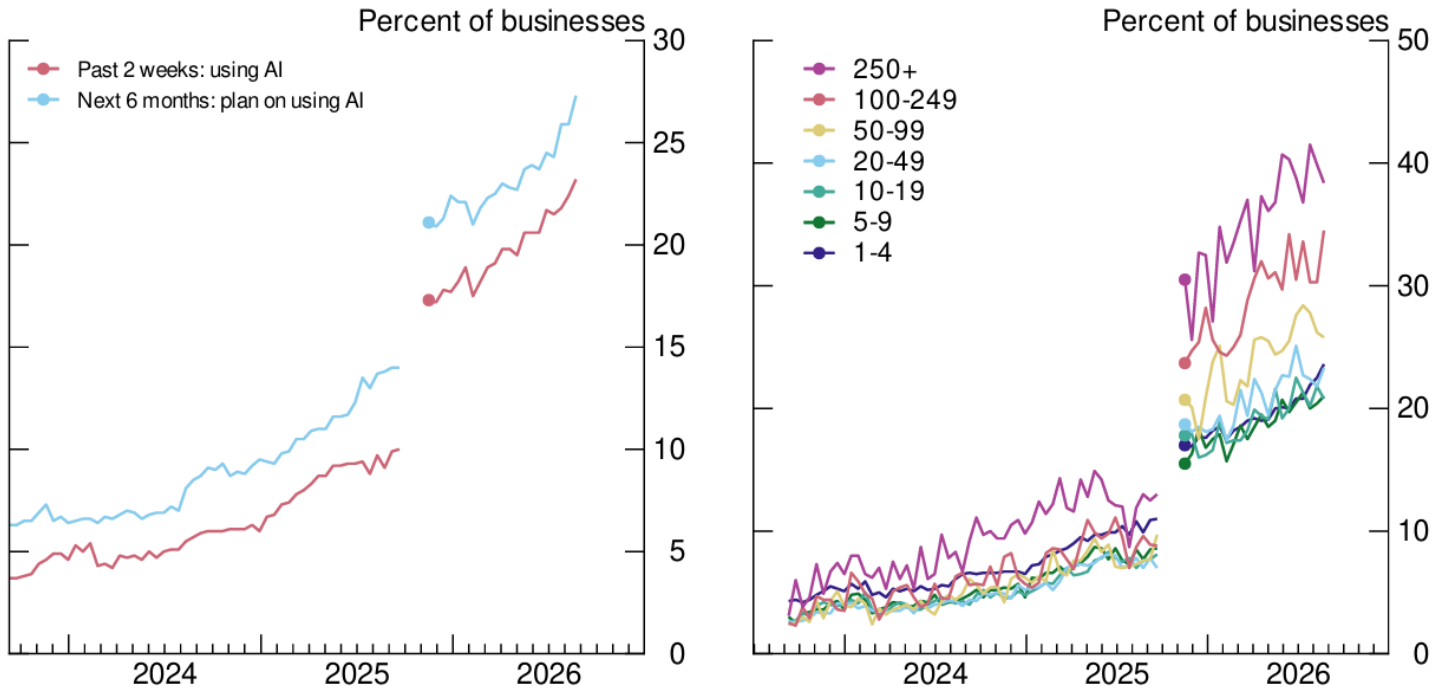


Baily, Byrne, Kane, and Soto (2026)

- Evidence via benchmarks, adoption surveys, product and process innovations, scientific use, investment,...

GPT Criterion 1: Diffusion

Source: Census BTOS

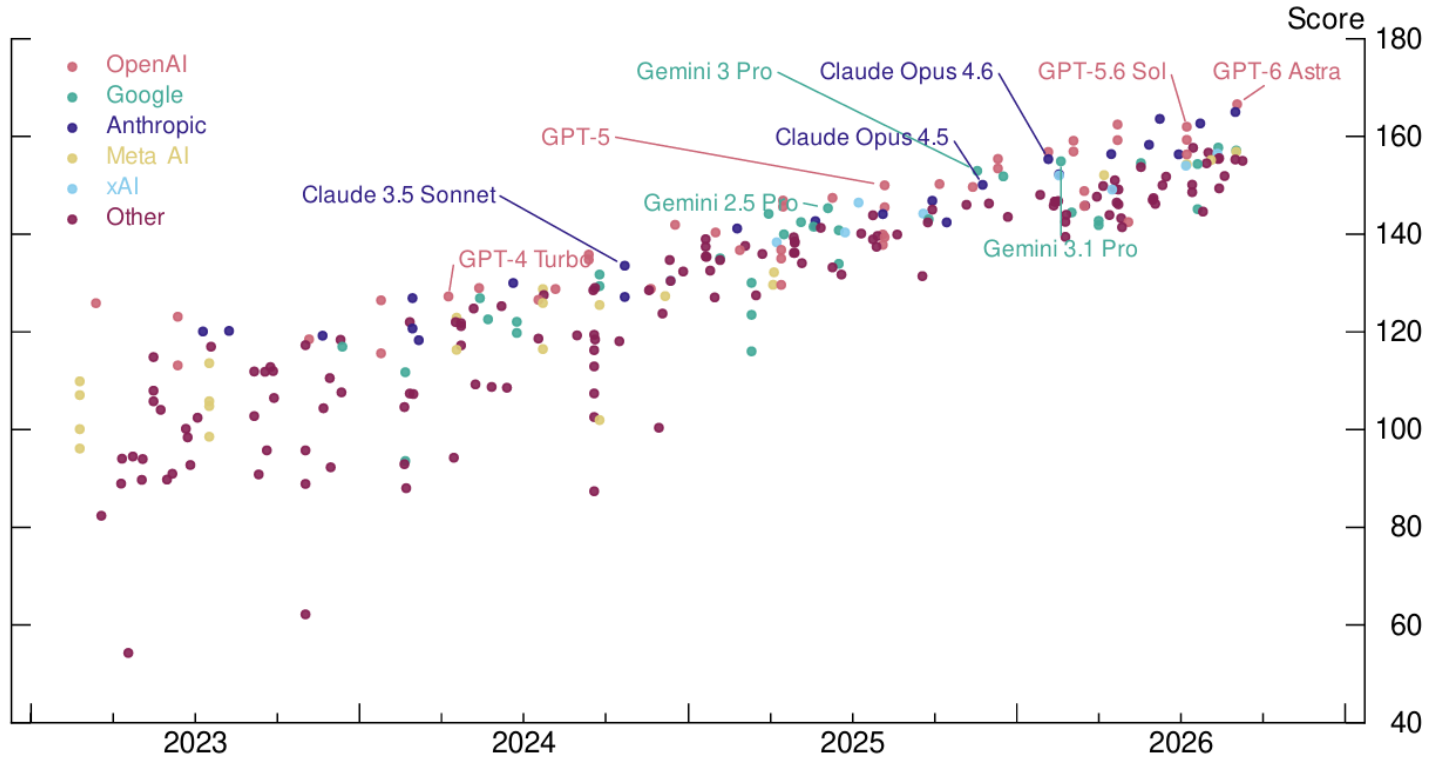


- AI use is rising, but still far from universal
- Larger firms remain ahead
- Adoption is not the same as reorganization

GPT Criterion 2: Knock-on innovation

- Products:
  - User interfaces (ChatGPT, GitHub Co-pilot)
  - Agentic coding tools (Claude Code, Cursor, Copilot)
- Processes:
  - System interfaces (Nvidia's Isaac Software Development Kit)
  - Digital twins
- Organization:
  - Elimination of middle management
  - Automation of writing and low-level analytical tasks

GPT Criterion 3: Ongoing Core Innovation



Source: Epoch AI Capabilities Index

Continued improvement in

- Models and Algorithm
- Data
- Hardware

IMIs: Invention in the Method of Invention

IMIs raise the efficiency of producing new ideas

Observational:	Image enhancement, data reconstruction
Analytical:	Coding, simulation, AlphaEvolve
Communication:	Literature search and synthesis
Organizational:	AI Co-Scientist and research agents

GenAI potentially operates through all four channels.

Source: Baily, Byrne, Kane, and Soto (2026)

IMIs: Evidence

Table 1: Occupations with High GenAI Usage

Job Type	Prompt Share	Empl. Share	Ratio
Computer & mathematical	37.2	3.4	10.9
Arts, design, etc.	10.9	1.4	7.8
Science	6.4	0.9	7.1
Architecture & engineering	4.5	1.7	2.6
Education, etc.	9.3	5.8	1.6
Memo: Other occupations	31.8	87.6	0.4

Source: Anthropic Economic Index, BLS

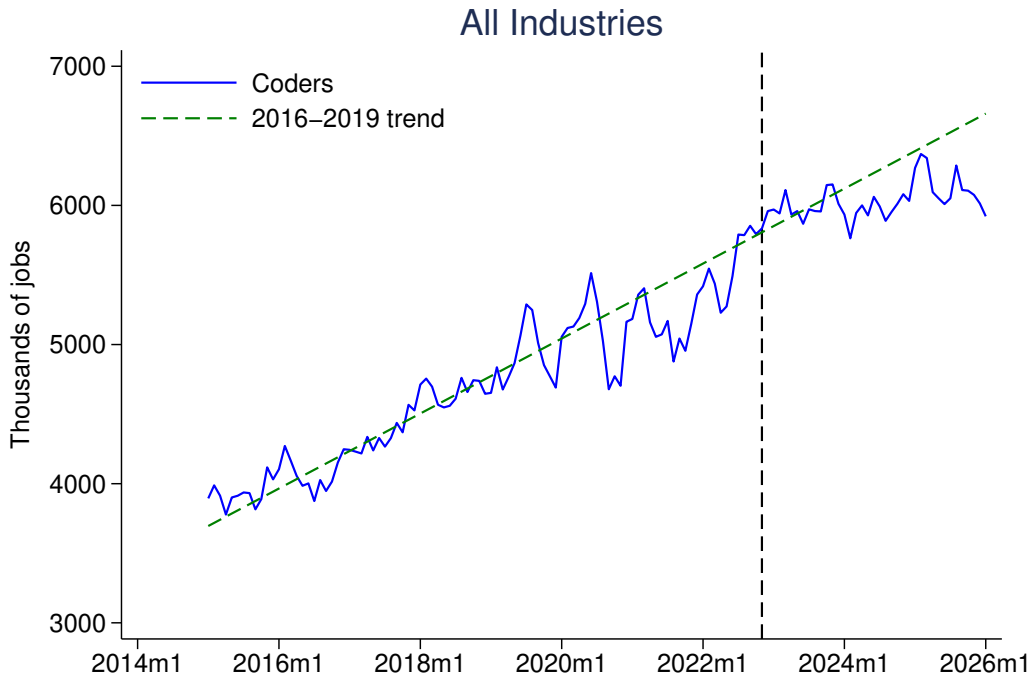
GenAI use is over-represented in science & math-like tasks

$\rightarrow$ Consistent with IMI channel

Labor: Coders as an Early Case

Coding could be natural occupation to monitor if effects appear first where AI use is deepest

- Coder employment still growing
- Growth slowed sharply after ChatGPT

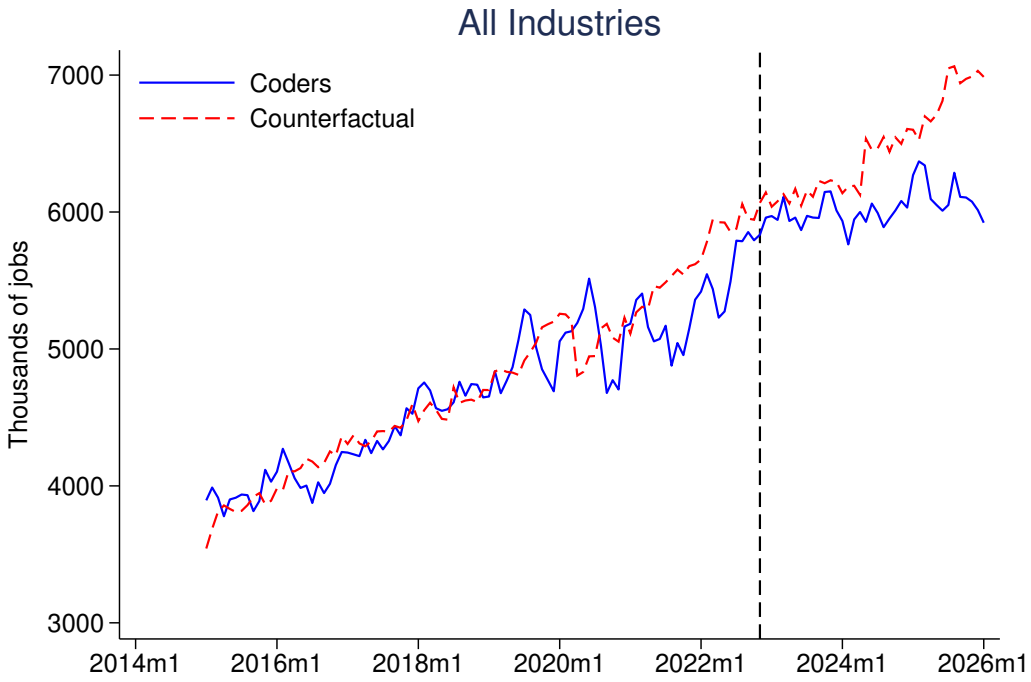


Source: Crane and Soto (2026)

Labor: Coders as an Early Case

Coding could be natural occupation to monitor if effects appear first where AI use is deepest

- Coder employment still growing
- Growth slowed sharply after ChatGPT
- About 3 pp/year lower after industry controls



The gap is occupation-specific, not simply an industry downturn

Source: Crane and Soto (2026)

Where Are We Now?

Capabilities and costs	Capabilities advancing rapidly
Investment and adoption	Investment booming; adoption wide but shallow
Productivity and labor	Broad aggregate effects still limited

The economy still looks more like a buildout and reorganization phase than a broad-based transformation.

Source: Soto, Thieu, and Allen (2026)

Conclusions

- **Bottom line:** GenAI is plausibly **both a GPT and an IMI**
  - Level effects on productivity seem likely from early evidence
  - Growth effects hinge on several factors, such as:
    - Adoption speed
    - Complementary build-outs
    - Impact on labor markets
- **Magnitude and timing remain highly uncertain**
  - The path from GPT/IMI to measured productivity can be long
  - A longer path $\rightarrow$ smaller near-term growth effects

Thank You!

paul.e.soto@frb.gov

- Baily, Byrne, Kane, and Soto (2026, Working Paper)
  Generative AI: What Type of Technology?
- Crane and Soto (2026, Working Paper)
  AI and Coder Employment: Compiling the Evidence
- Soto, Thieu, and Allen (2026, FEDS Note)
  The AI Buildout and the Economy

Thank you for your engagement!

Please complete the post-event survey. Your input will inform future convenings.

Have a follow-up question or comment for the researchers? Reach out directly at

- Natalie.Holmes@sf.frb.org
- Sylvain.Leduc@sf.frb.org
- Adam.Scavette@phil.frb.org
- Paul.E.Soto@frb.gov

Check out “Promise, anxiety, and change: What the Fed is learning about AI’s impact on work,” published 9.22.26:

Coming soon

By October 13 – We'll send a follow-up email with links to event resources and to related Fed resources on AI and its impact on work.

November 5 – *Connecting Communities* webinar on the Boston Fed's Financial Inclusion Resource Center, open to the public

November 16 – *Research and the Community* seminar on financial inclusion, for members of the Fed's community advisory groups

Fed Communities is the Federal Reserve's platform for sharing the central bank's research, data, tools, and expertise with audiences that can use them.
Learn more at fedcommunities.org.

FedCommunities

