Supply Factors and the Evolution of the Economy

2025 Razin Economic Policy Lecture
Georgetown University

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President & Chief Executive Officer

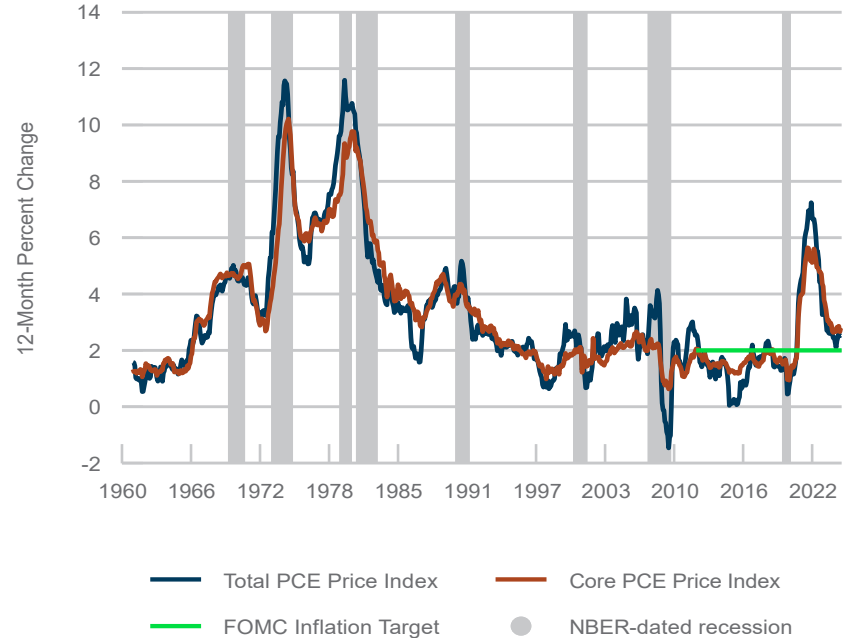Federal Reserve Bank of Boston

April 10, 2025

Washington, D.C.

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Figure 1 | The Unemployment Rate and Inflation

A. Unemployment Rate

Legend:
- Unemployment Rate : 16+ Years
- NBER-dated recession

B. PCE Inflation

Legend:
- Total PCE Price Index
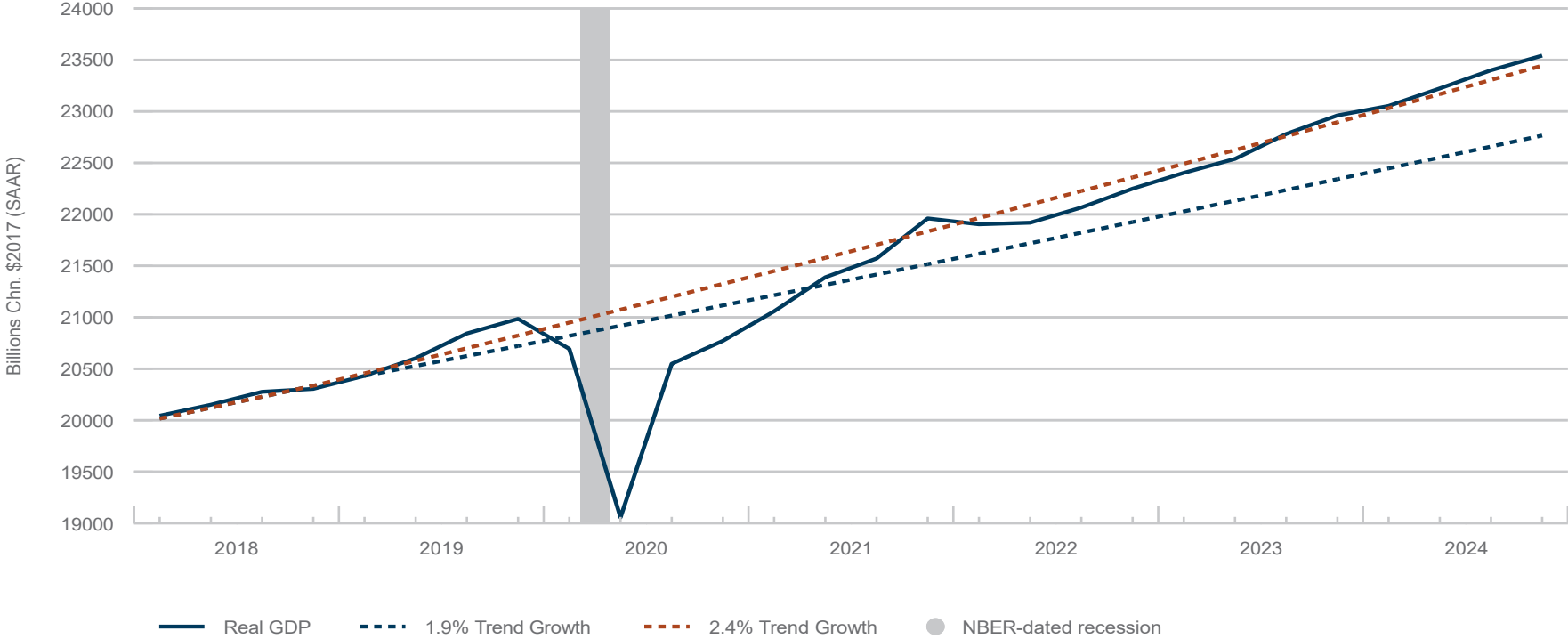- Core PCE Price Index
- FOMC Inflation Target
- NBER-dated recession

Note: *In January 2012 the FOMC formally adopted a 2 percent target for total PCE inflation .*
Source: *Bureau of Labor Statistics , Bureau of Economic Analysis / Haver Analytics.*

# Figure 2 | Real GDP and Longer-Run Trend Growth

Note: *1.9% trend growth based on median estimate of FOMC participants in the March 2019 Summary of Economic Projections*
Source: *Bureau of Economic Analysis / Haver Analytics, Author's Calculations.*

Figure 3 | Nonfarm Payroll Employment and Longer-Run Trend Growth
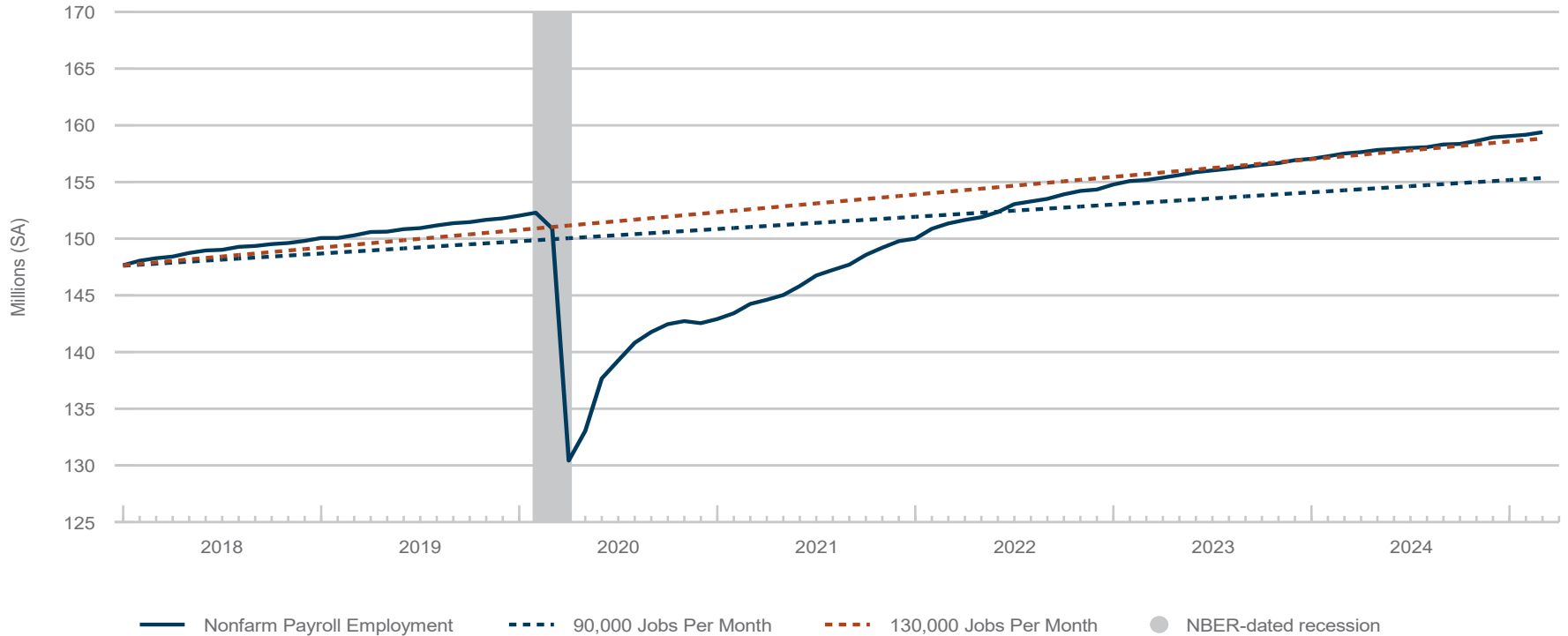
Note: *90,000 jobs per month trend based on average monthly nonfarm payroll growth over the 2007-2018 period.*
Source: *Bureau of Labor Statistics / Haver Analytics, Author's Calculations.*

Figure 4 | Real Output per Hour: Nonfinancial Corporate Sector

Index: 2017=100

Legend:
— Real Output per Hour, Nonfinancial Corporate Sector   ···· 1.2% Trend Growth   ···· 2.0% Trend Growth   ● NBER-dated recession
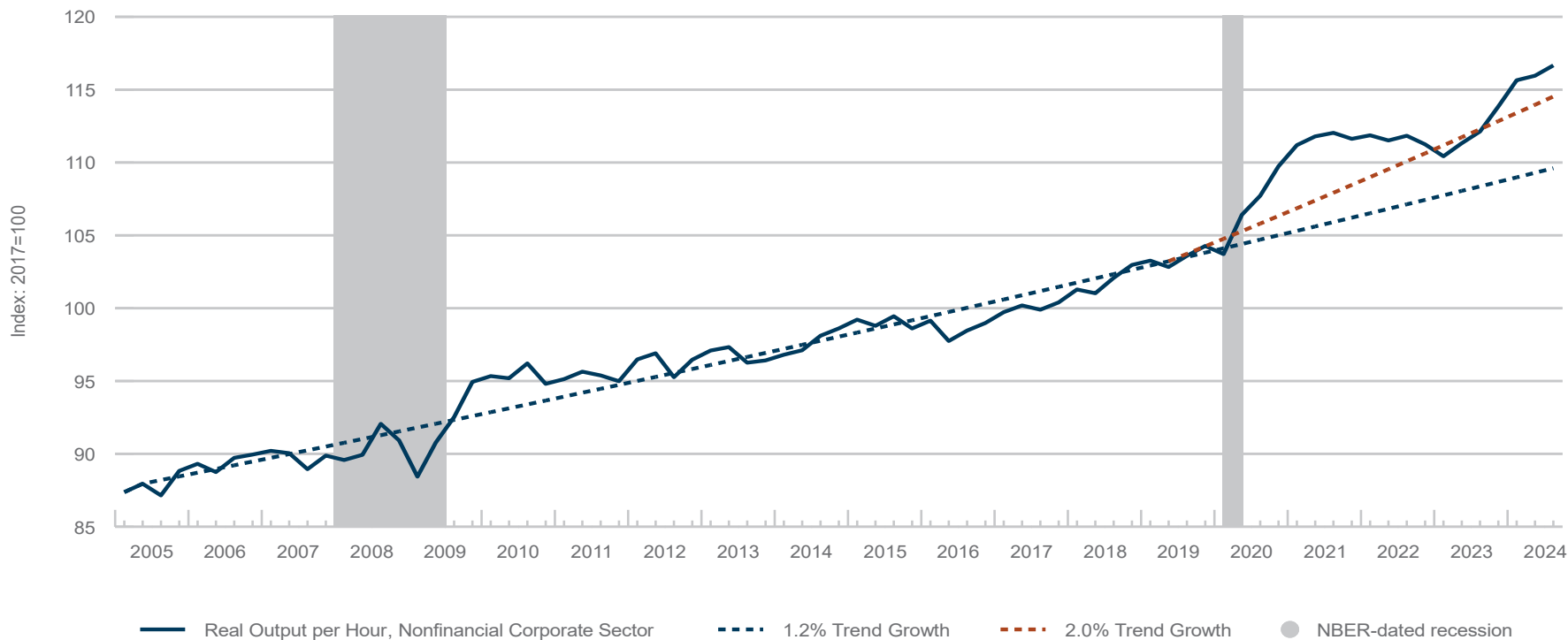
Note: *The 1.2 percent trend growth estimate is based on average real output per hour growth over the 2006-2019 period.*
Source: *Bureau of Labor Statistics / Haver Analytics, Author's Calculations.*
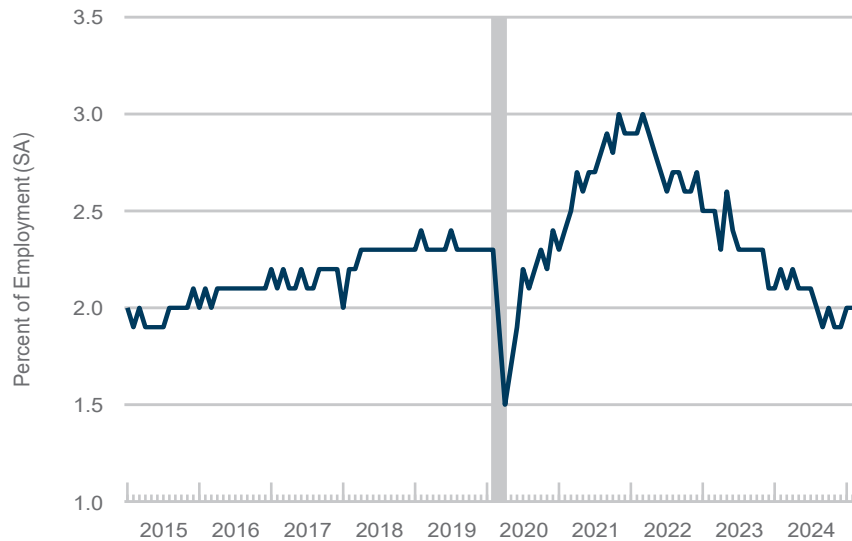
Figure 5 | Business Formation and Quits Rate

A: Business Applications
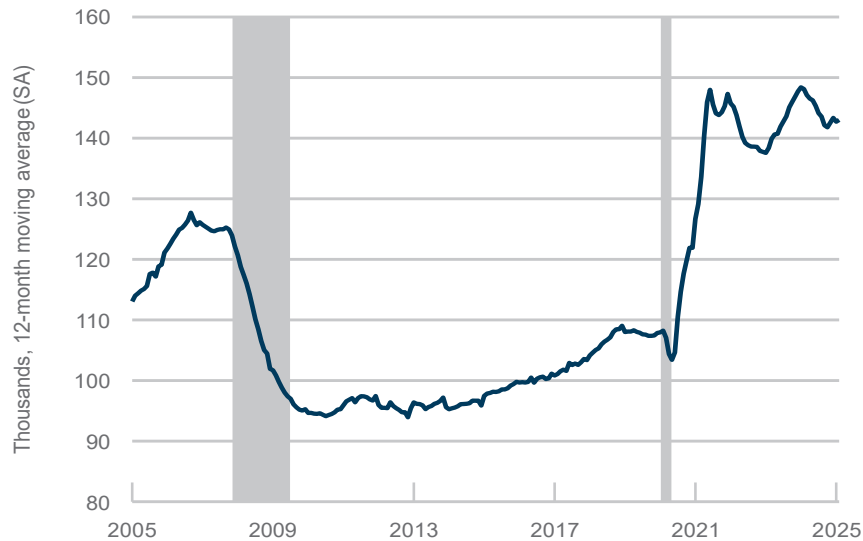
B: Quits Rate

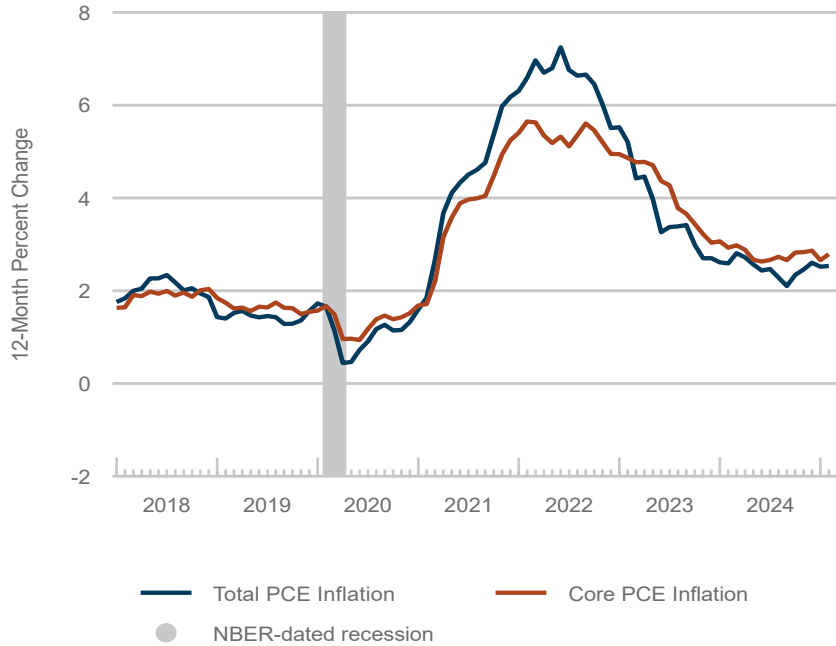Number of High-Propensity Business Applications

NBER-dated recession

Quits Rate
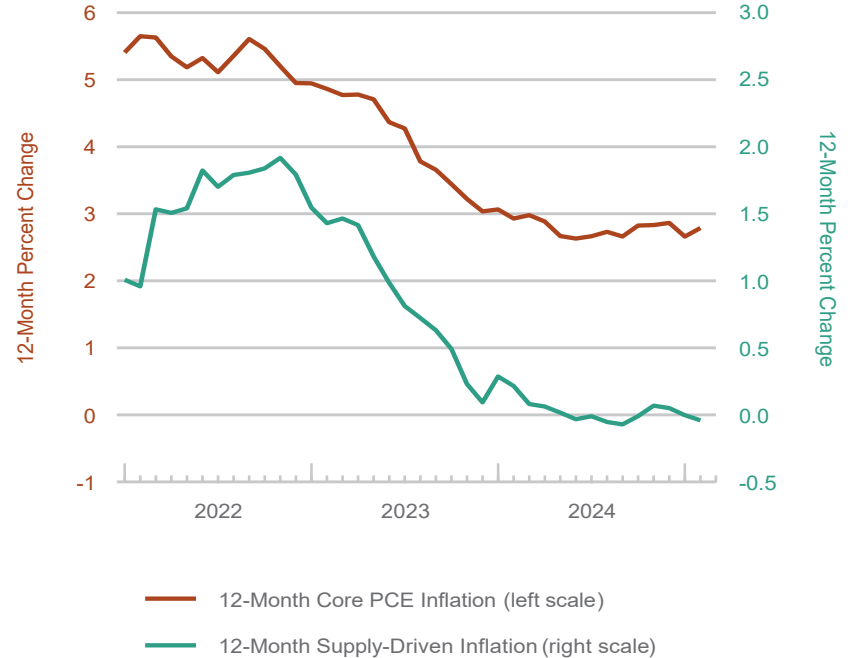
NBER-dated recession

Source: *Census Bureau, Bureau of Labor Statistics/ Haver Analytics*.
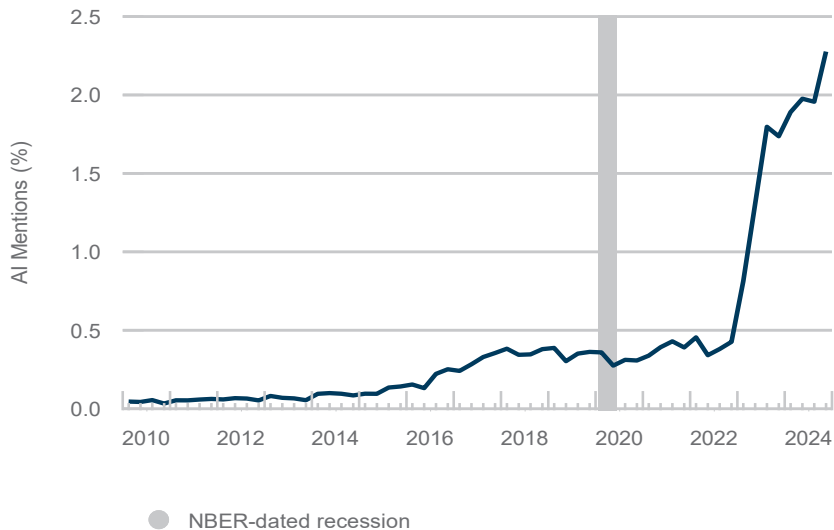
Figure 6 | PCE Inflation

A: PCE Inflation

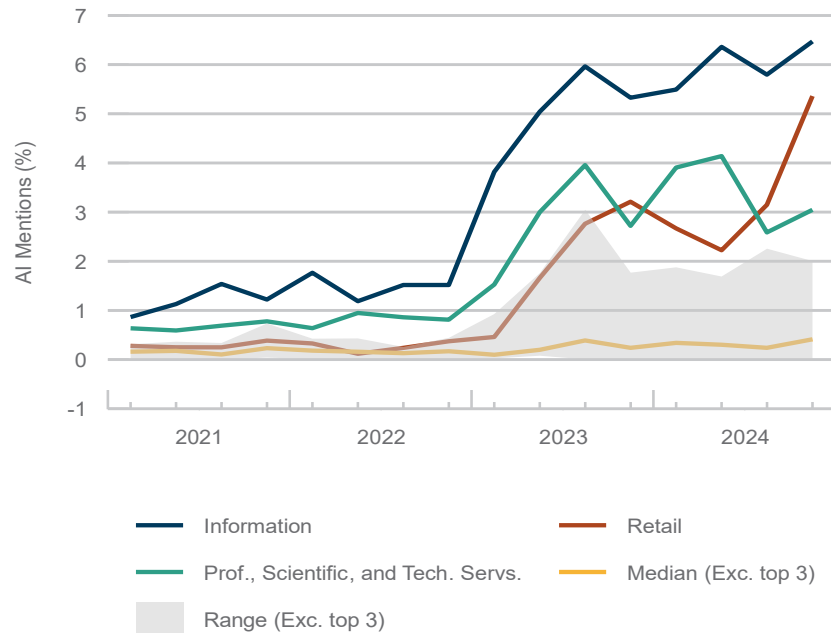## B: Core PCE and Supply-Driven Inflation

Note: *Supply-driven inflation based on Leiva-León, Sheremirov, Tang, and Zakrajšek (2025)*
Source: *Bureau of Economic Analysis / Haver Analytics.*

Figure 7 | AI-Related Technology Mentions in Corporate Earnings Calls

A: AI Mentions, Total

NBER-dated recession

B: AI Mentions, by Industry

— Information
— Prof., Scientific, and Tech. Servs.
Range (Exc. top 3)
— Retail
— Median (Exc. top 3)
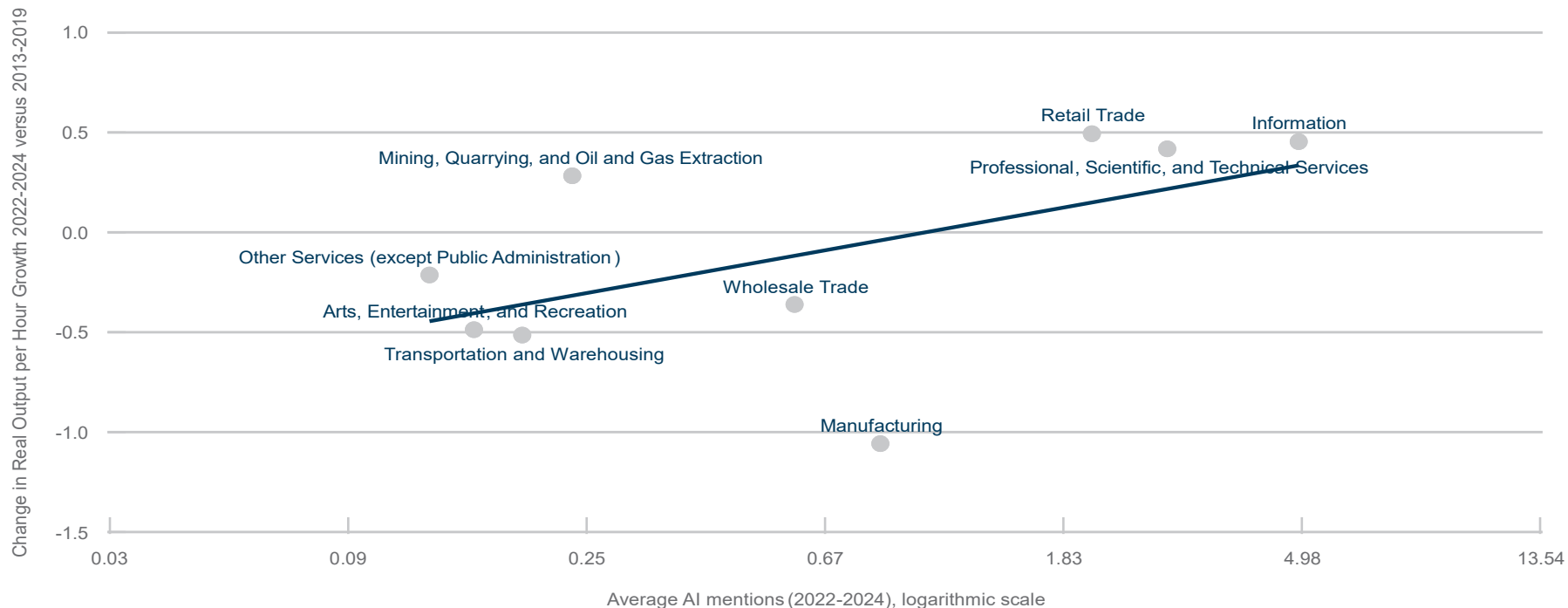
Notes: *"AI Mentions" refers to the number of sentences in an earnings call transcript that contain "Artificial Intelligence " or related terms, relative to the total number of sentences in the transcript (represented as a percent). This ratio is aggregated from individual company earnings calls to the industry level using sales-weighted means.* Source: *NL Analytics, Author's Calculations.*

Figure 8 | Mentions of AI in Earnings Calls and Productivity Growth by Industry

Change in Real Output per Hour Growth 2022-2024 versus 2013-2019

Data points:
- Retail Trade
- Information
- Professional, Scientific, and Technical Services
- Mining, Quarrying, and Oil and Gas Extraction
- Other Services (except Public Administration)
- Arts, Entertainment, and Recreation
- Wholesale Trade
- Transportation and Warehousing
- Manufacturing

X-axis (logarithmic scale): 0.03, 0.09, 0.25, 0.67, 1.83, 4.98, 13.54
Average AI mentions (2022-2024), logarithmic scale

Y-axis: 1.0, 0.5, 0.0, -0.5, -1.0, -1.5

Notes: *"AI Mentions" refers to the number of sentences in an earnings call transcript that contain "Artificial Intelligence" or related terms, relative to the total number of sentences in the transcript (represented as a percent). This ratio is aggregated from individual company earnings calls to the industry level using sales-weighted means. Industry-level productivity is calculated as real gross output relative to aggregate hours worked in that industry . Blue line shows line of "best fit" between the change in productivity growth and average AI mentions with a slope of 0.21. That is, a 1 percentage point increase in AI mentions implies a 0.21 percentage point higher change in real output per hour*
Source: *NL Analytics, Author's Calculations.*

Figure 9 | Policy Uncertainty
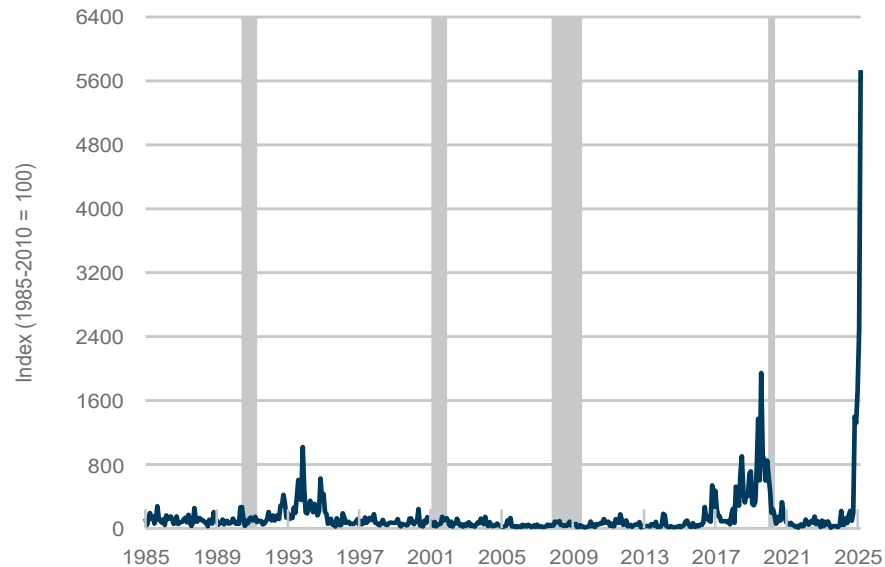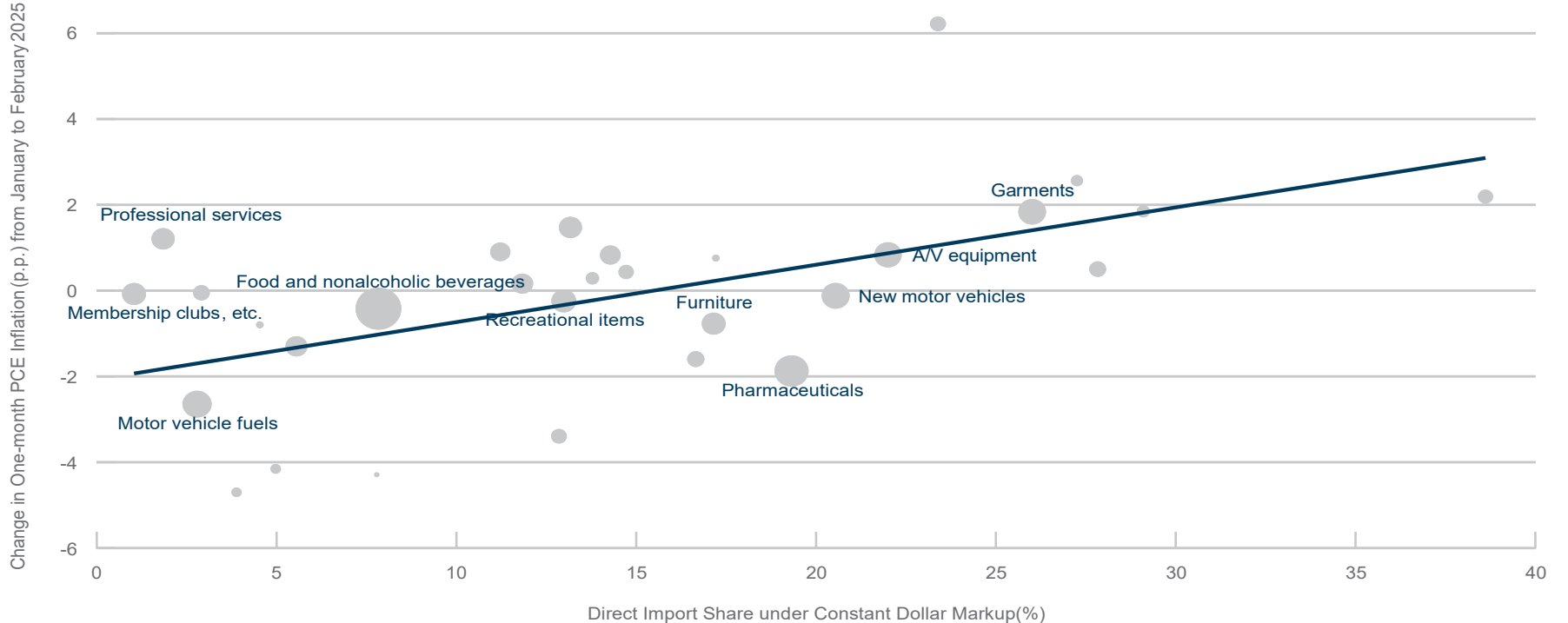
A: Economic Policy Uncertainty Index

B: Trade Policy Uncertainty Index
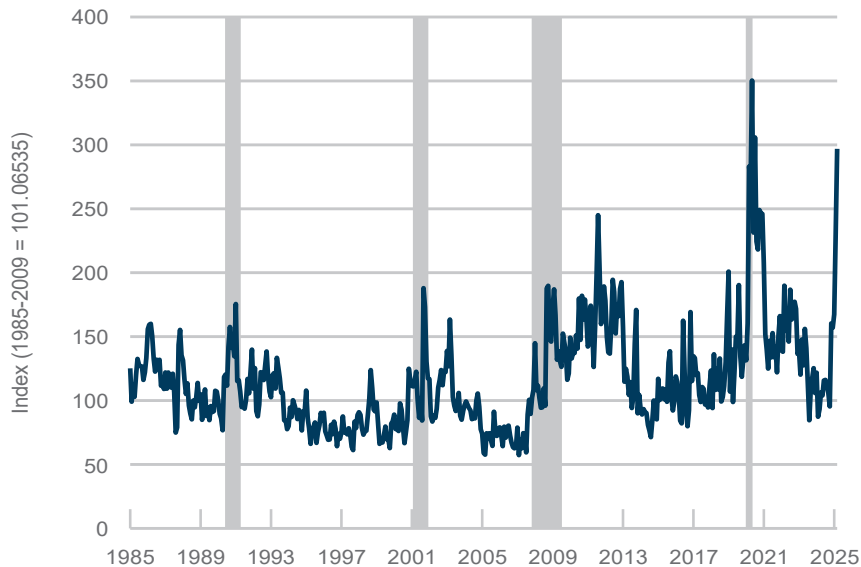
● NBER-dated recession

Note: *Last data point is March 2025.*
Source: *PolicyUncertainty.com / Haver Analytics.*

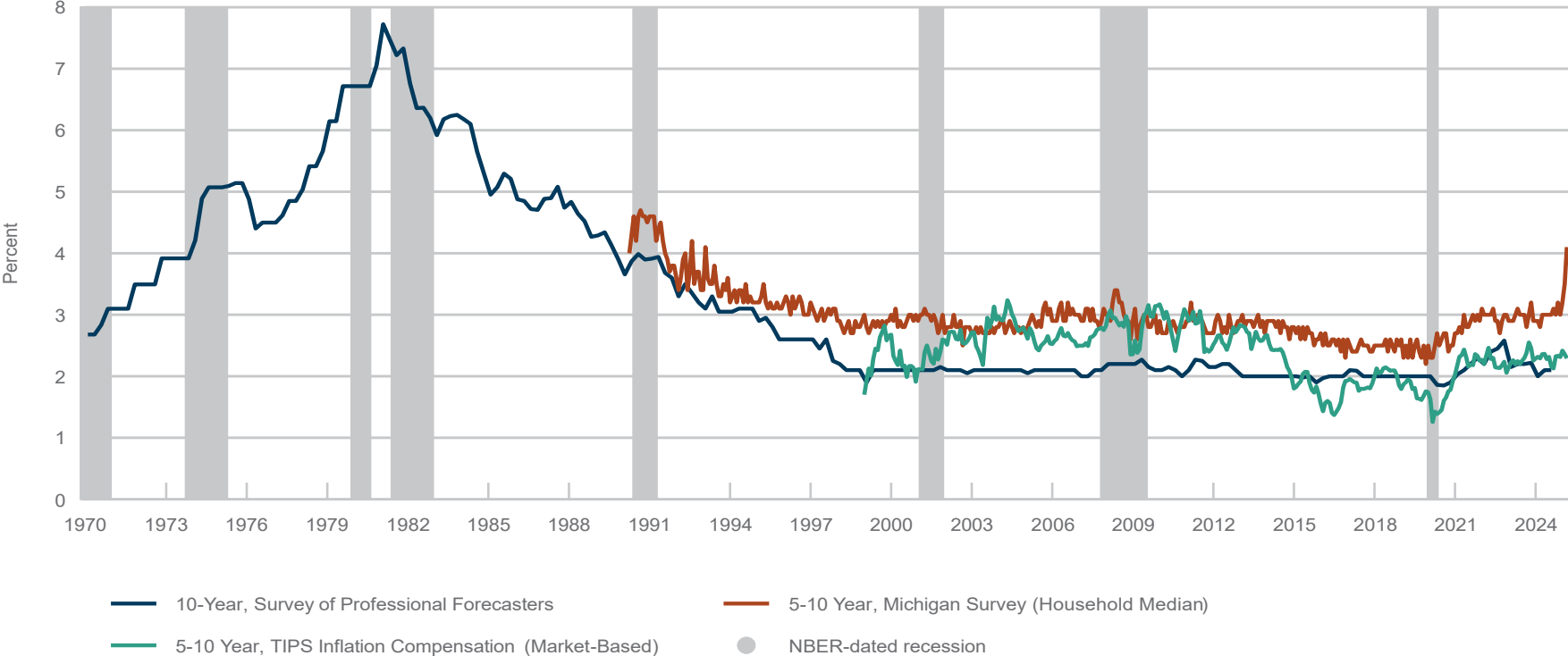# Figure 10 | Direct Tariff Exposure and February Change in PCE Inflation

Note: *Line shows the "best fit" between direct import exposure and the change in the monthly inflation across catagories, with a slope of 0.13. That is, a 1 percentage point higher direct import exposure implies a 0.13 percentage point higher change in inflation .*
Marker sizes represent category's share of PCE.
Source: *Bureau of Economic Analysis , Author's Calculations.*

Figure 11 | Inflation Expectations

Legend:
- 10-Year, Survey of Professional Forecasters
- 5-10 Year, Michigan Survey (Household Median)
- 5-10 Year, TIPS Inflation Compensation (Market-Based)
- NBER-dated recession

Source: *Federal Reserve Bank of Philadelphia, Federal Reserve Board of Governors, University of Michigan / Haver Analytics.*