



Spring 2024 Inforum Economic Outlook

RONALD HORST

INFORUM

MAY 2, 2024

Outline

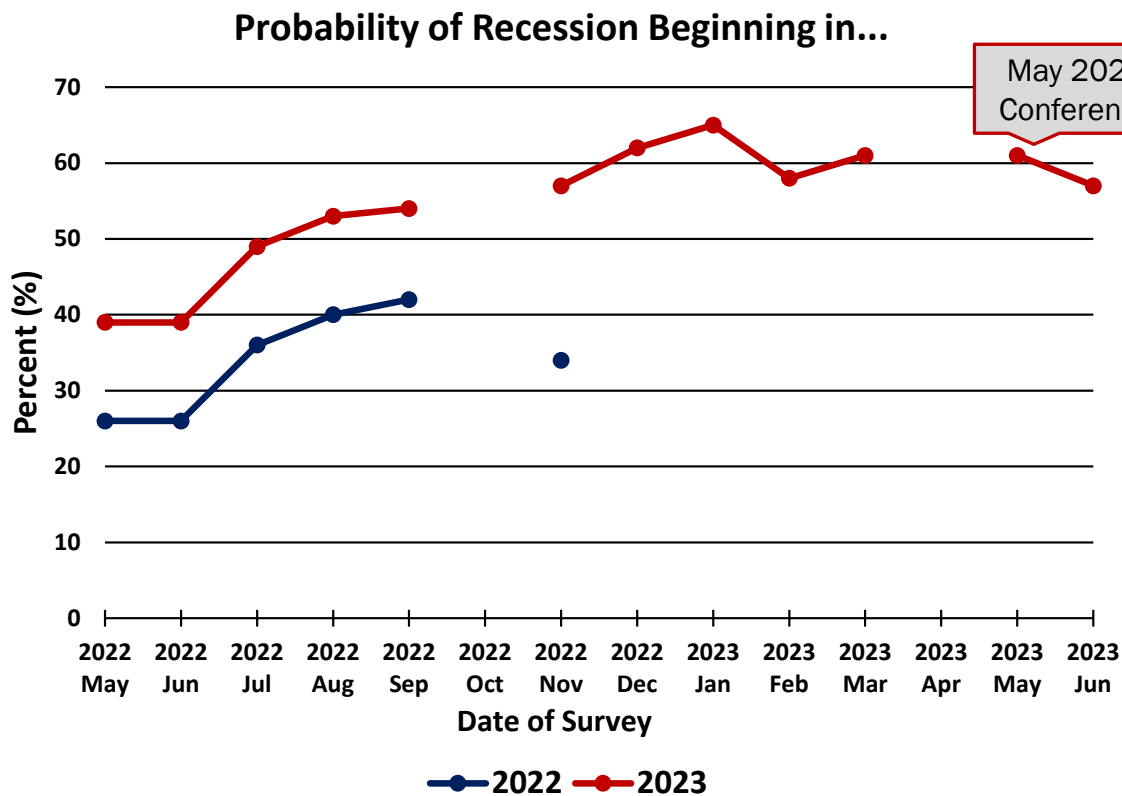
- Inforum Economic Outlook

- Consensus macroeconomic views: Recession, Inflation, Economic Growth
- Recent history and current environment: Select topics
- Macro outlook (preliminary)
- Sectoral outlook summary (preliminary)
- Additional material in packets and online

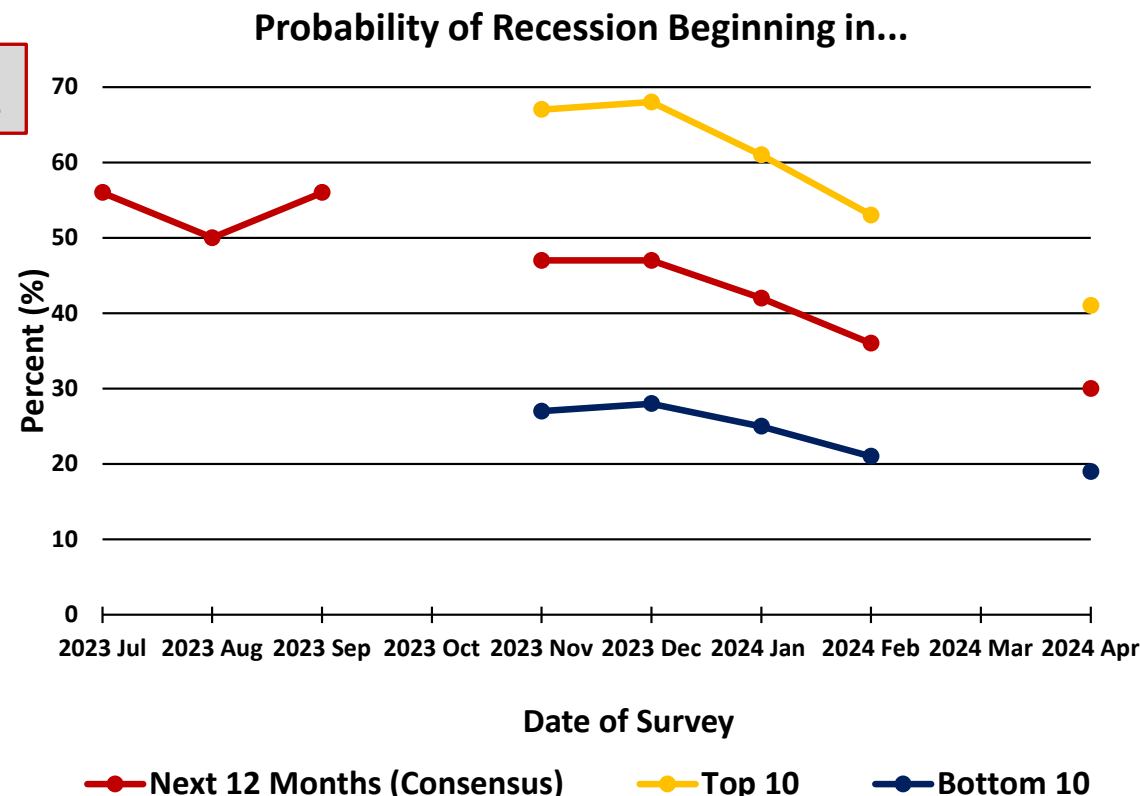
- Other presentations today

- Federal budgets, debt, and policy
- Effects of inflation on consumer sentiment and spending
- History of inflation and monetary policy

What Happened to Pessimism?

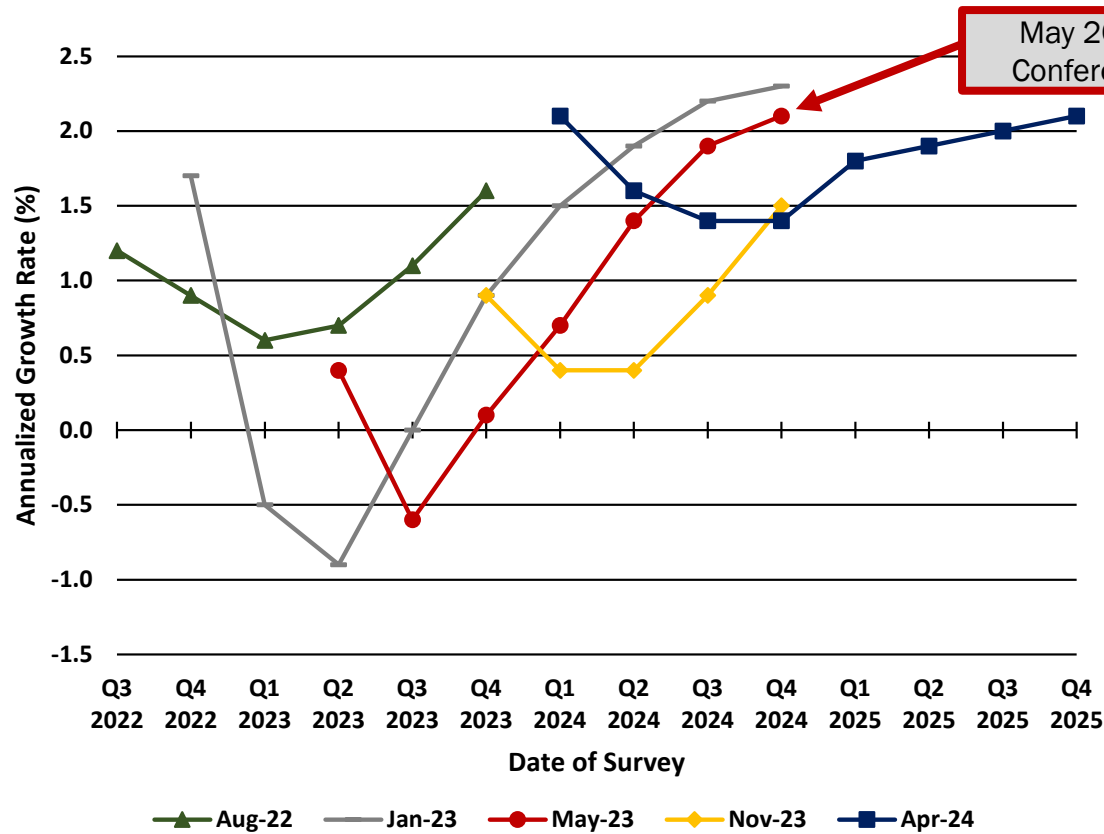


Consensus Outlook May 2023:
Recession Probability ≈ 60%

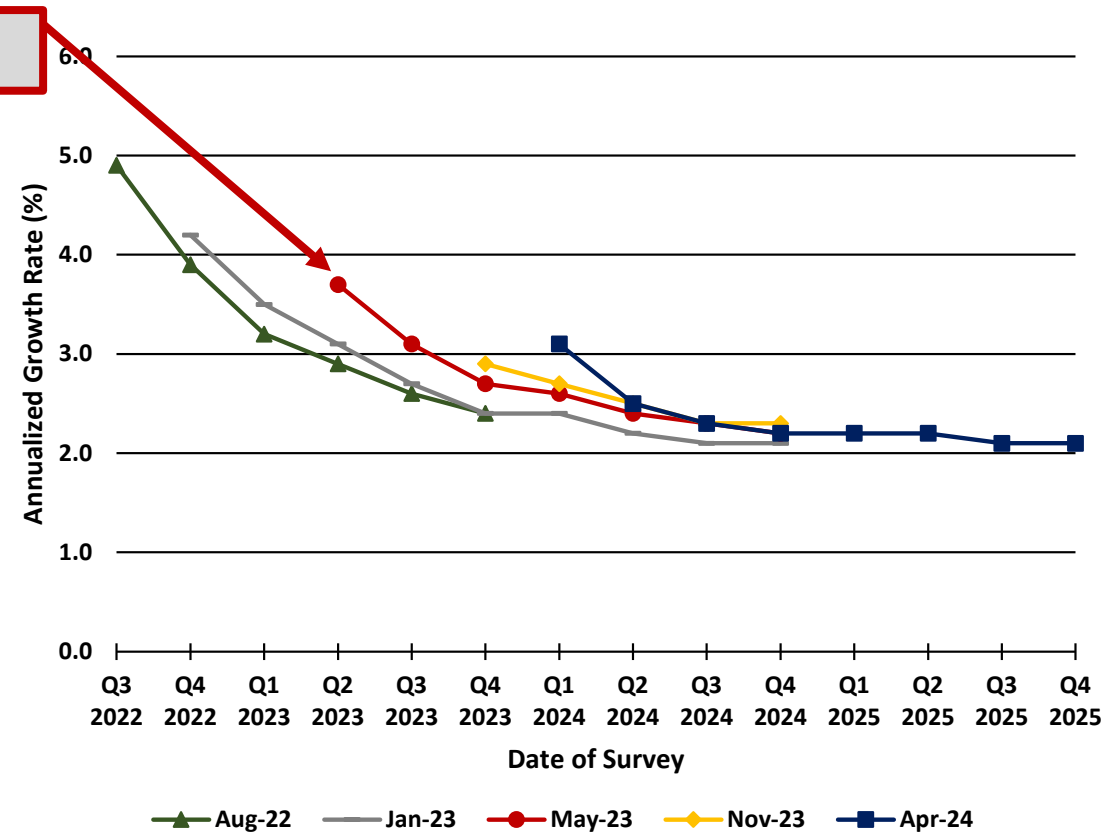


Consensus Outlook in April 2024:
Recession probability 30%

Continuing Likelihood of Slowdown?

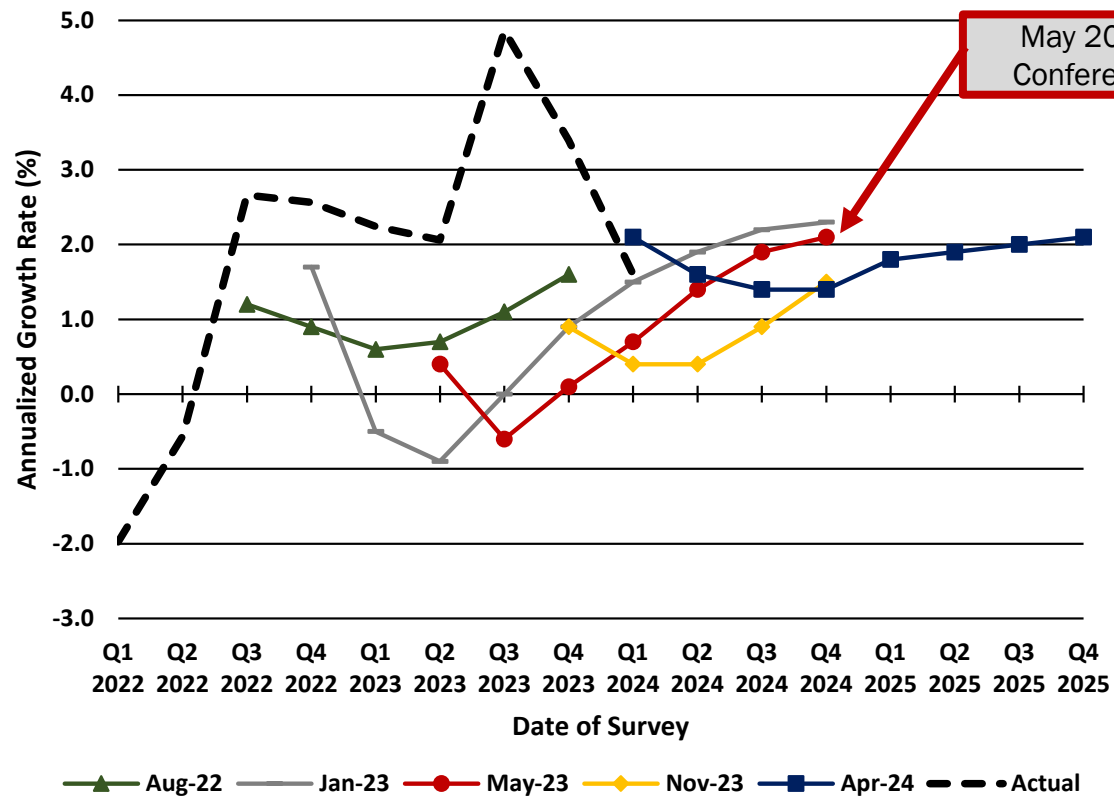


Consensus Outlook: Real GDP Growth
Slowdown still pending...

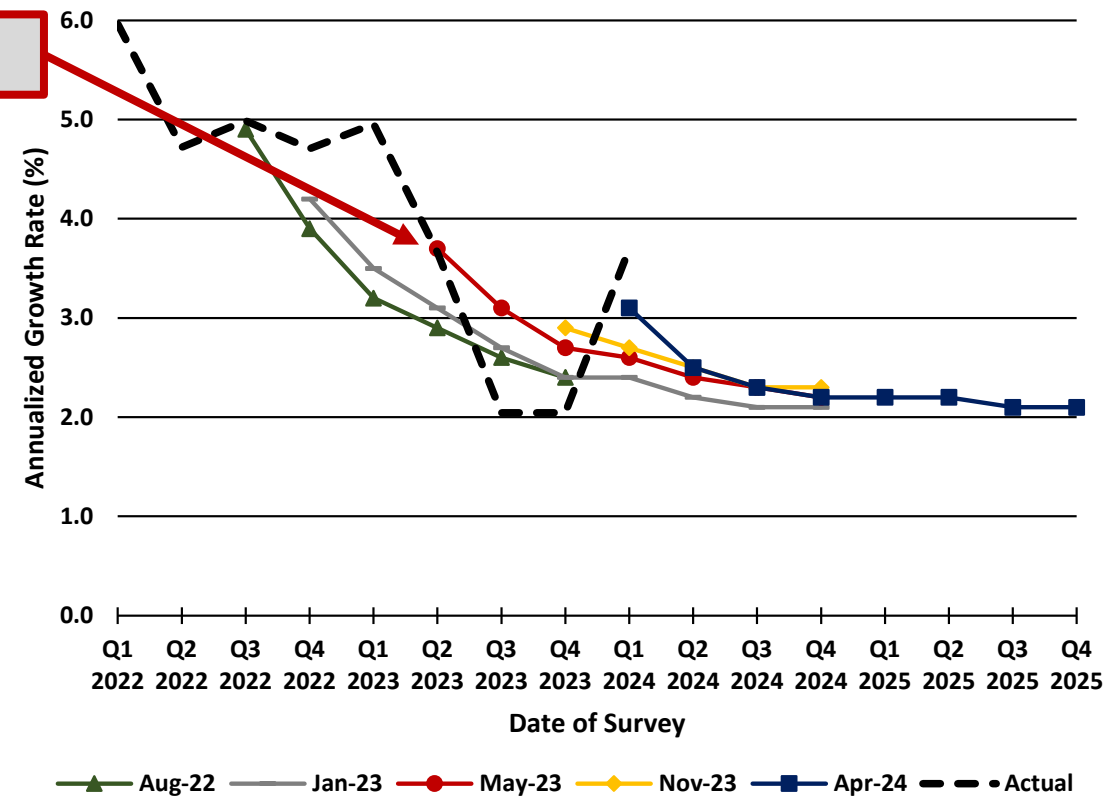


Consensus Outlook: Core PCE Inflation
Drop in inflation still coming soon...

Surprisingly Resilient GDP & Inflation



Consensus Outlook: Real GDP Growth
Typically underestimated growth through Q4 2023



Consensus Outlook: Core PCE Inflation
Often underestimated inflation through Q1 2024

Why No Recession?

■ Factors Potentially Leading to Decline

- Tight Monetary Policy
- Yield-curve inversion potentially leading to financial difficulties
- Sharp rise in gasoline prices (to June 2022)
- Geopolitical difficulties (Ukraine, Middle East, China, ...)

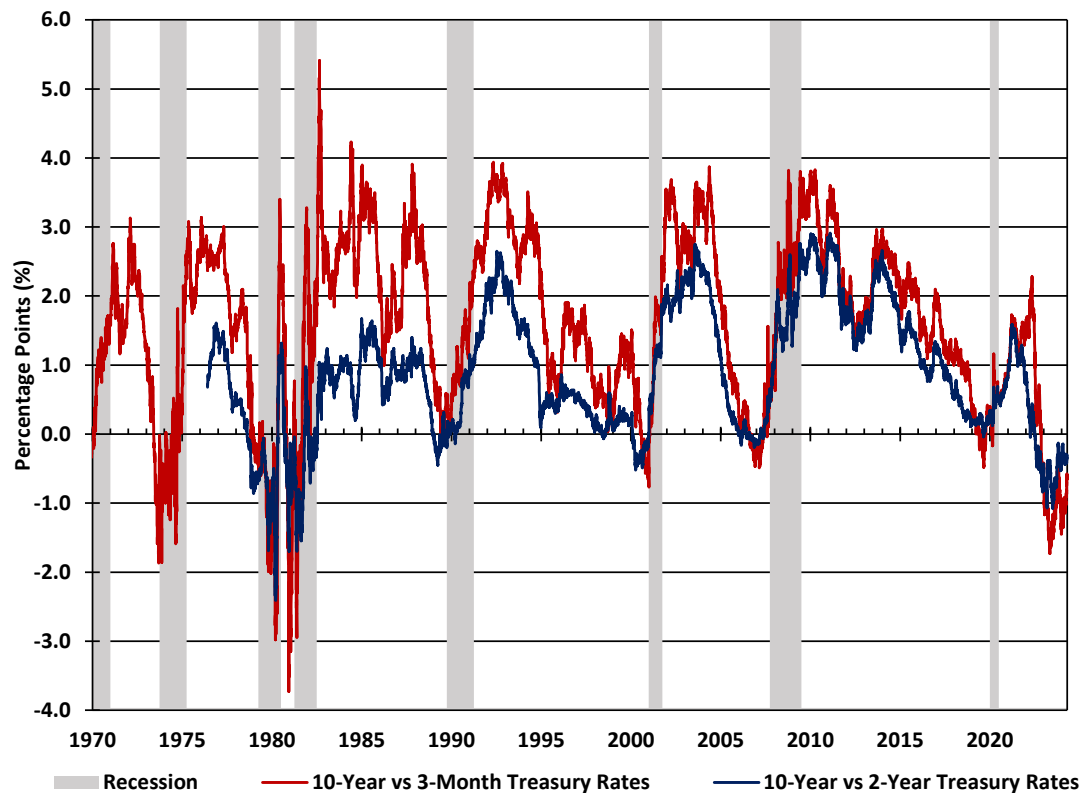
■ Mitigating Demand-Side Factors

- Expansionary fiscal policy
- Robust private activity supported by federal policy
- Moderately strong household income and spending

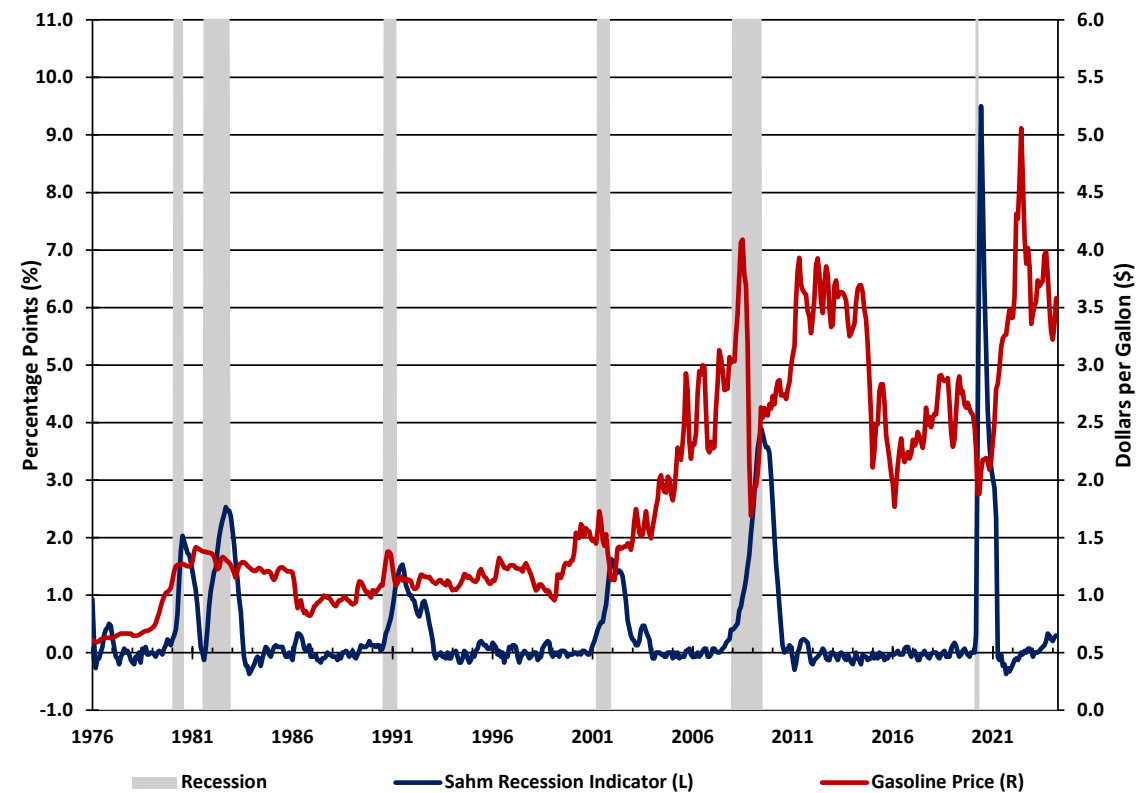
■ Mitigating Supply-Side Factors

- Higher Immigration Rates
- Higher Labor Force Participation Rates
- Higher Labor Productivity
- High Utilization Rates
- Improving Supply-Chains and Logistics

Why Such Recession Fears?



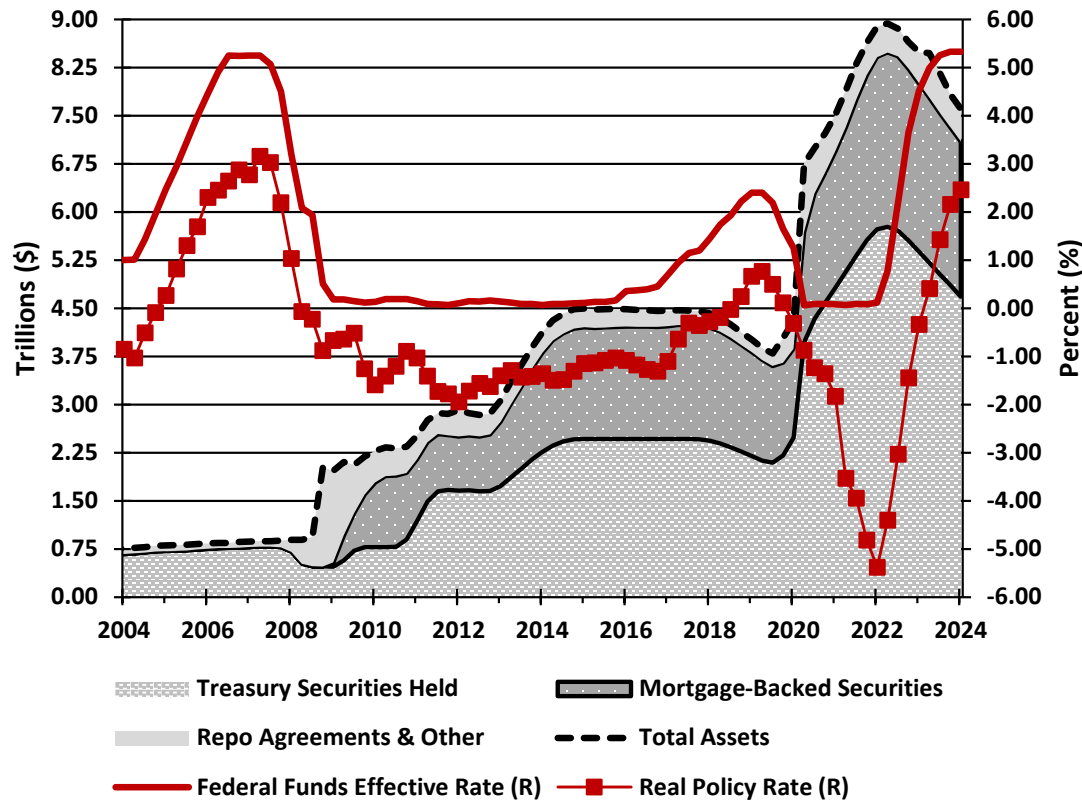
Inverted Interest Rates



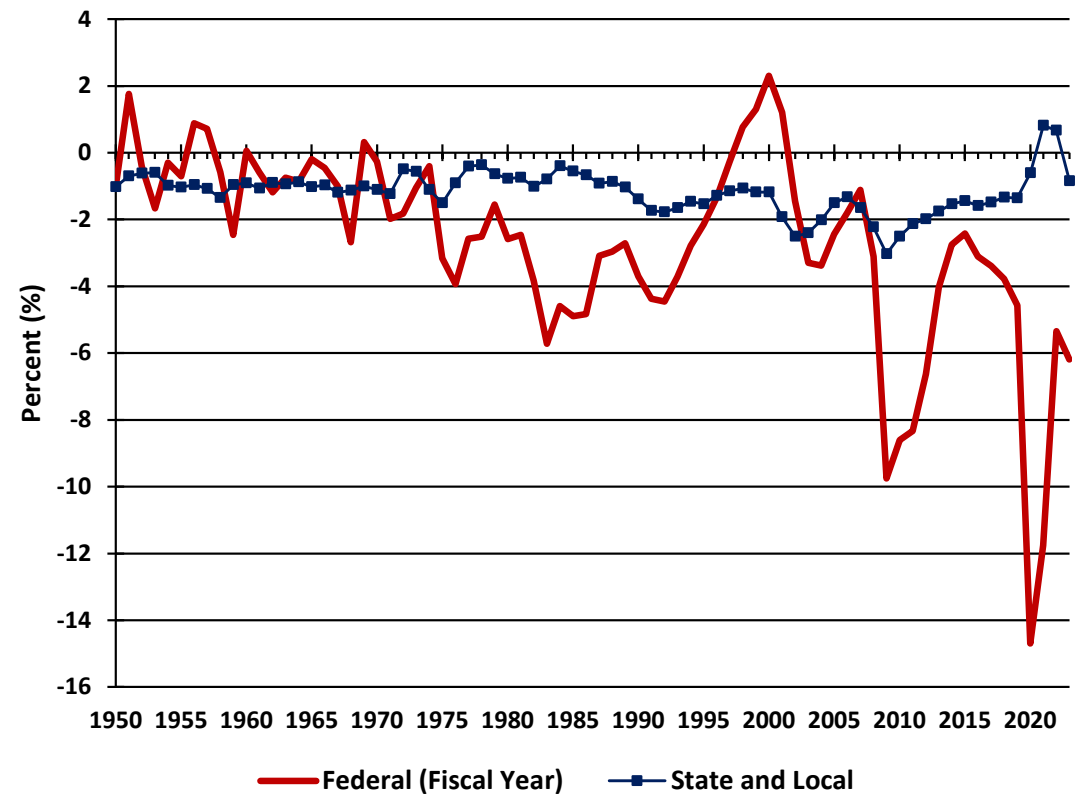
Rising Sahm's Indicator and Rising Gasoline Prices

The Sahm Recession Indicator signals the start of a recession when the three-month moving average of the national unemployment rate (U3) rises by 0.50 percentage points or more relative to the minimum of the three-month averages from the previous 12 months.

Conflicting Fiscal & Monetary Policy

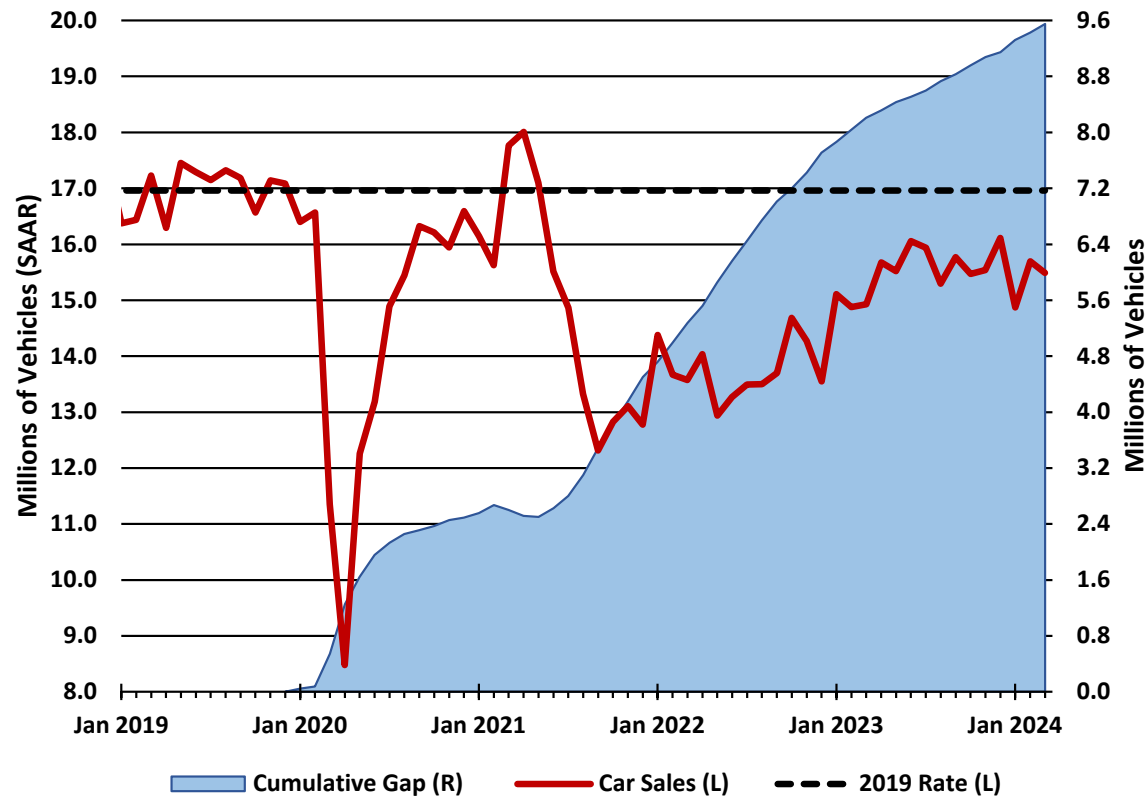


Tightening monetary policy...

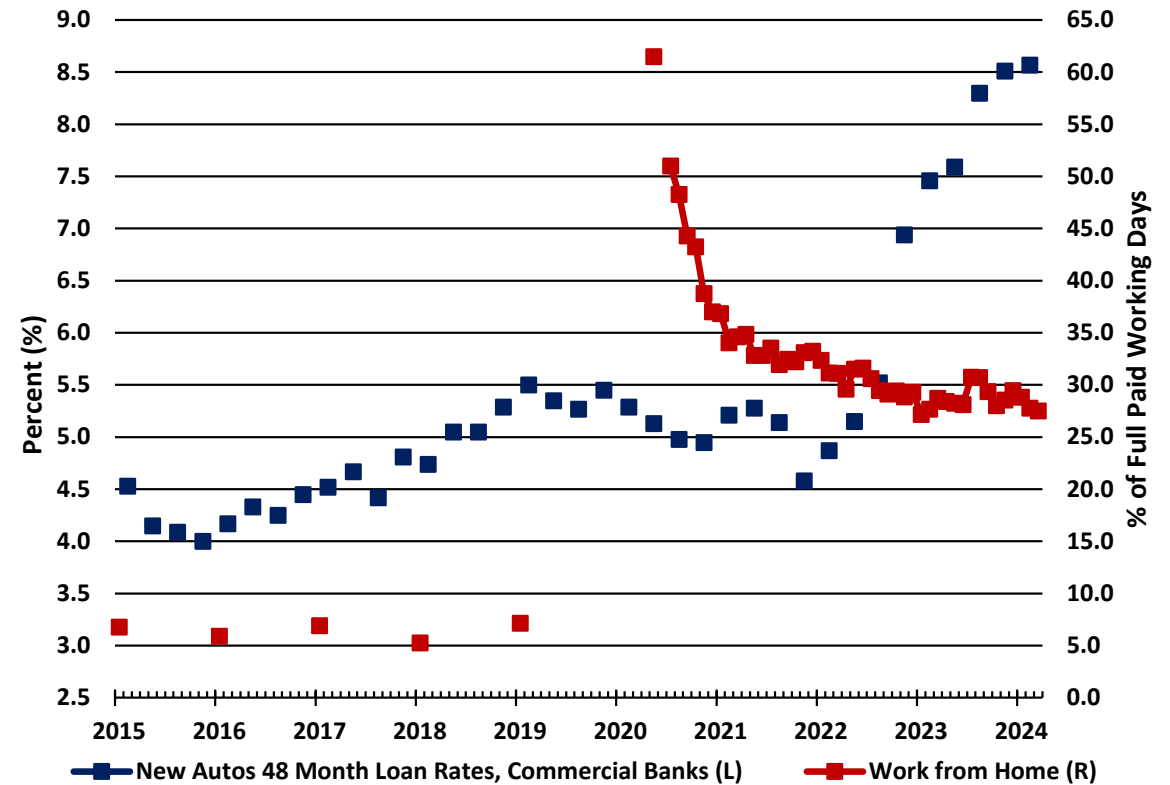


but expansionary fiscal policy, with widening deficit-to-GDP ratios.

Stronger Auto Sales Despite Headwinds

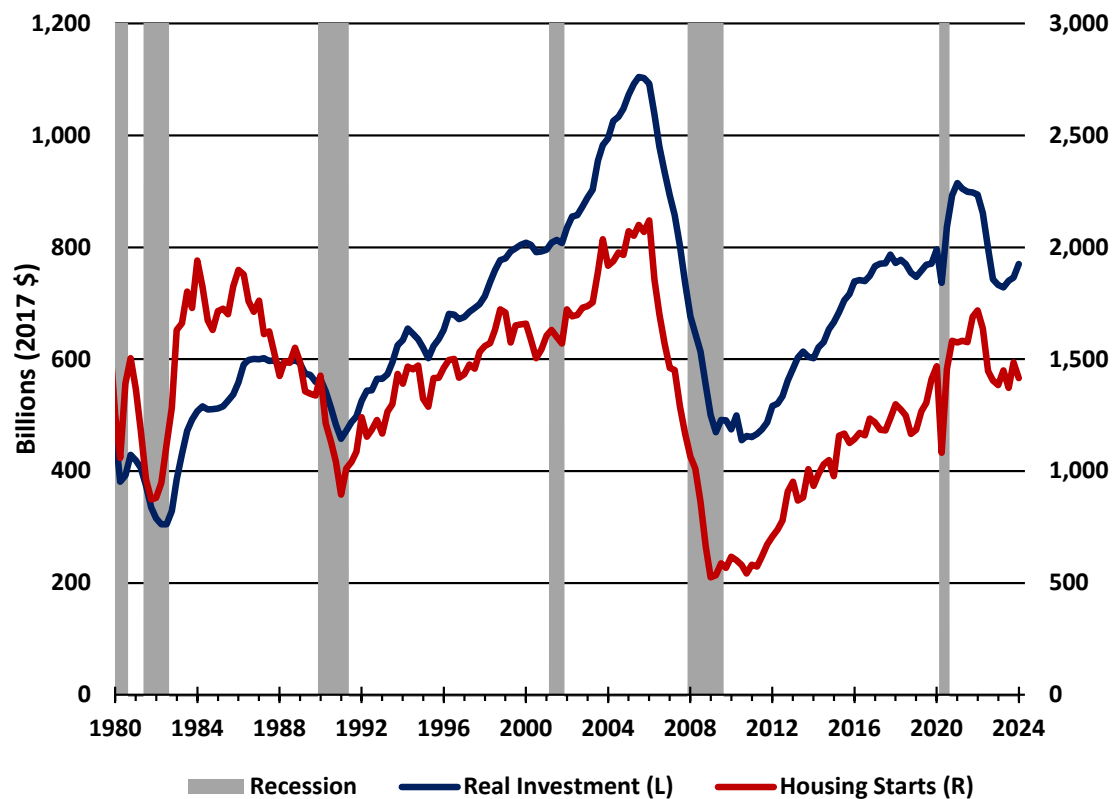


Rising supply and sales, with pent-up demand for vehicles...
(13.8 million sold in 2022 and 15.5 million sold in 2023)

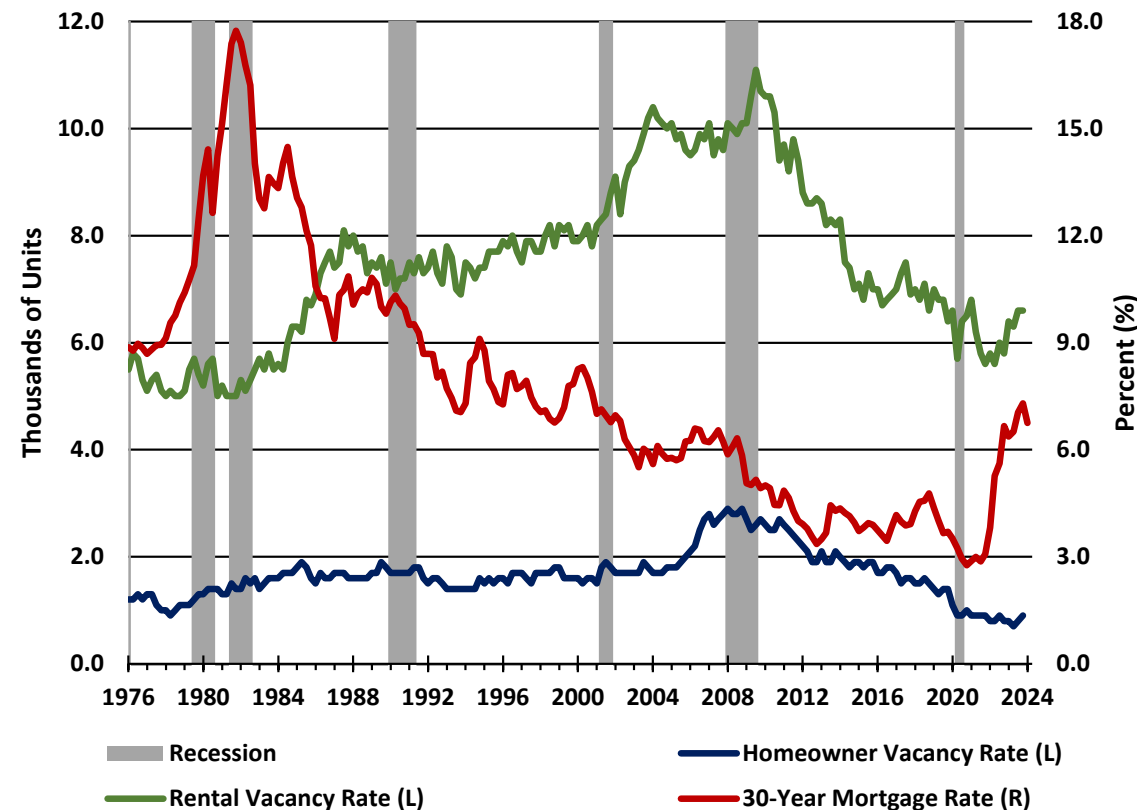


despite higher loan rates, less commuting, and potentially lower demand for vehicles.

Resilient Residential Investment

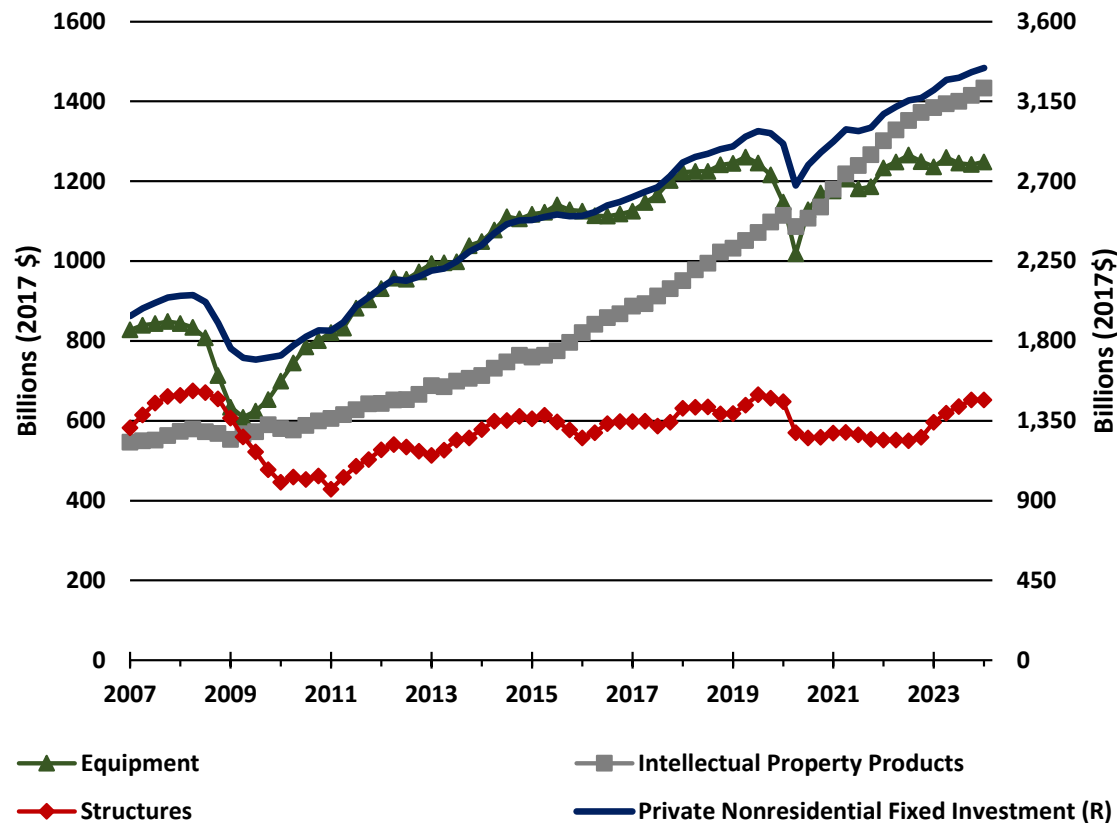


Weaker but substantial residential investment activity...

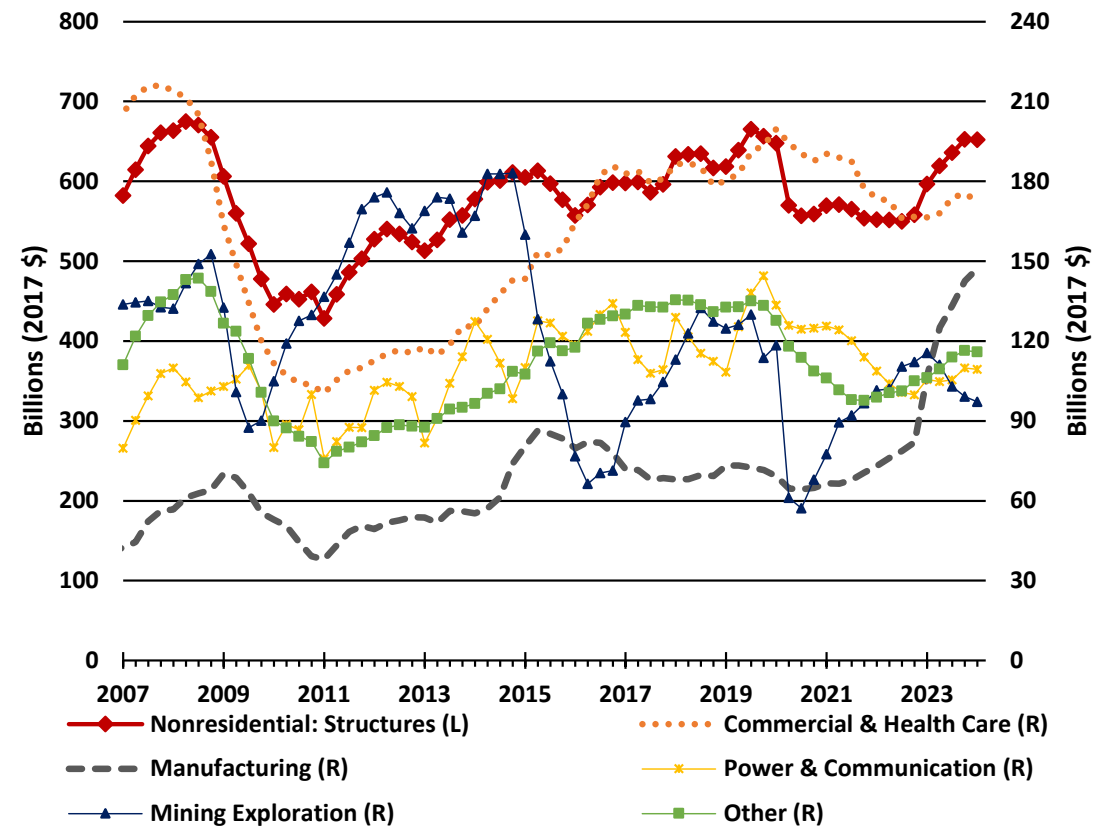


despite higher mortgage interest rates. Rising vacancy rates suggest easing of shortages.

Rising Private Nonresidential Fixed Investment

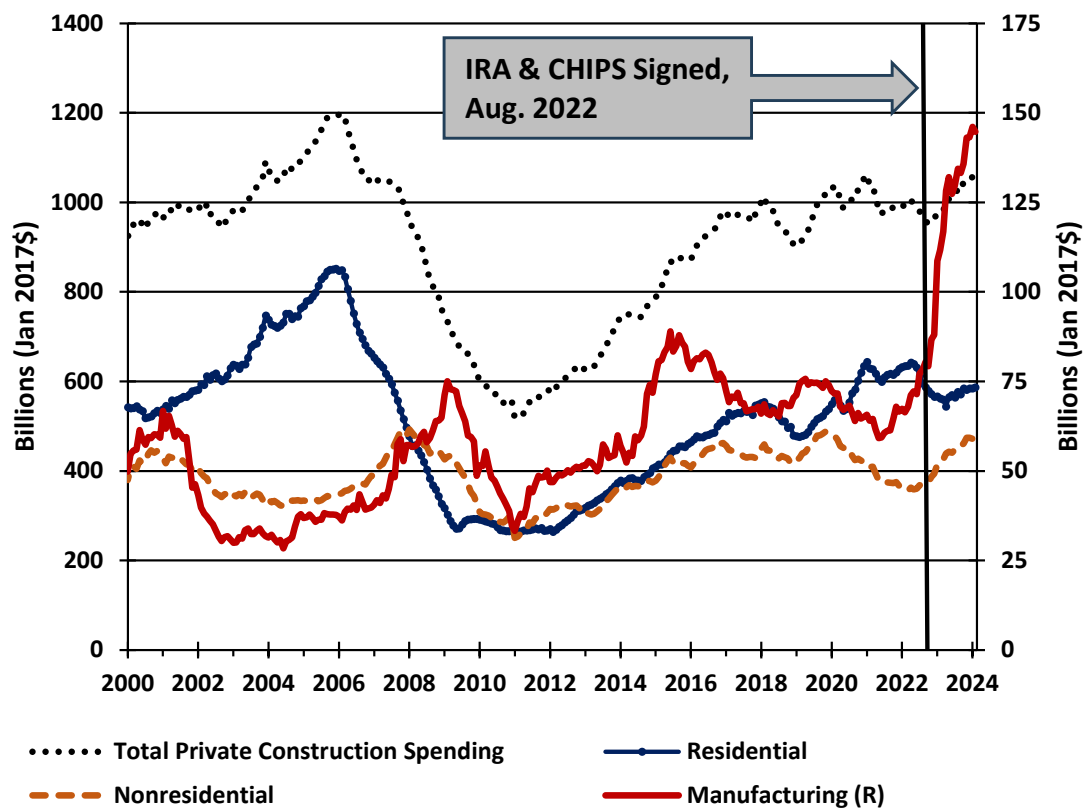


Recent spending for equipment has been flat, intellectual property rising slowly, construction rising substantially...



though spending for Private Nonresidential Construction is uneven. Oil and gas exploration weak, manufacturing strong.

Surging Investment in Manufacturing Facilities

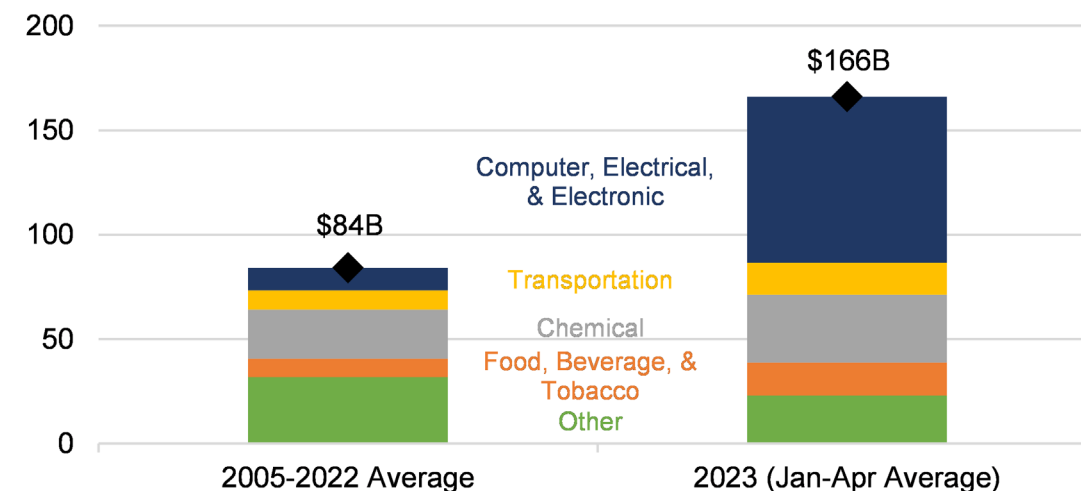


Federal funding and industrial policy boosting real manufacturing construction...

*Inflation Reduction Act (IRA) and Creating Helpful Incentives to Produce Semiconductors (CHIPS) Act

Figure 3: Real Manufacturing Construction Spending by Type

Billions of 2022 U.S. Dollars



Notes: Value of Private Construction Put in Place for Manufacturing, U.S. Census Bureau, decomposed by Detailed Type. Monthly at a seasonally adjusted, annualized rate. Nominal spending deflated by the Producer Price Index for Intermediate Demand Materials and Components for Construction, Bureau of Labor Statistics.

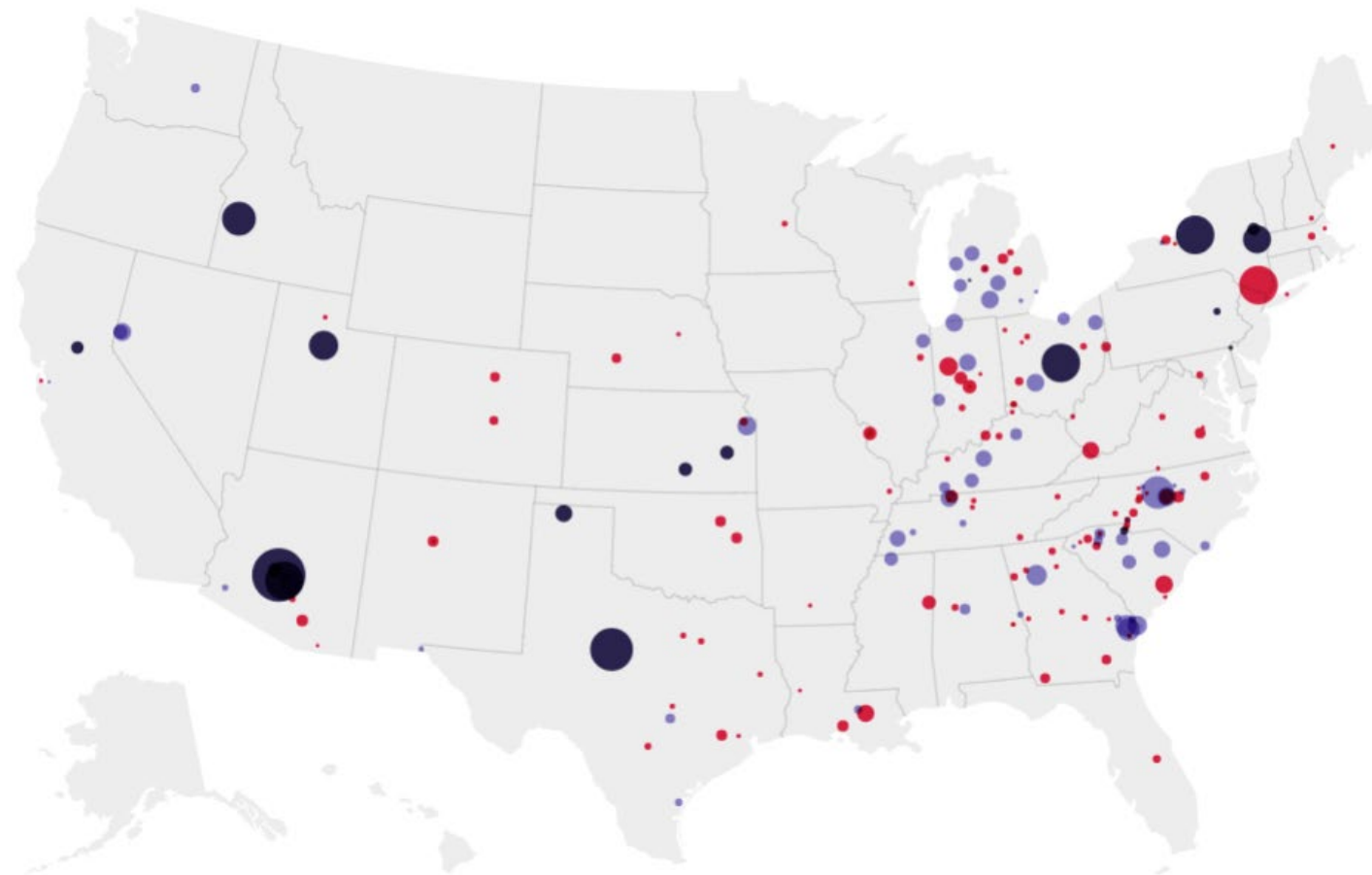
particularly for microchip fabrication plants.

Scattered Manufacturing Projects

Manufacturing construction surges across US

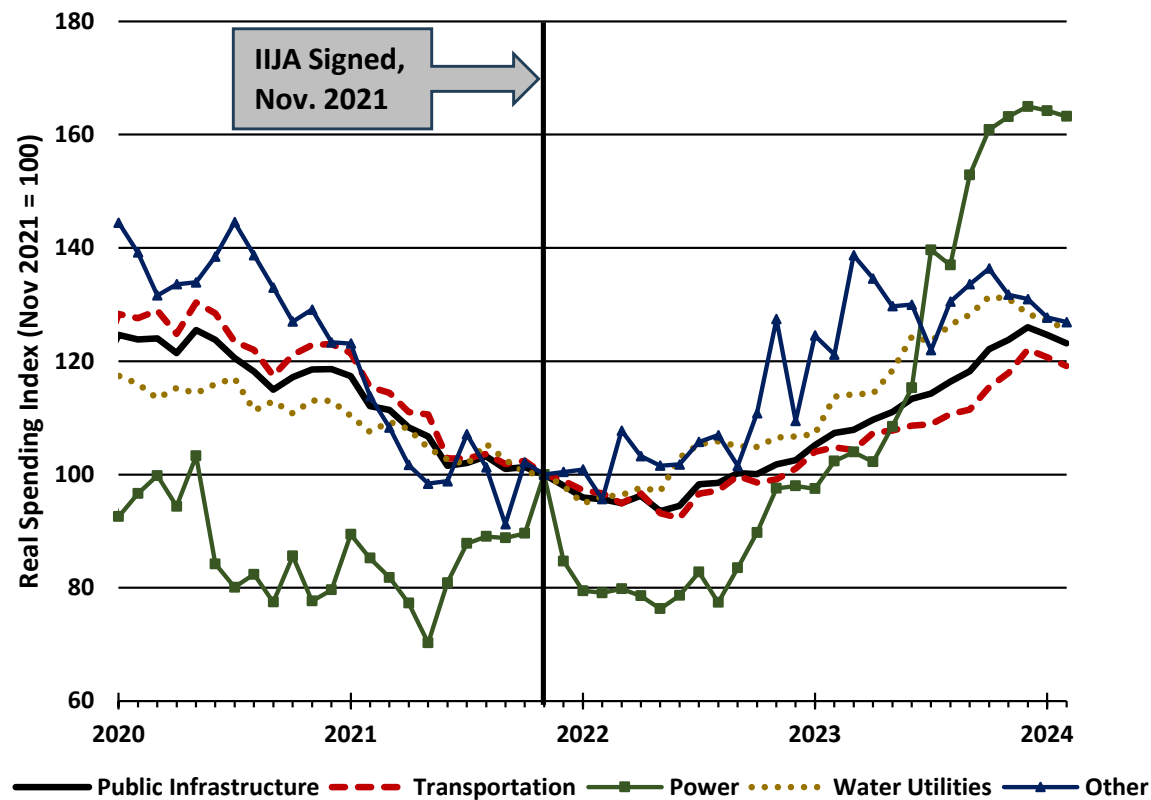
Top projects by value and location since August 2022

■ Semiconductor plant ■ EV plant ■ Manufacturing facility

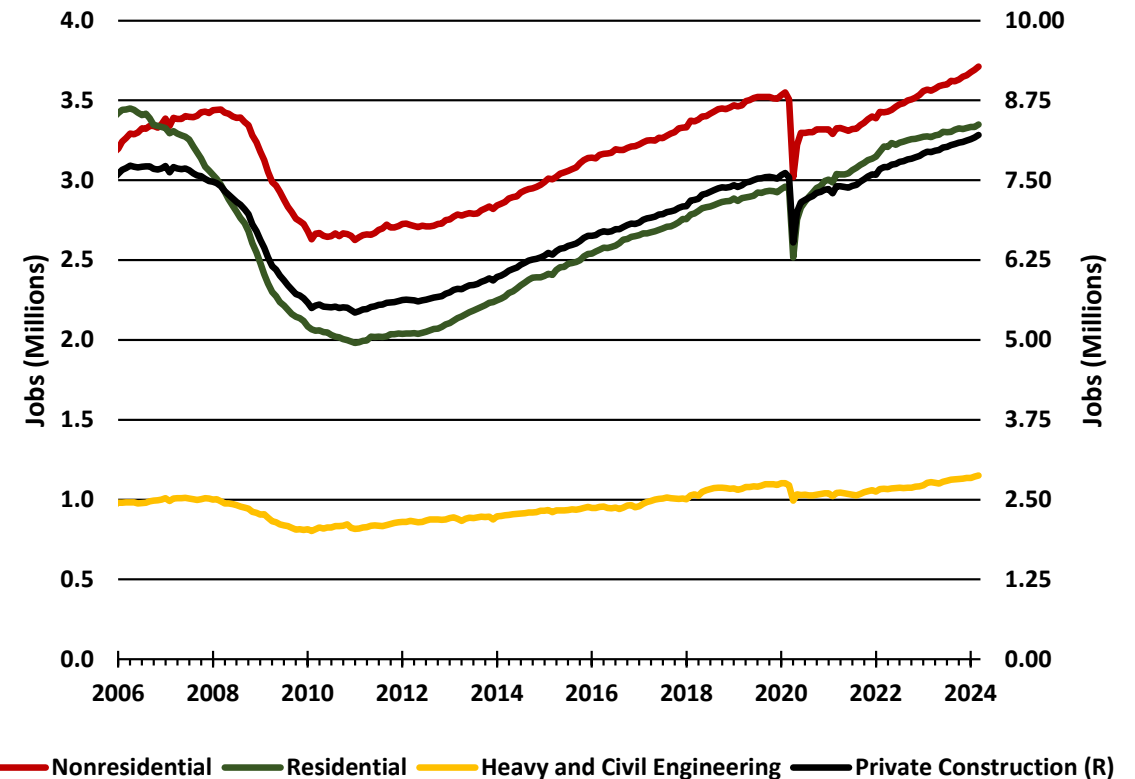


Map: Sebastian Obando/Construction Dive • Created with [Datawrapper](#)

Public Investment Also Boosting Employment



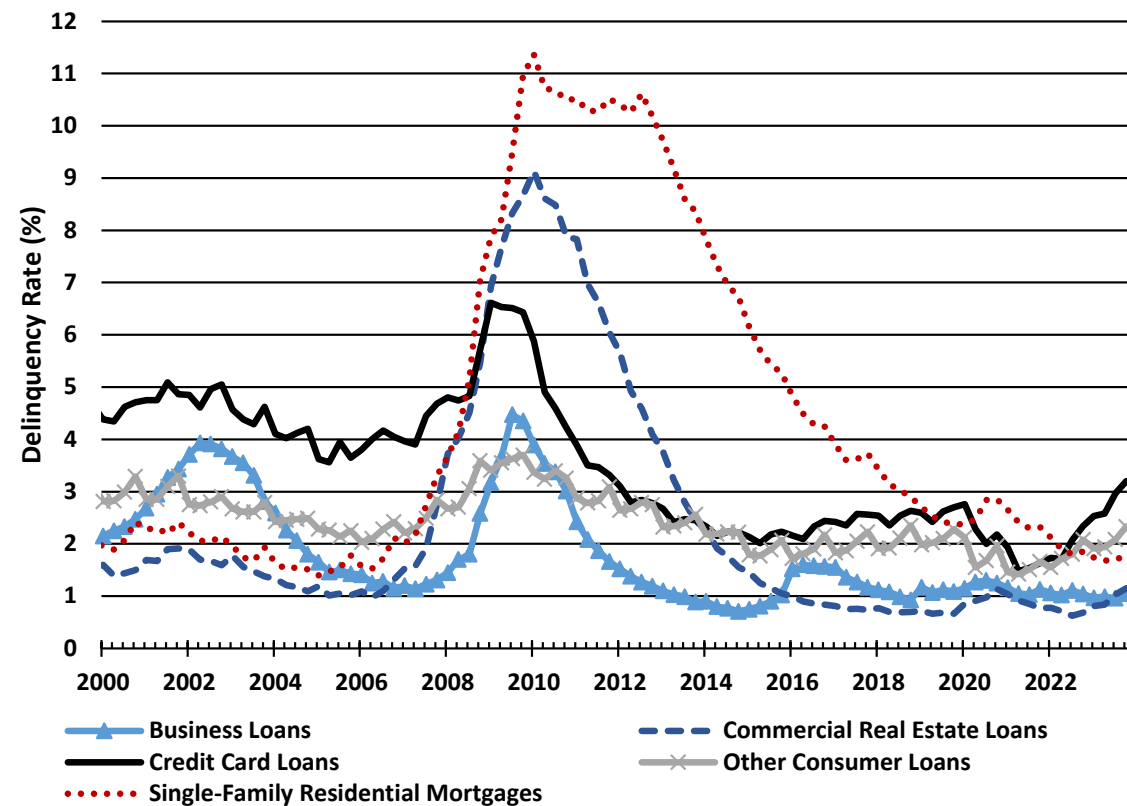
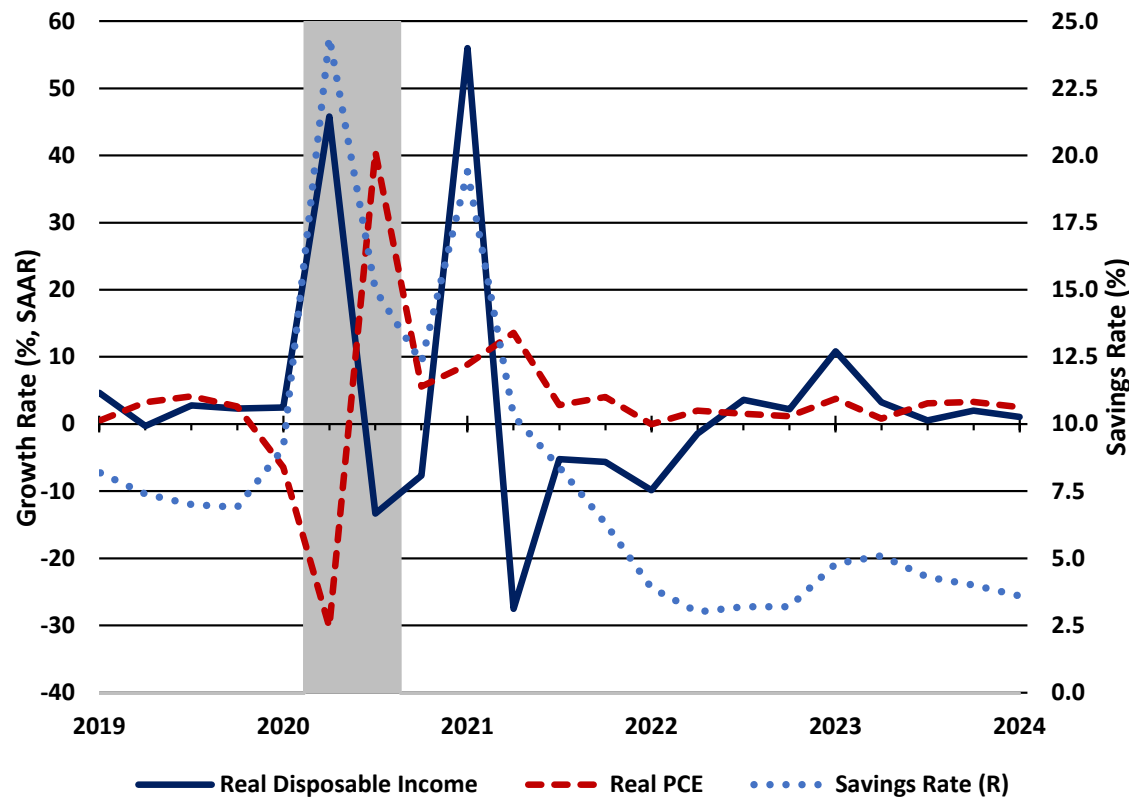
Federal funding is supporting public infrastructure improvements, including roads, water supply and wastewater, and other projects...



and supports greater private-sector construction jobs, plus U.S. Army Corps of Engineers and other government jobs.

*Infrastructure Investment & Jobs Act (IIJA)

Relatively Healthy Private Sector(?)

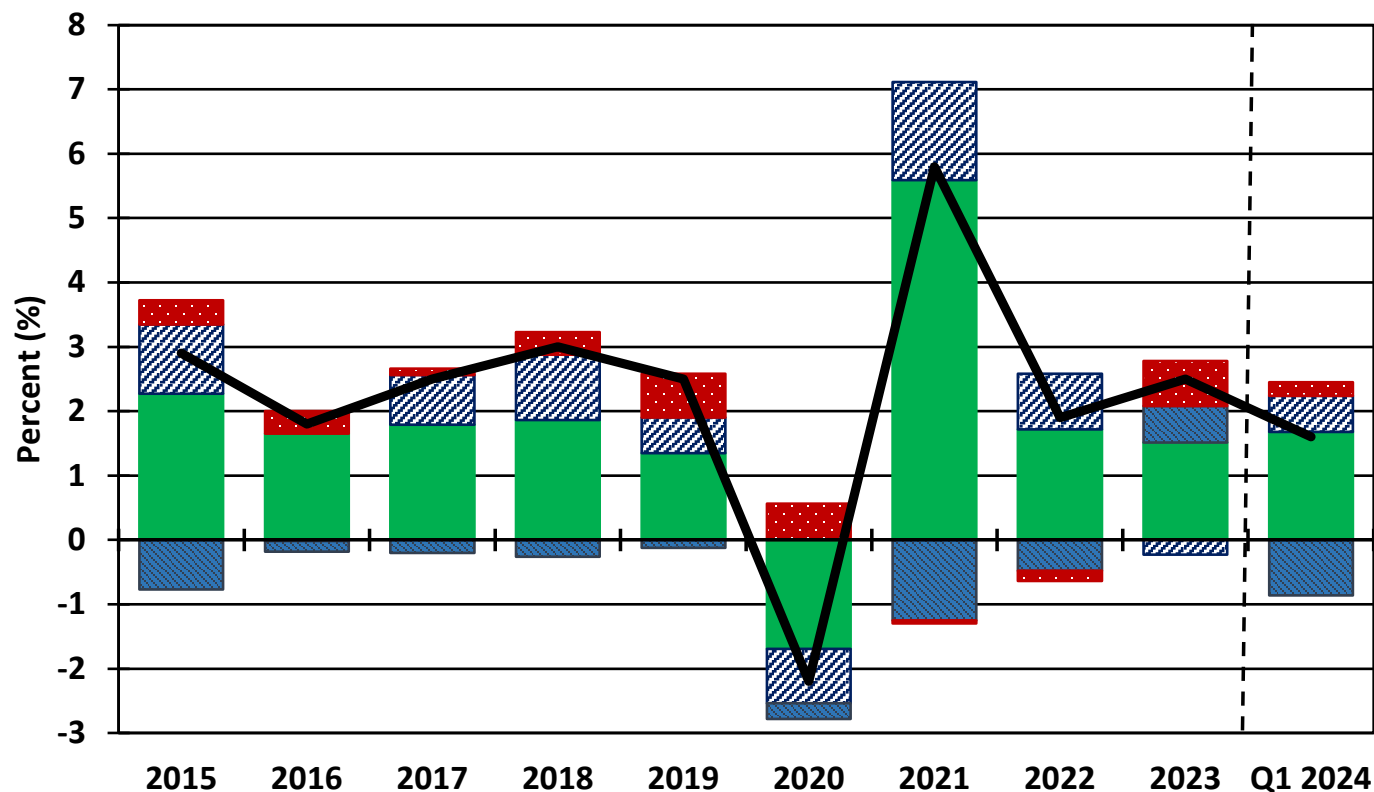


Relatively sound household budgets,

- Moderately strong real income and spending
- but low savings rates.

- Low mortgage and business loan default rates
- Rising consumer loan defaults
- Commercial Real Estate and other vulnerabilities.

Resilient Demand Supported Growth



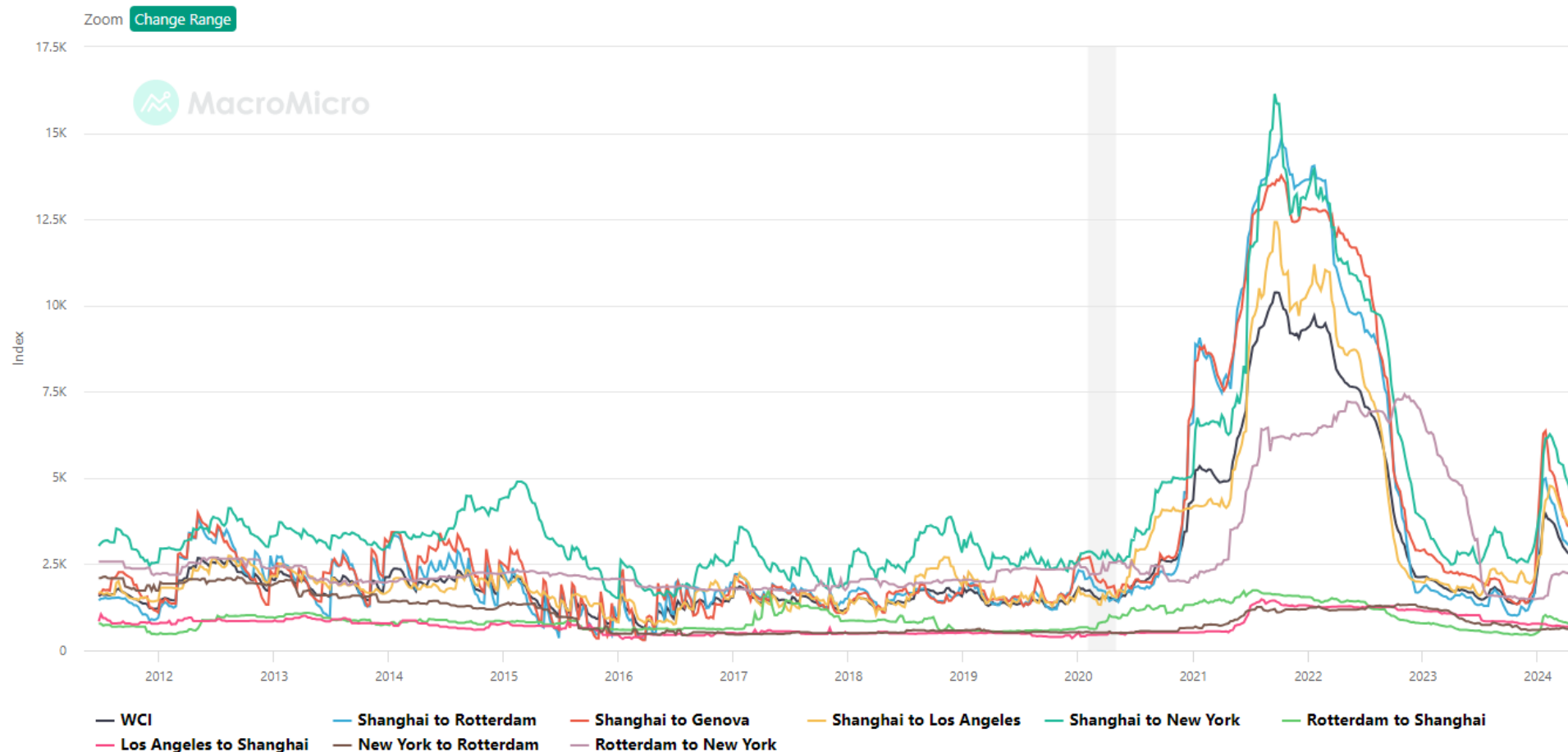
Contributions to Growth	2023	Q1 2024
GDP Growth	2.5	1.6
PCE	1.5	1.7
Private Investment	-0.2	0.6
Government	0.7	0.2
Net Exports	0.6	-0.9

■ Government Consumption & Investment ▨ Net Exports
▨ Gross Private Domestic Investment ■ Personal Consumption Expenditures
— Gross Domestic Product

Logistical Difficulties Improving

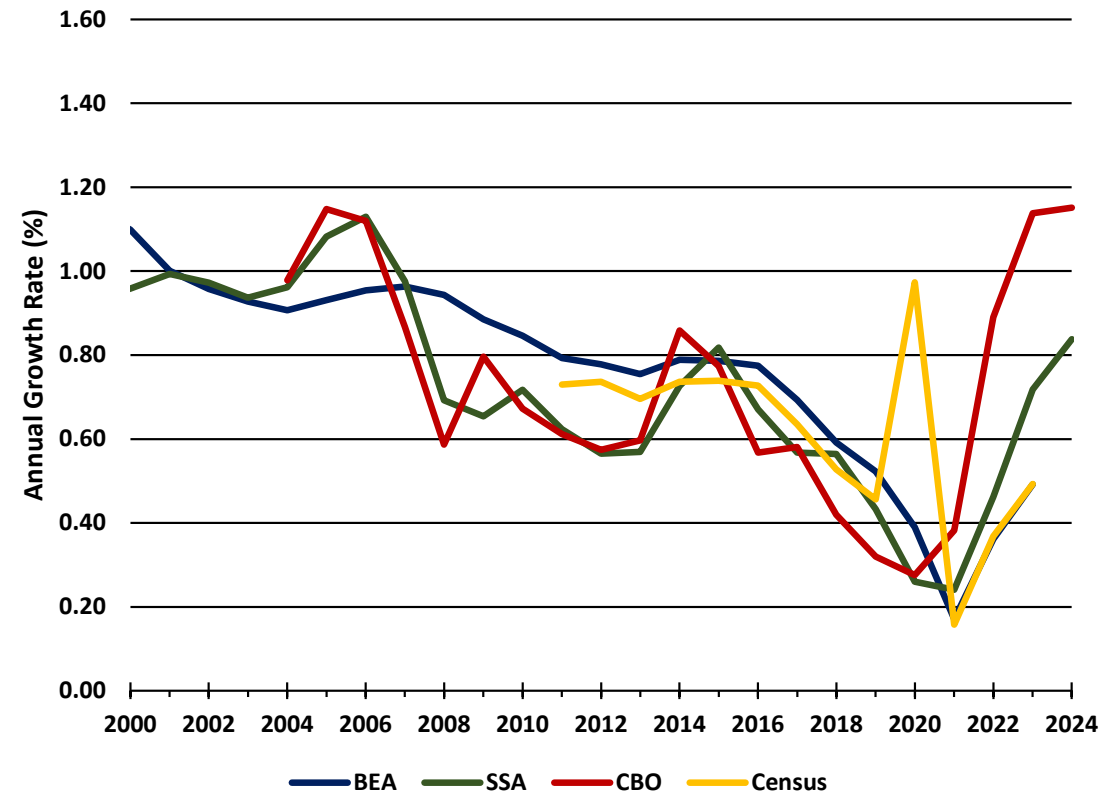
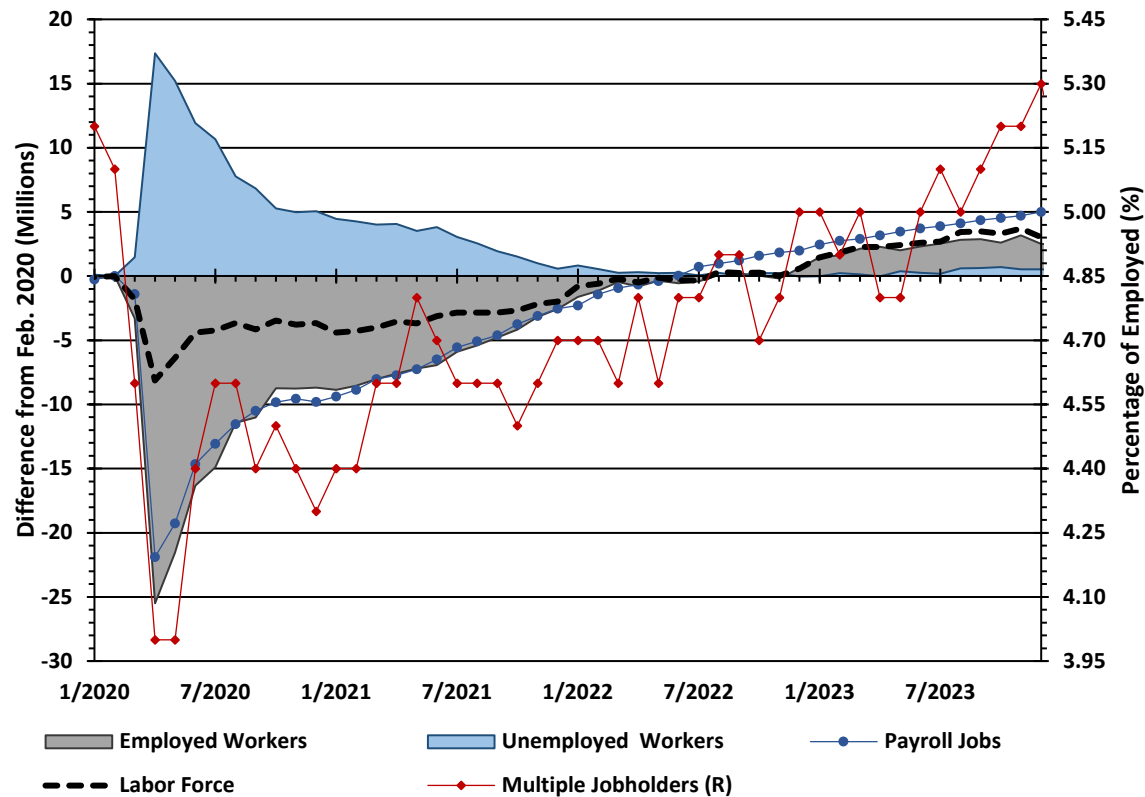
World - Drewry World Container Index [WCI]

MacroMicro.me | MacroMicro



Container freight rates (US\$/40ft container) surged following COVID and Red Sea turmoil, but generally improving.

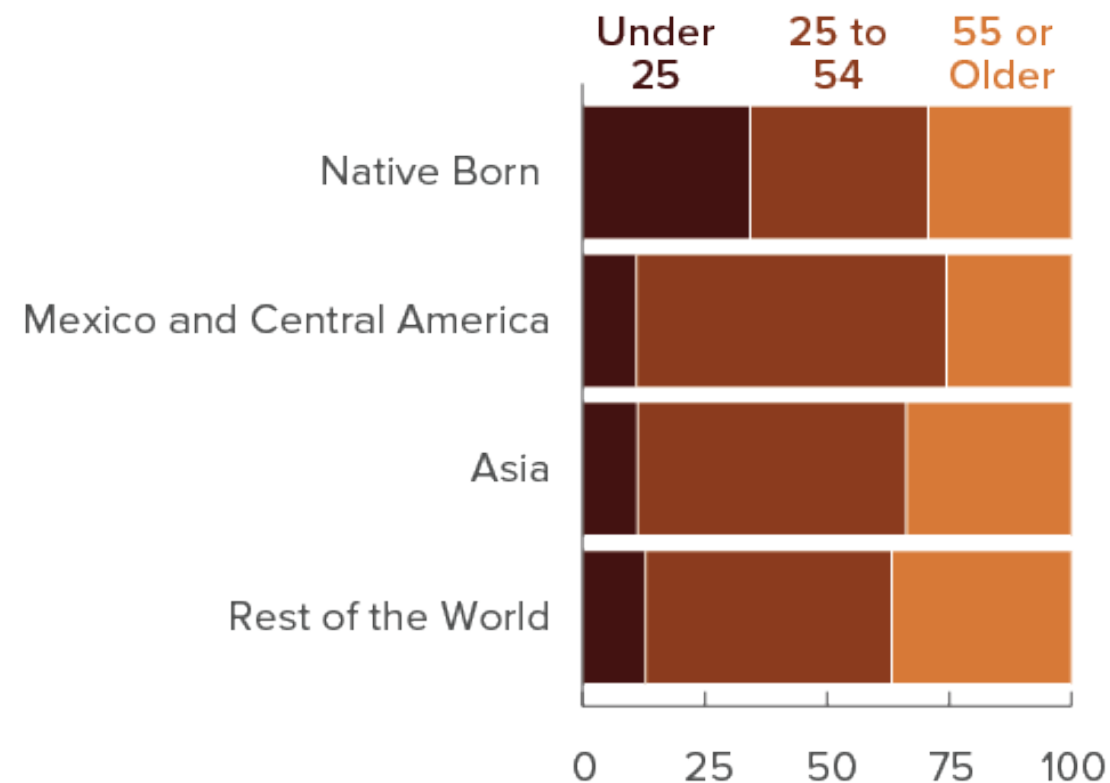
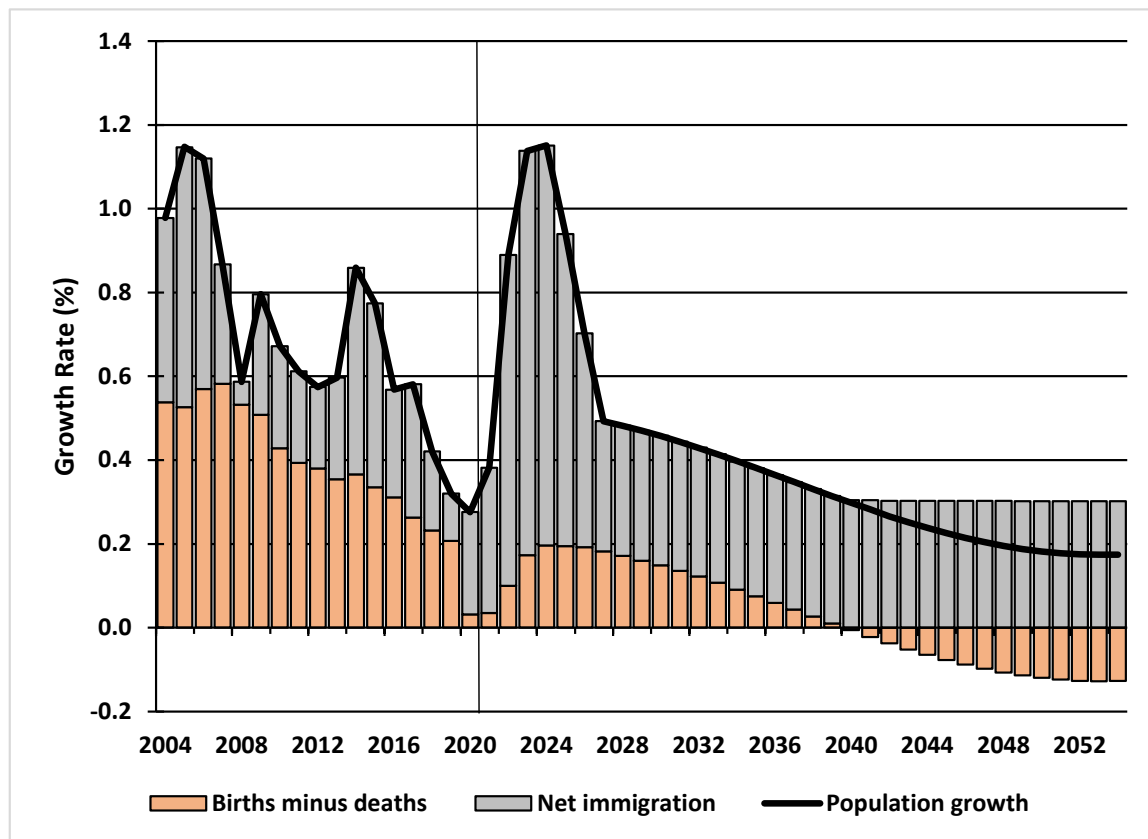
Labor Markets Boosting Supply



Strong payroll job gains continue to outpace household employment gains (workers) due to multiple-job holdings...

and perhaps disparities in recent population estimates used to establish household employment levels.

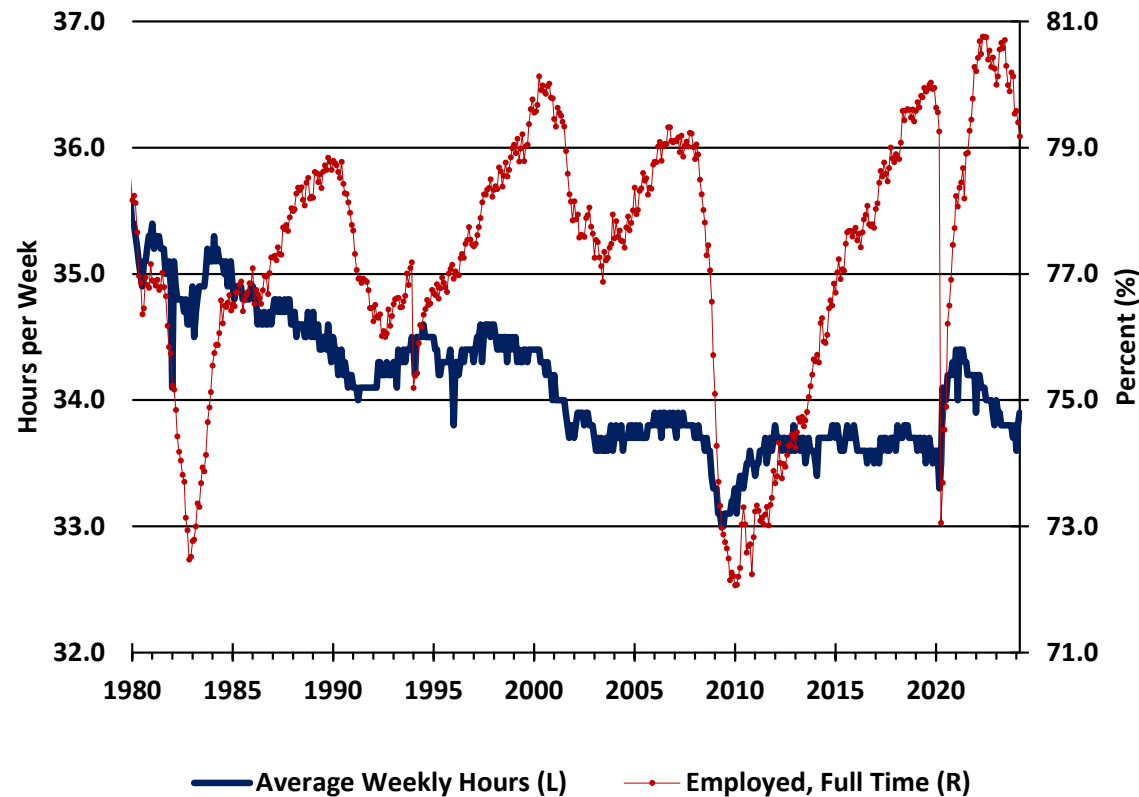
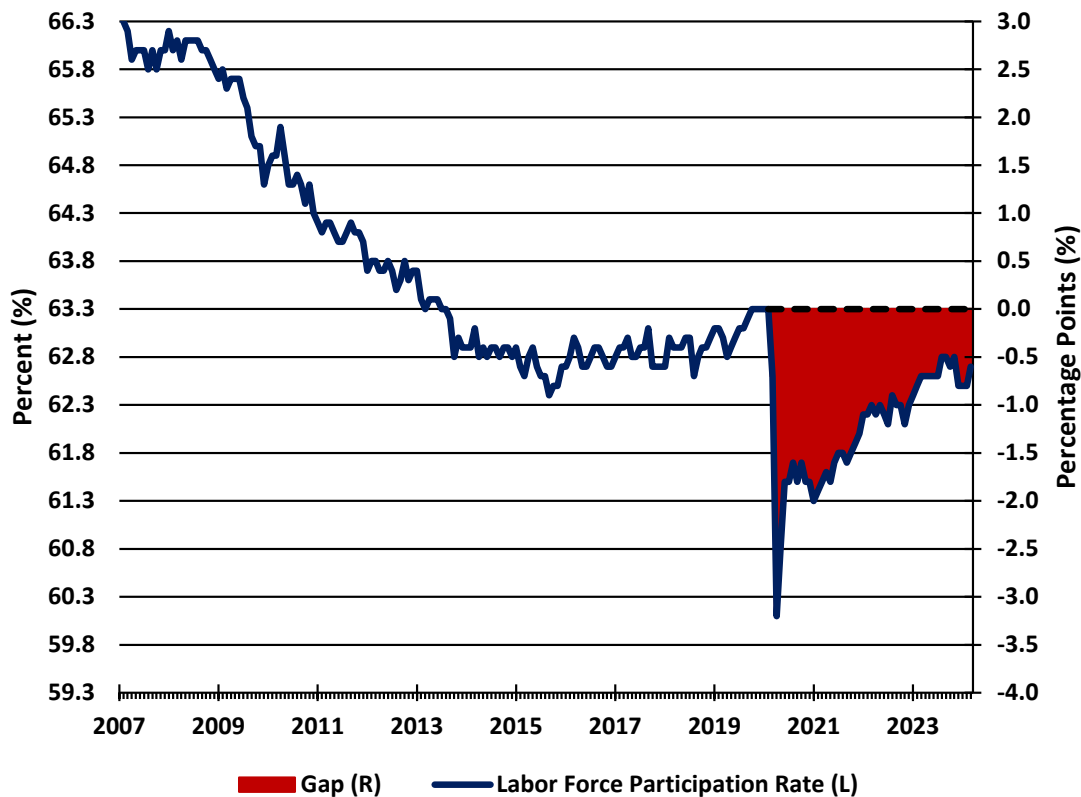
Immigration Boosting Labor Supply



Recent surge in population growth (CBO) mainly due to higher immigration...

with immigrants much more likely to be of prime working ages and potentially to enter the labor force.

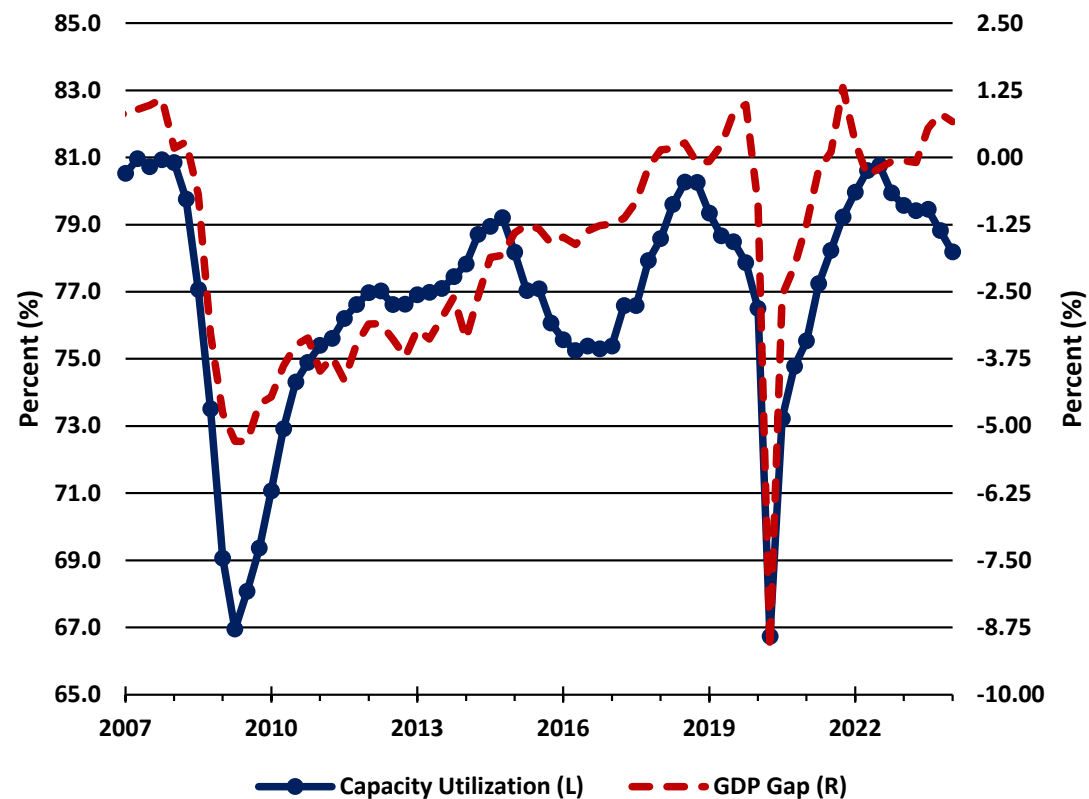
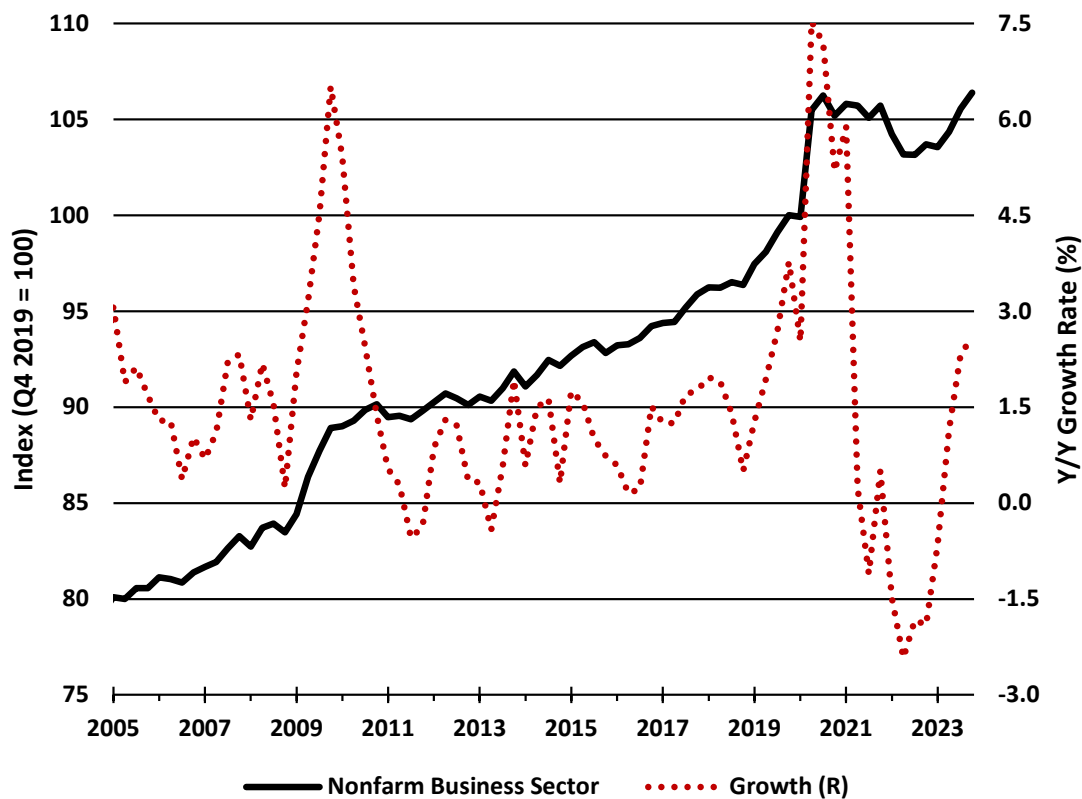
Additional Contributions of Labor



Labor force participation improved but remains lower, though some decline was anticipated due to aging.

Large numbers are employed full time. The average workweek is healthy relative to post-2000 norms.

Productivity and Utilization Supporting GDP



Labor productivity seeing strong gains following sluggishness and recent volatility.

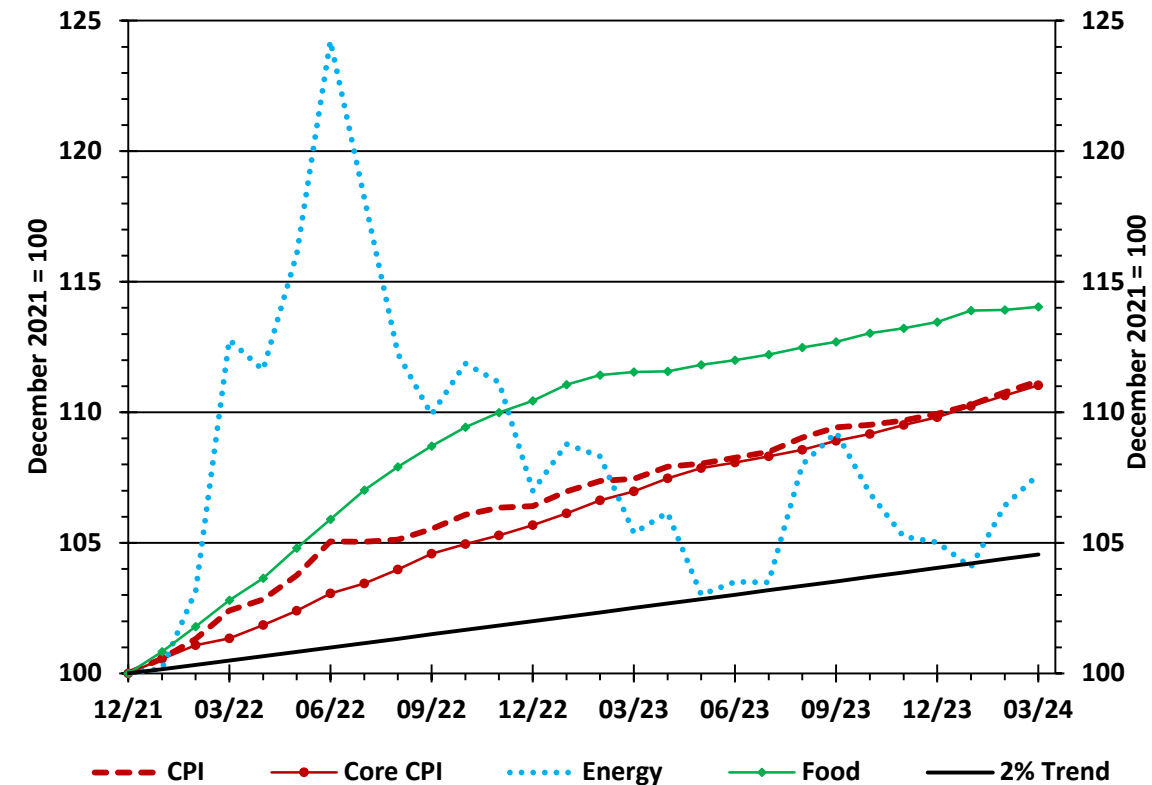
- Utilization rates slipping but high (mfg, mining, utilities)
- Resilient demand and supply
- No recession, and GDP running ahead of potential.

Sectoral Developments Since COVID

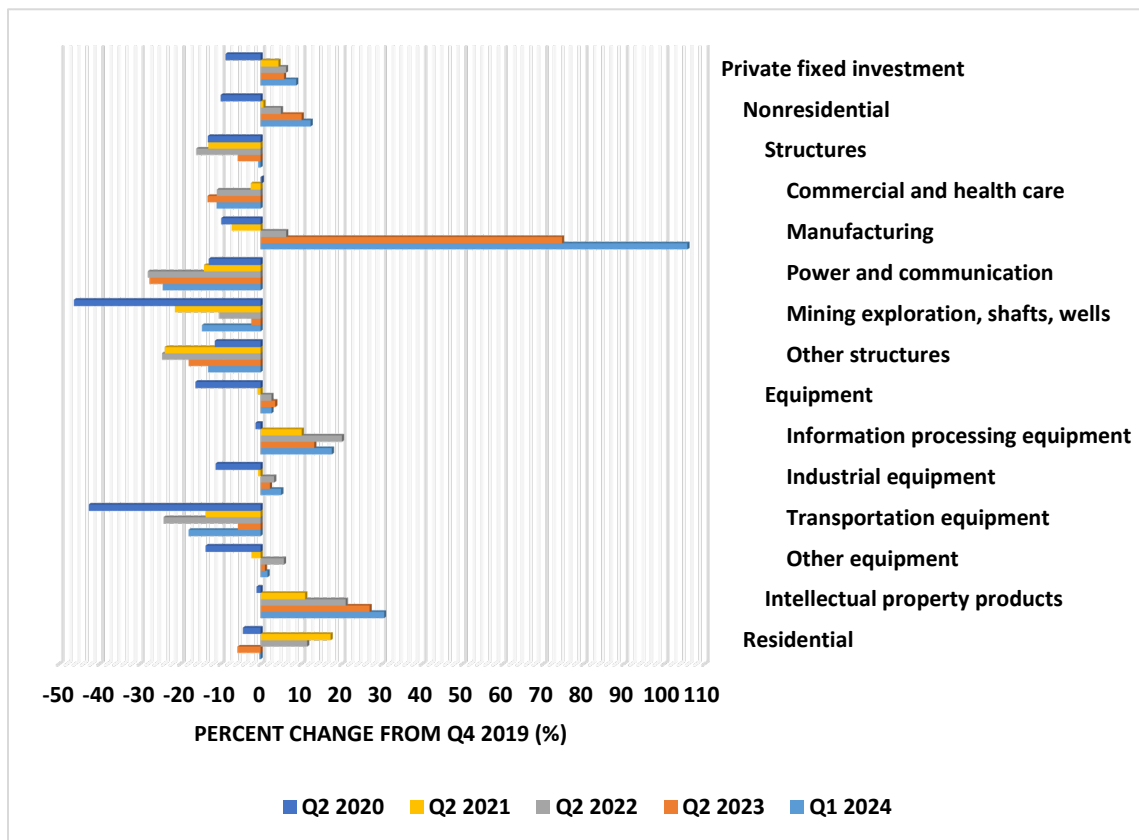
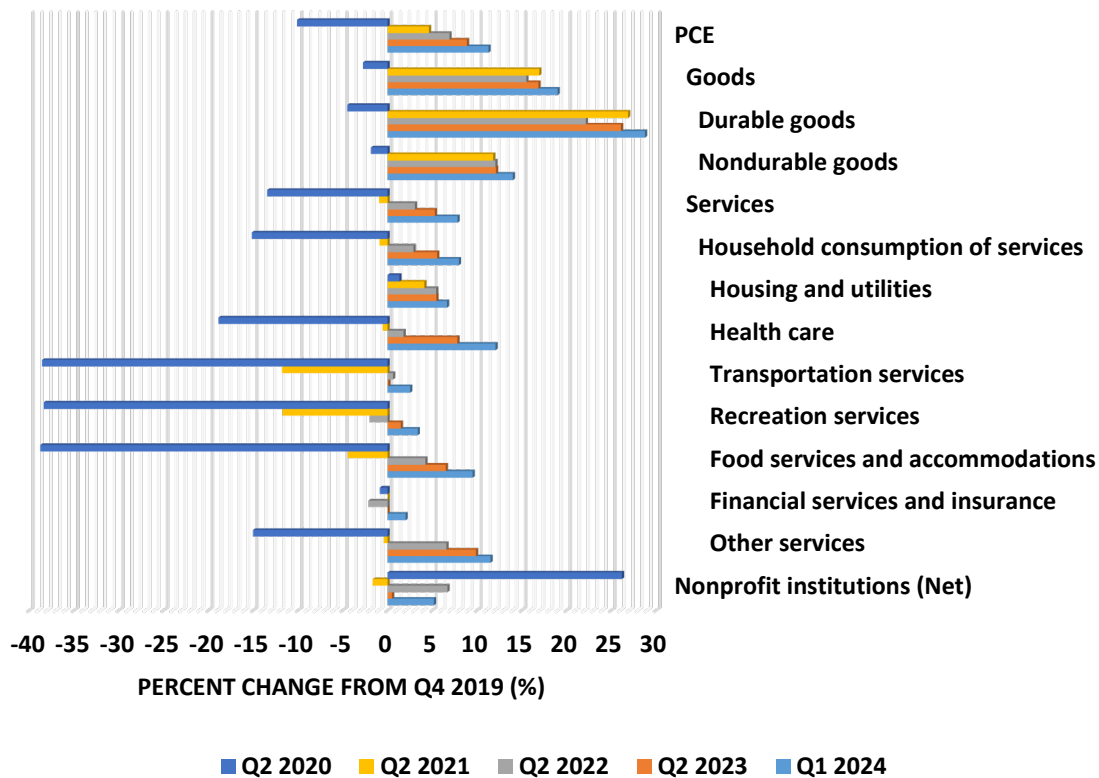
- Consumption Price Dynamics
- Demand
 - Personal Consumption Expenditure
 - Investment
 - Government Consumption and Investment
- Supply
 - Employment
- International Markets

Inflation Subsiding but Unevenly

	PCE	Core PCE	CPI	Core CPI	Energy	Food
Dec 19-Dec 20 [§]	1.4	1.6	1.3	1.6	-7.2	3.9
Dec 20-Dec 21 [§]	6.2	5.2	7.2	5.5	30.1	6.3
Dec 21-Dec 22 [§]	5.4	4.9	6.4	5.7	7.0	10.4
Dec 21-Jun 22 [*]	7.7	5.2	10.4	6.2	54.3	12.2
Jun 22-Dec 22 [*]	3.2	4.5	2.6	5.1	-25.8	8.7
Jan 23-Dec 23 [§]	2.6	2.9	3.3	3.9	-1.8	2.7
Jan 24-Mar 24 [*]	4.4	4.4	4.6	4.5	10.3	2.1
[§] 12-Month Growth Rates [*] Annualized Growth Rates						



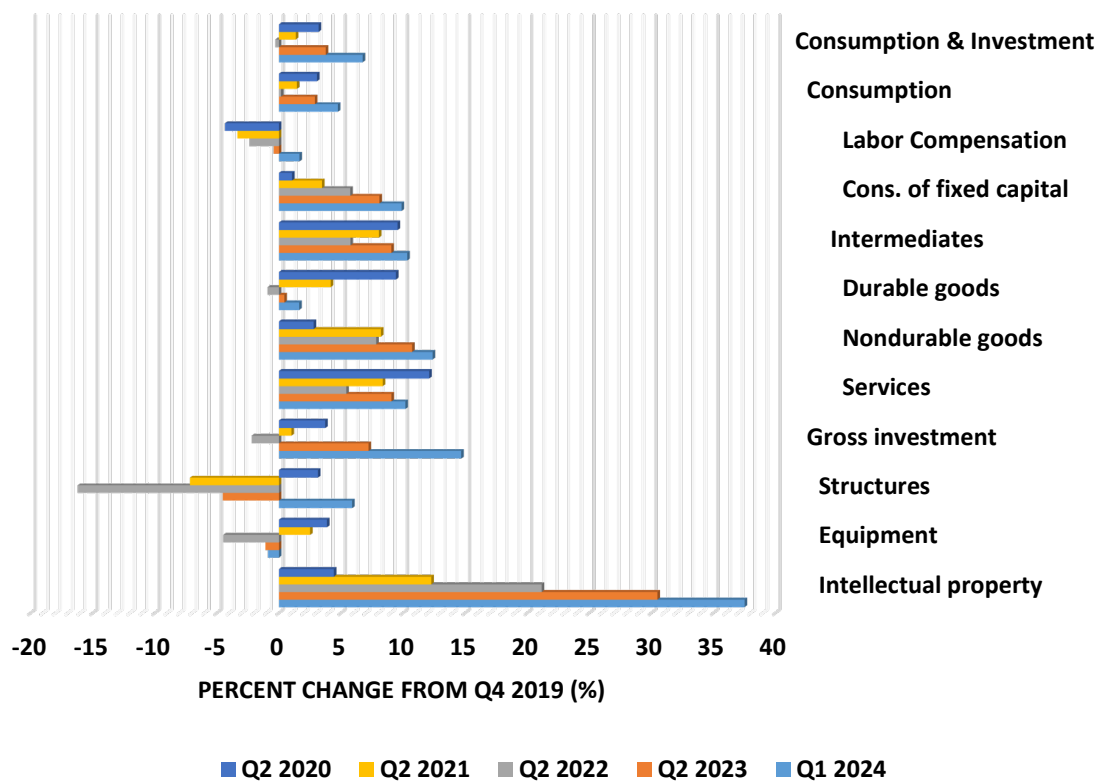
Uneven Recovery in Private Spending



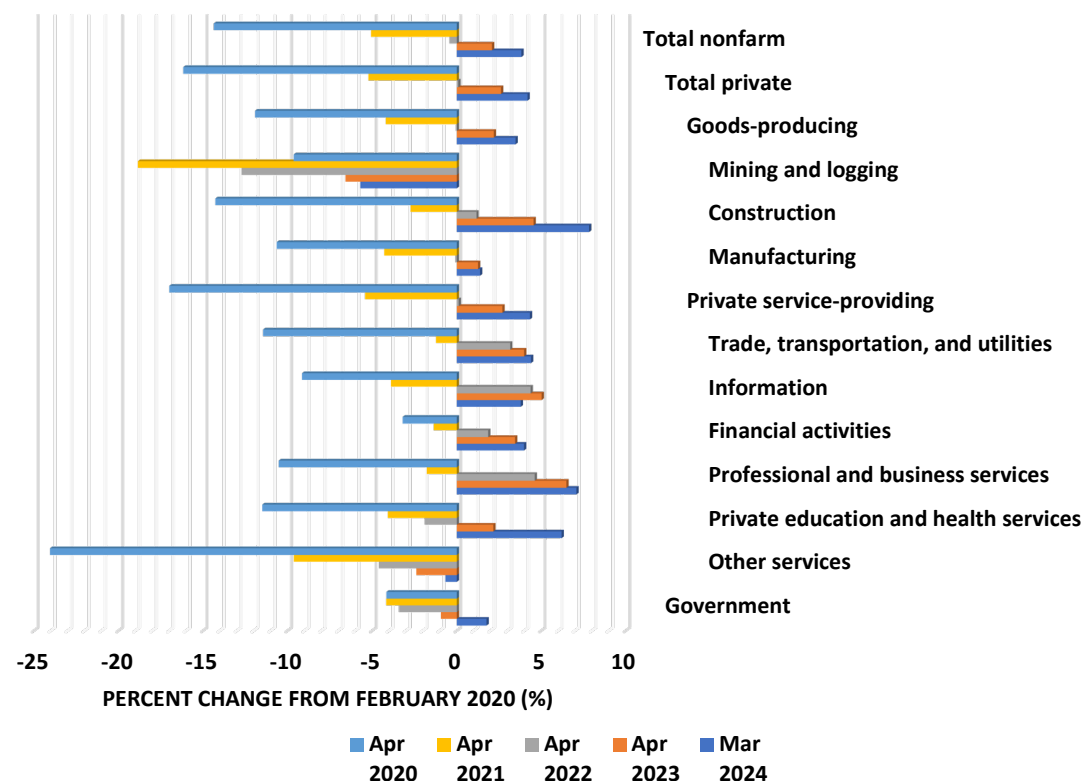
- Spending on goods remains strong
- Spending on services continues to recover

Solid growth in Intellectual Property; weakening growth for Equipment; improving nonresidential structures; stabilizing residential construction.

Gains in Public Spending, Payroll Jobs

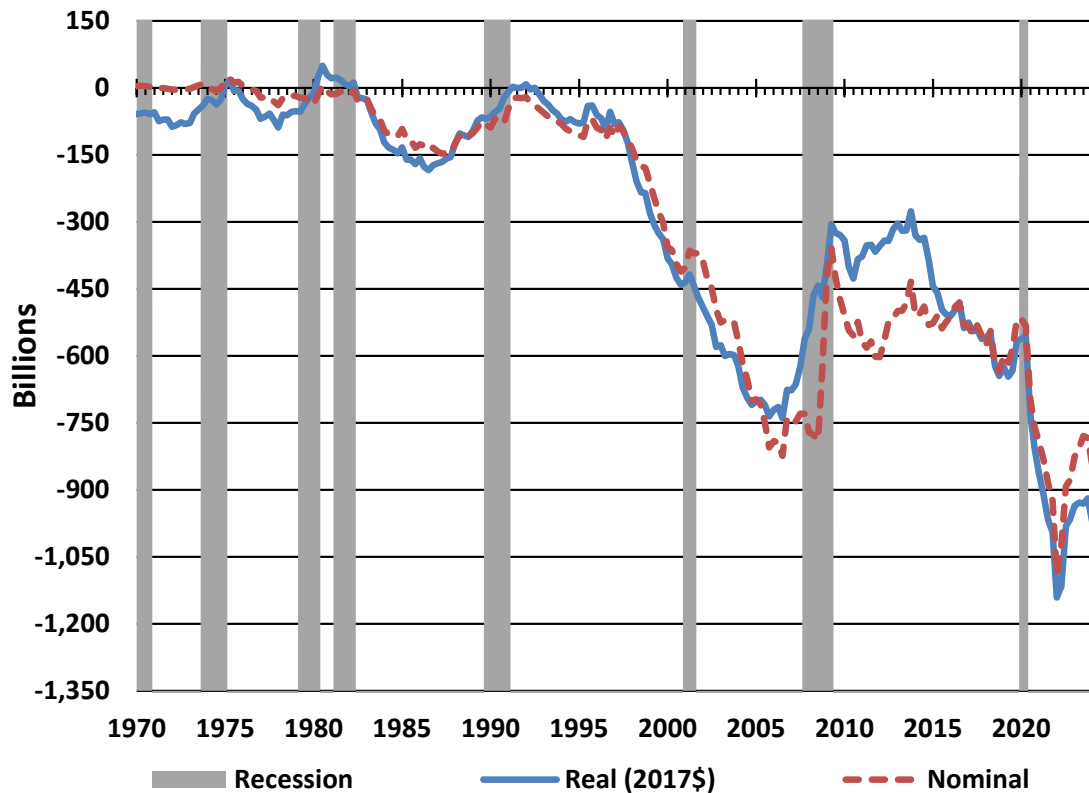


Government spending led by investment in software and R&D, with equipment investment trailing and structures gaining.

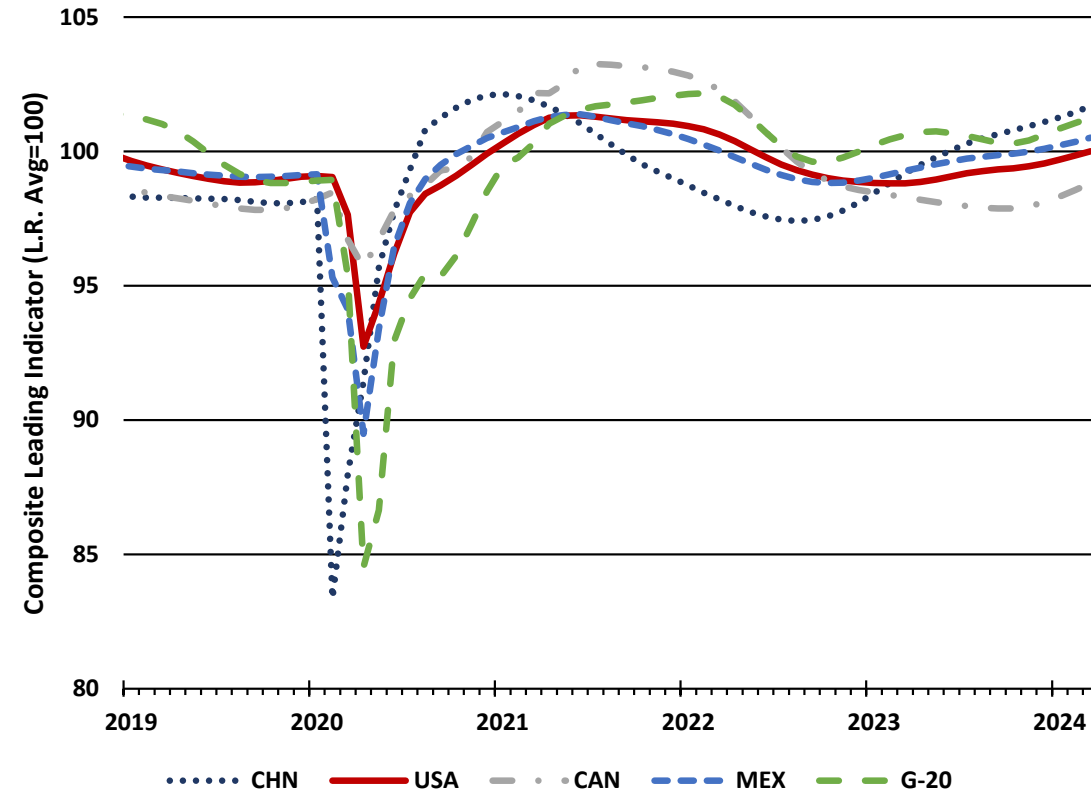


Payroll employment recovered for nearly all major industries, with Construction leading and Other Services trailing.

Trade Gap Wide, Global Improvement



Trade gap peaked in Q1 2022, widened in Q1 2024. Strong U.S. economy supports imports demand.



OECD leading indicators neutral for U.S., mixed for North America, positive for G20. Stronger world growth could support stronger U.S. exports.

The Outlook

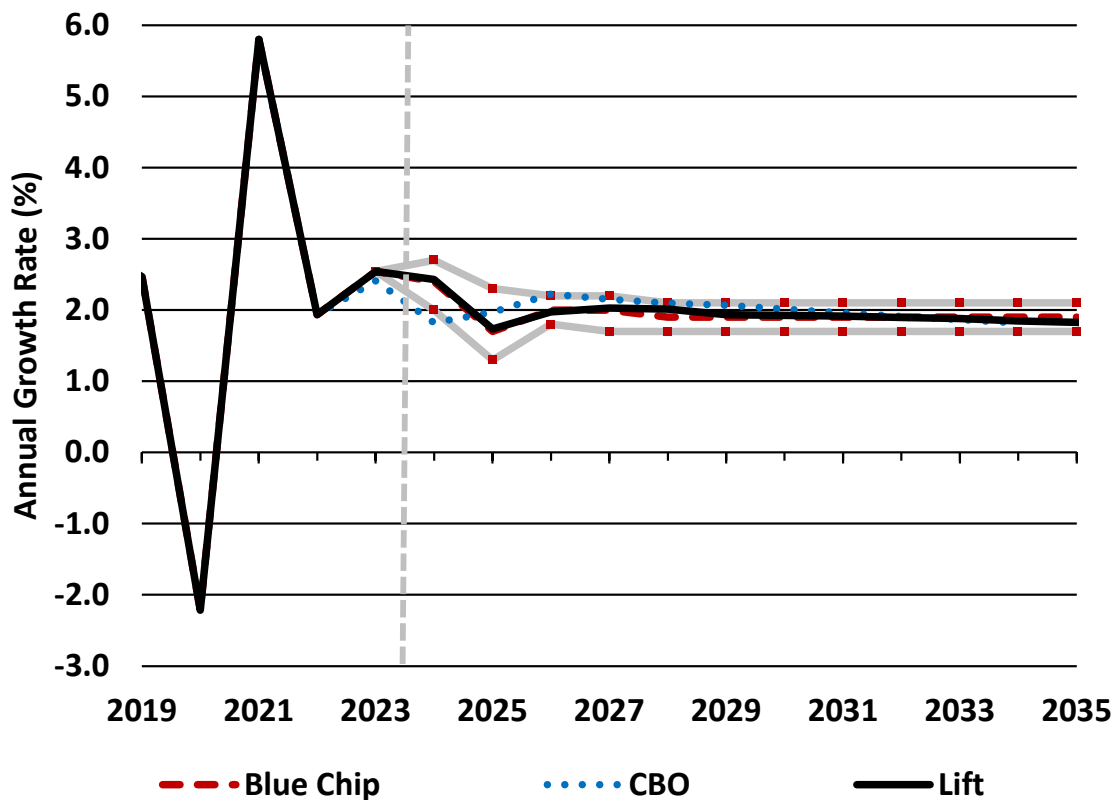
- International Outlook (IMF, April 2024)
- U.S. 10-Year Outlook
 - Lift Forecast (Preliminary Spring 2024)
 - Consensus Forecast and Distribution (March and April 2024)
 - CBO Forecast (February 2024)
- Lift U.S. Outlook to 2050
 - Real Economy
 - Labor, Prices, and Financial Details
 - Labor Supply, Productivity, and Employment

IMF: Moderate Growth, Lower Inflation

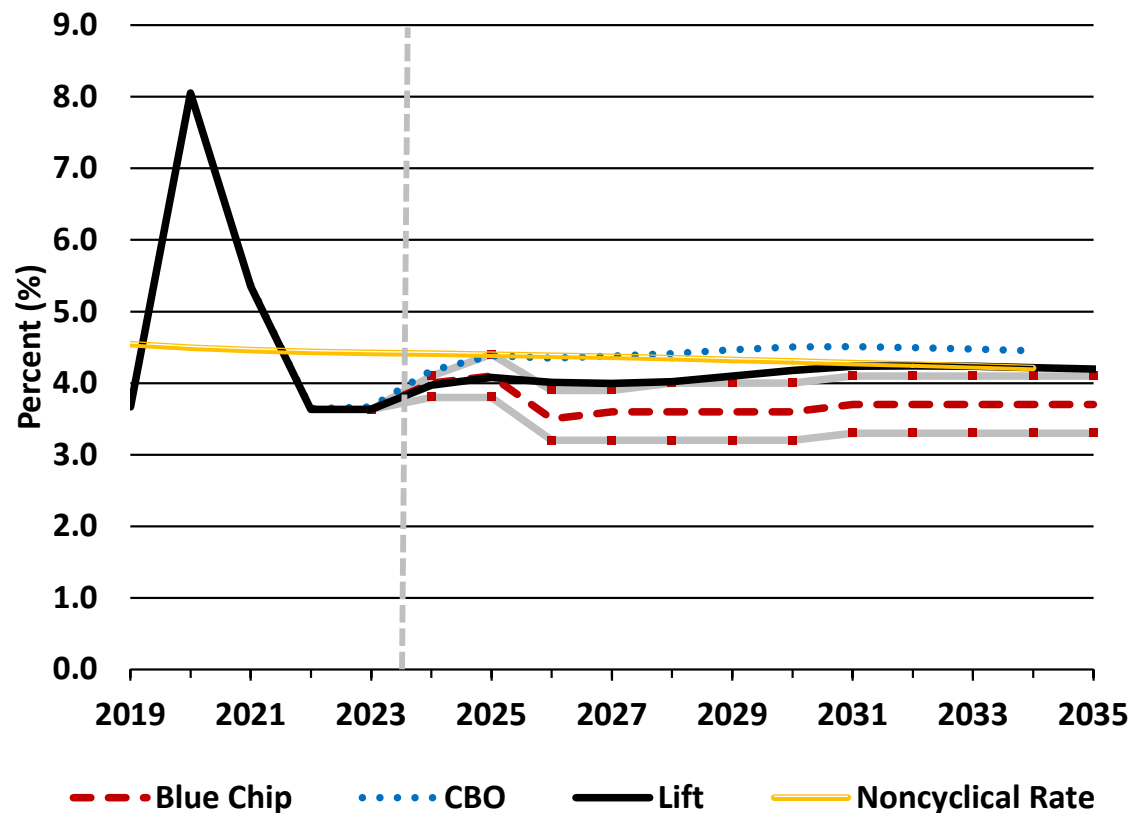
GDP Annual Growth	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
World	2.8	-2.7	6.5	3.5	3.2	3.2	3.2	3.2	3.1	3.1	3.1
Advanced economies	1.8	-3.9	5.7	2.6	1.6	1.7	1.8	1.8	1.7	1.7	1.7
Euro area	1.6	-6.1	5.9	3.4	0.4	0.8	1.5	1.4	1.3	1.3	1.2
Major advanced economies (G7)	1.7	-4.1	5.5	2.2	1.7	1.7	1.6	1.6	1.6	1.6	1.6
Other advanced economies	1.9	-1.7	5.8	2.7	1.8	2.0	2.4	2.2	2.2	2.2	2.1
Emerging market & developing economies	3.6	-1.8	7.0	4.1	4.3	4.2	4.2	4.1	4.0	3.9	3.9
Canada	1.9	-5.0	5.3	3.8	1.1	1.2	2.3	1.9	1.7	1.7	1.7
Mexico	3.6	3.4	5.7	7.9	5.5	4.0	3.3	3.0	3.0	3.0	3.0
United States	2.5	-2.2	5.8	1.9	2.5	2.7	1.9	2.0	2.1	2.1	2.1
China	6.0	2.2	8.5	3.0	5.2	4.6	4.1	3.8	3.6	3.4	3.3

PCE Inflation	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
World	3.5	3.2	4.7	8.7	6.8	5.9	4.5	3.7	3.5	3.4	3.4
Advanced economies	1.4	0.7	3.1	7.3	4.6	2.6	2.0	2.0	2.0	2.0	2.0
Euro area	1.2	0.3	2.6	8.4	5.4	2.4	2.1	2.0	1.9	1.9	1.9
Major advanced economies (G7)	1.5	0.8	3.3	7.3	4.7	2.6	2.0	2.0	2.0	2.0	2.1
Other advanced economies	1.1	0.5	2.4	5.6	4.2	2.5	2.1	2.0	2.0	2.0	2.0
Emerging market & developing economies	5.1	5.2	5.9	9.8	8.3	8.3	6.2	4.9	4.4	4.3	4.2
Canada	1.9	0.7	3.4	6.8	3.9	2.6	1.9	1.9	1.9	1.9	2.0
Mexico	-0.3	-8.6	5.7	3.9	3.2	2.4	1.4	1.9	2.1	2.1	2.1
United States	1.8	1.2	4.7	8.0	4.1	2.9	2.0	2.1	2.1	2.1	2.1
China	2.9	2.5	0.9	2.0	0.2	1.0	2.0	2.0	2.0	2.0	2.0

Moderate GDP Growth & Unemployment

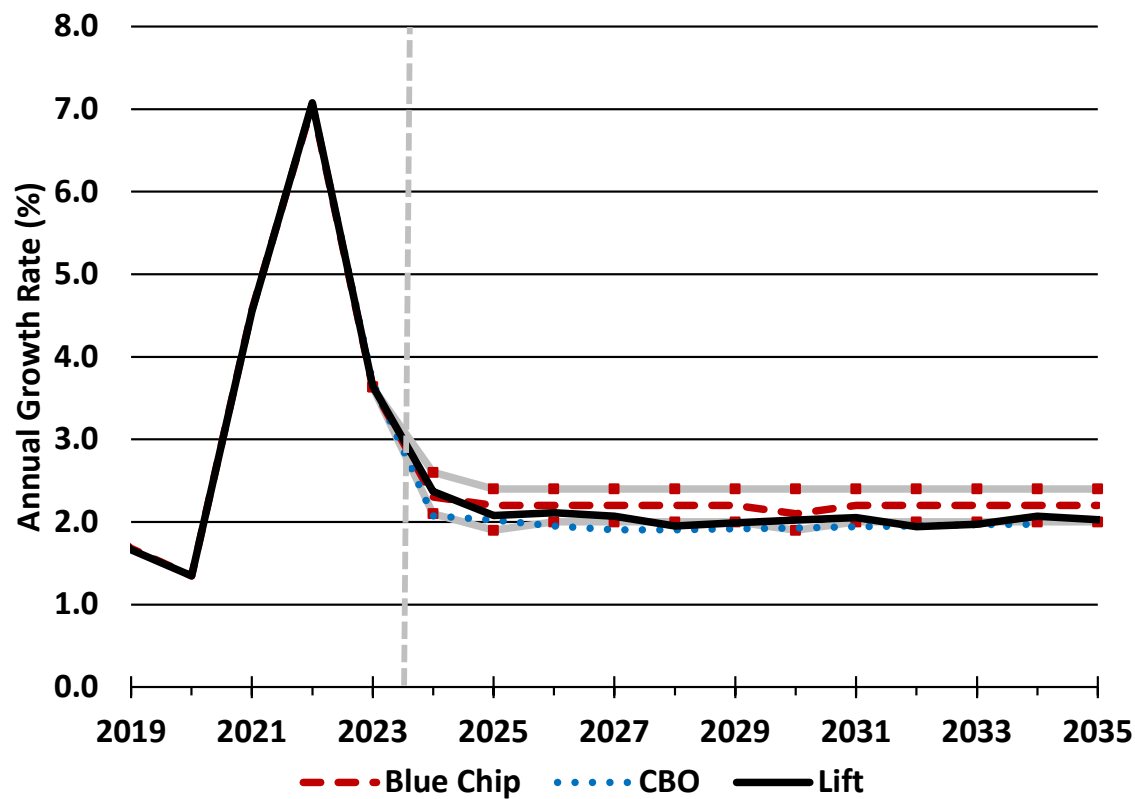


Real GDP growth \approx 2.0%

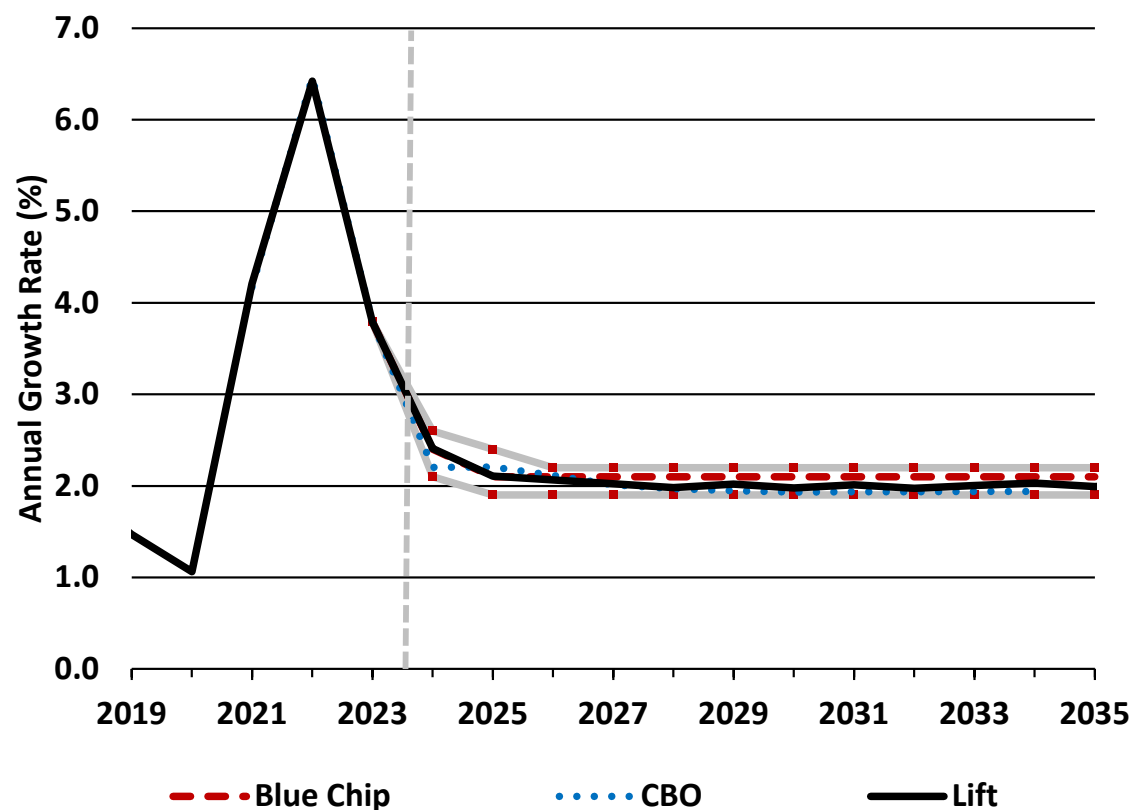


Unemployment Rates
Lift converges to Noncyclical Rate of Unemployment

Inflation Converges to Target Rates

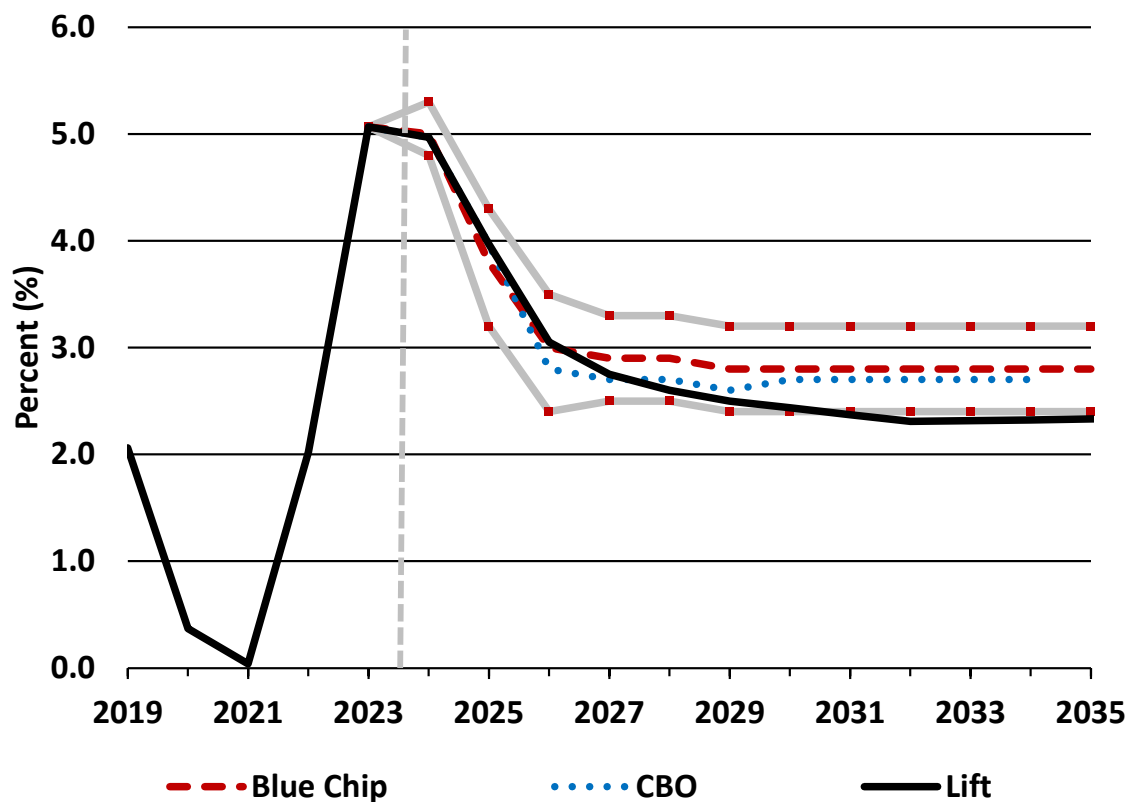


GDP inflation → 2.0%

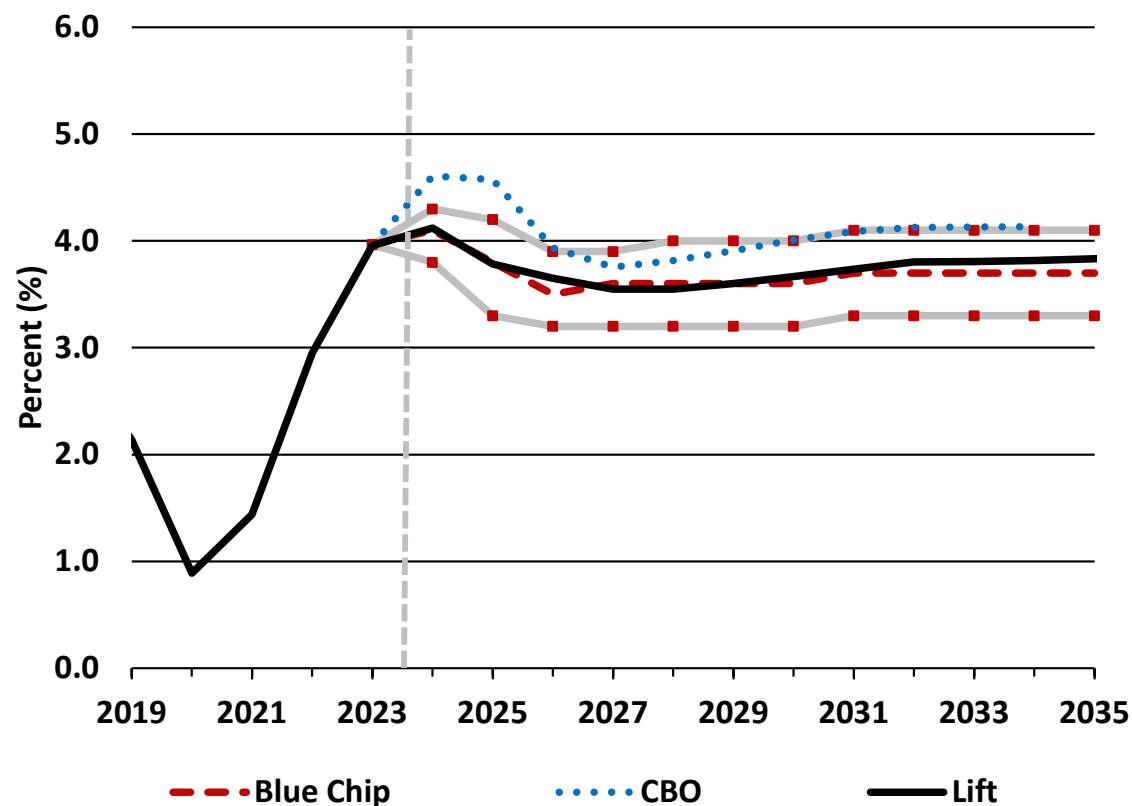


PCE inflation → 2.0%

Interest Rates

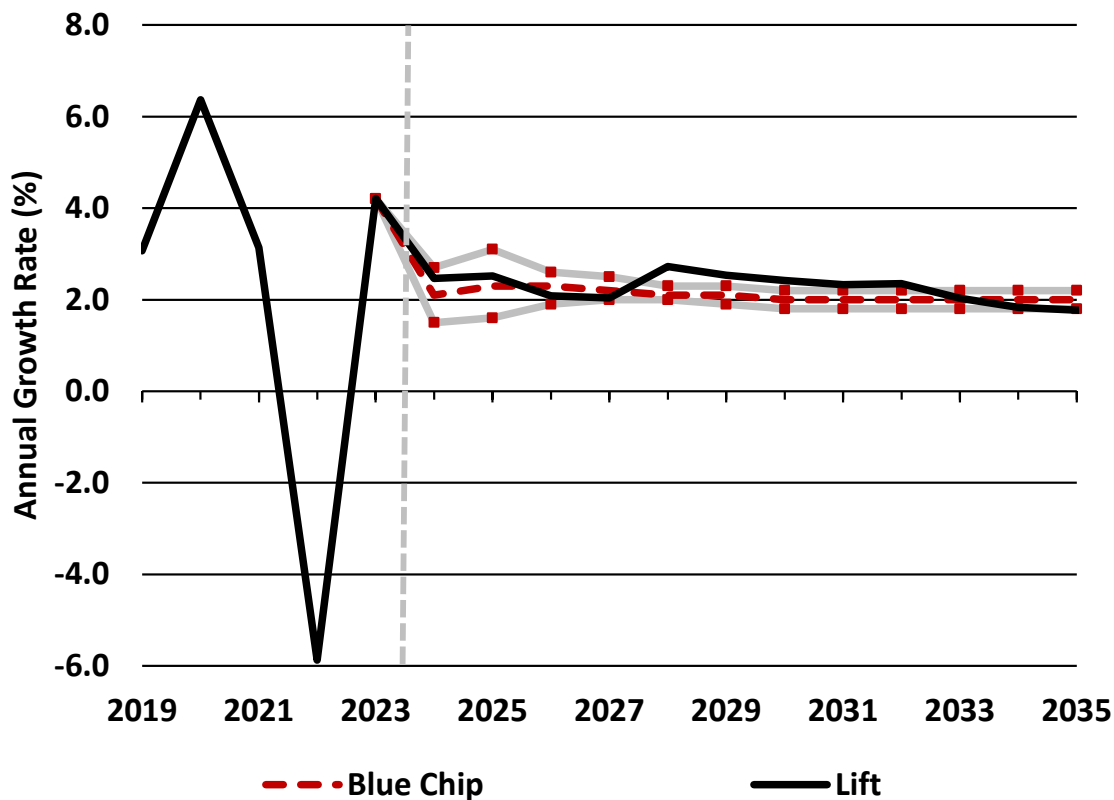


3-Month Treasury Bill Rate
(Lift revisions pending)

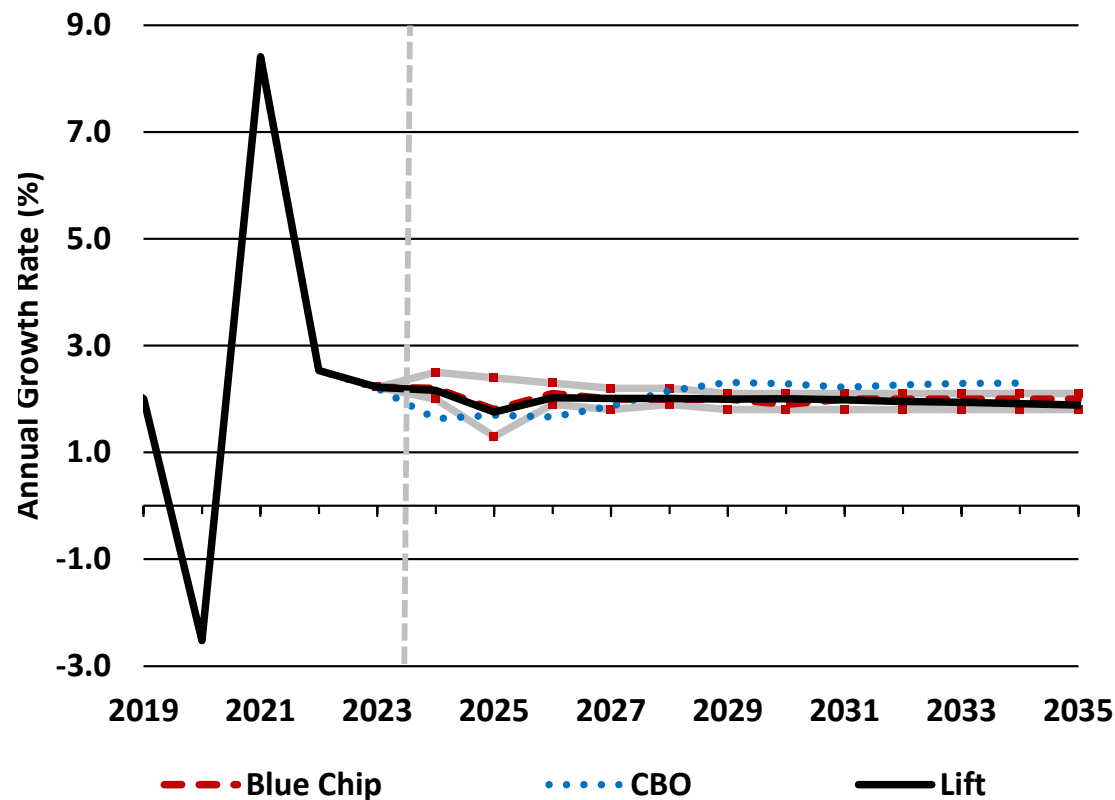


10-Year Treasury Bond Rate

Personal Income and Expenditure



Real Disposable Income Growth
Reflects pending tax rate changes under current law.



Real Personal Consumption Growth

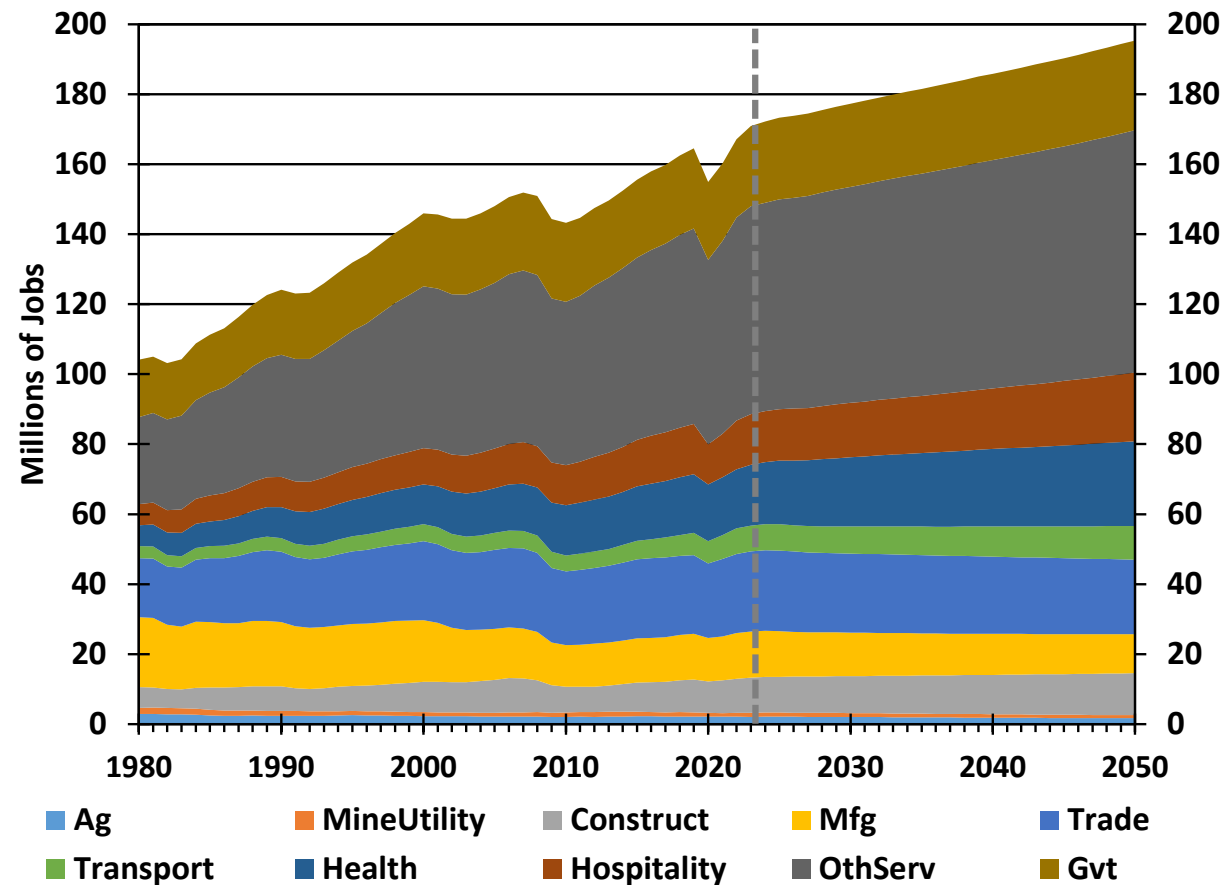
U.S. Outlook: Real Spending

	19-20	20-21	21-22	22-23	23-24	24-25	25-30	30-50
Gross Domestic Product	-2.2	5.8	1.9	2.5	2.4	1.7	2.0	1.7
Personal Consumption	-2.5	8.4	2.5	2.2	2.2	1.8	2.0	1.7
Durable Goods	8.0	16.7	-0.3	4.2	3.6	2.3	2.8	2.3
Nondurable Goods	3.3	8.5	0.6	0.8	1.4	1.1	1.5	1.7
Services	-5.9	6.9	3.7	2.3	2.1	1.9	2.0	1.6
Gross Private Domestic Investment	-4.7	8.7	4.8	-1.2	1.0	2.8	3.3	2.8
Nonres. Fixed Investment	-4.7	5.9	5.2	4.5	2.7	2.6	3.2	3.0
Nonresidential Structures	-9.5	-3.2	-2.1	13.2	5.7	0.3	2.5	1.8
Equipment Investment	-10.1	6.4	5.2	-0.3	0.9	3.3	3.3	3.3
Intellectual Property	4.5	10.4	9.1	4.5	2.6	3.2	3.5	3.4
Residential Investment	7.2	10.7	-9.0	-10.6	1.9	3.6	3.8	2.2
Exports (% change)	-13.1	6.3	7.0	2.6	3.2	3.2	3.1	2.1
Imports (% change)	-9.0	14.5	8.6	-1.7	2.4	3.0	3.0	2.2
Government	3.2	-0.3	-0.9	4.1	2.7	0.6	0.6	0.5
Federal	6.1	1.4	-2.8	4.2	2.5	0.7	0.6	0.5
Defense	2.8	-1.9	-2.8	3.4	2.3	0.6	0.5	0.5
Nondefense	10.9	5.9	-2.9	5.2	2.8	0.9	0.8	0.6
State & Local	1.4	-1.3	0.2	4.0	2.9	0.5	0.5	0.5
	2020	2021	2022	2023	2024	2025	2030	2050
Inventory Change (Billion 2017\$)	-30	13	128	44	47	49	44	65
Net Exports (Billion 2017\$)	-663	-934	-1,051	-928	-930	-952	-1,091	-1,781

U.S. Outlook: Labor & Prices

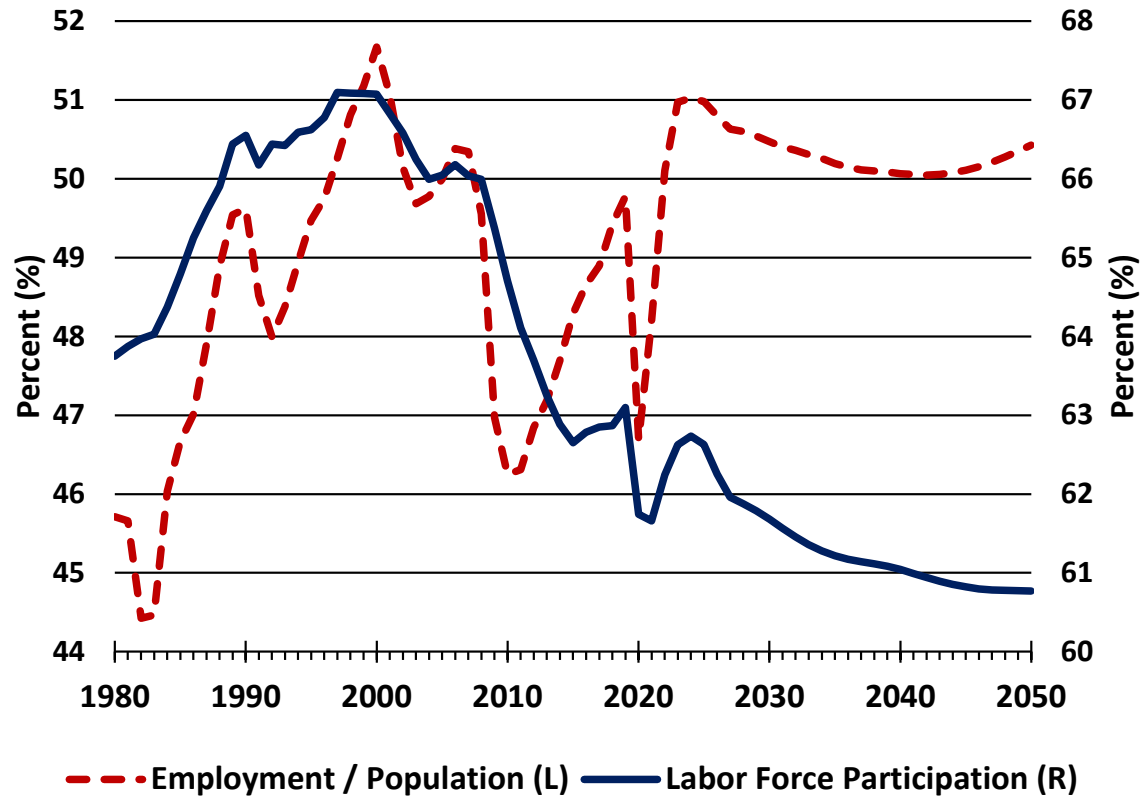
	19-20	20-21	21-22	22-23	23-24	24-25	25-30	30-50
Real GDP	-2.2	5.8	1.9	2.5	2.4	1.7	2.0	1.7
Hours Worked	-5.0	4.1	2.3	1.6	1.4	0.6	0.7	0.5
Labor Productivity	2.9	1.7	-0.4	0.9	1.0	1.1	1.3	1.2
Real Disposable Income	6.4	3.1	-5.9	4.2	2.5	2.5	2.4	1.8
Civilian Population, Ages 16+	0.4	0.4	1.0	1.1	0.7	0.8	0.6	0.4
Labor Force	-1.7	0.3	1.9	1.7	0.9	0.6	0.3	0.4
Employment	-5.6	3.2	4.1	2.2	0.8	0.6	0.4	0.5
GDP Deflator	1.3	4.6	7.0	3.6	2.4	2.1	2.0	2.0
PCE Deflator	1.1	4.2	6.5	3.7	2.5	2.1	2.0	2.0
Nominal GDP	-0.9	10.7	9.1	6.3	4.9	3.9	4.0	3.8
	2020	2021	2022	2023	2024	2025	2030	2050
Unemployment Rate	8.1	5.3	3.6	3.6	4.0	4.1	4.2	3.9
Labor Force Participation Rate	61.7	61.7	62.2	62.6	62.7	62.6	61.7	60.8
3-Month Treasury Bills	0.4	0.0	2.0	5.1	5.0	4.0	2.4	2.5
10-Year Treasury Bonds	0.9	1.4	3.0	4.0	4.1	3.8	3.7	4.0
Personal Savings Rate	15.4	11.4	3.3	4.5	4.9	5.5	7.1	8.2
Current Account (% of GDP)	-2.7	-3.6	-3.8	-3.0	-2.9	-2.7	-2.8	-3.1
Federal Net Borrowing (% of GDP)	-14.2	-12.3	-4.6	-7.1	-7.5	-8.0	-8.0	-8.5

Industry Employment Outlook

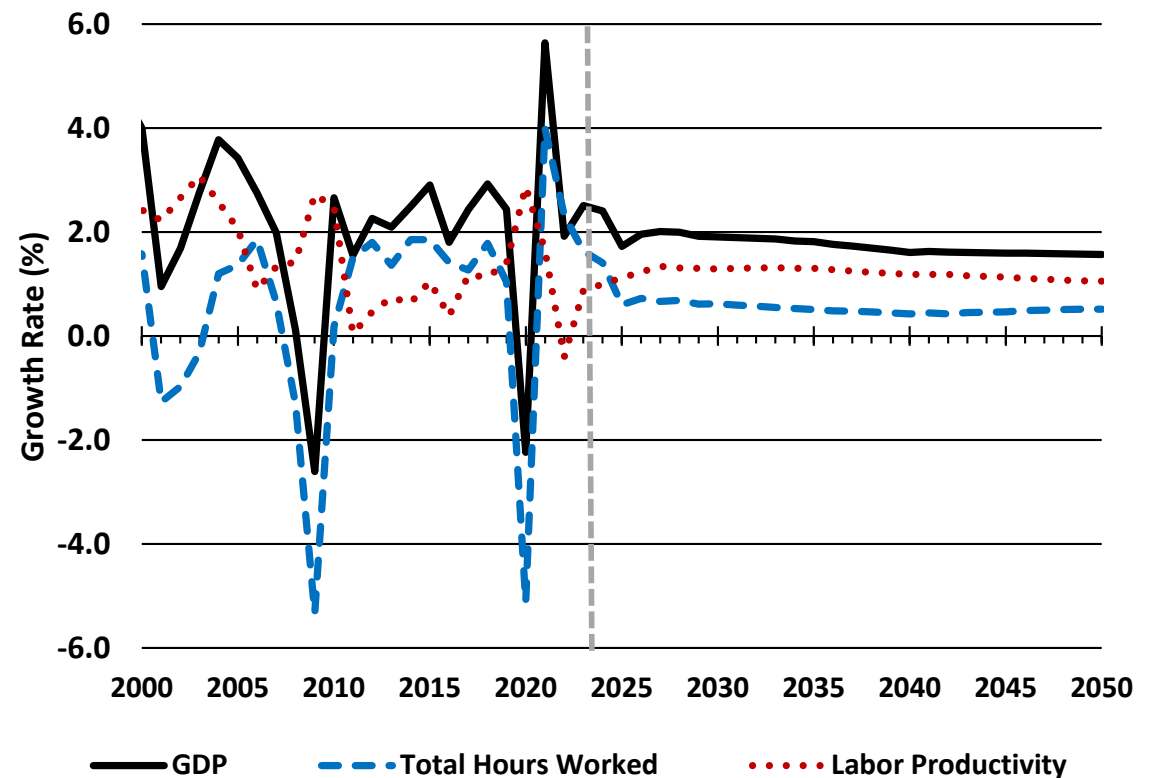


Employment continues to shift toward services. Revival of manufacturing could slow the shift, as could faster labor productivity growth in services industries.

GDP: Productivity & Labor Supply



Labor Force Participation declines with aging population



- Greater immigration could boost hours.
- Great potential for higher labor productivity growth to boost production, e.g. AI, 3-D printing, self-driving vehicles.

Contact Information

Ronald Horst

- Horst@InforumEcon.com
- (301) 458-8923
- www.InforumEcon.com

History of Inforum

- Founded in 1967 to improving business planning, government policy analysis, and the general understanding of the economic environment.
- Builds and applies structural economic models of U.S. and other economies.
- Works with government and private sector research sponsors.
- Trains graduate, undergraduate, and other students.
- Maintains a world-wide network of research associates.

Why Use Economic Models?

- Produce economic and social data – raw material for reports and studies – in comprehensive data sets useful for analysis.
- Building models assists and tests economists’ understanding on how the economy works.
- Assists the economic forecasting process. Leverages the historic record to detect likely future trends. Provides a comprehensive and consistent framework to assess assumptions and structure of an economic forecast.
- Simulates “counterfactual” details to produce alternative scenarios and/or to evaluate policy measures or exogenous economic shocks.

Economic Models: A Comparison

- Macro models
 - Based on time series data, econometrically estimated. Good dynamic properties.
 - Little industry detail. Do not show relationships between industries.
 - Example: Inforum quarterly forecasting model.
- Static Input-Output (IO)
 - IO allows for detailed identification of the flow of spending impacts on industry-level production and employment.
 - Static framework does not recognize macroeconomic constraints.
- Interindustry-Macroeconomic (IM) Models
 - Pioneered at Inforum, with support from research sponsors, PhD students, and partners.
 - Example: Inforum Lift model.

LIFT: Inforum's Model of the U.S. Economy



- Long-term Interindustry Forecasting Tool (LIFT) is an Interindustry-Macro (IM) model.
 - Sectoral detail: Production, prices, jobs, investment, consumer spending, foreign trade, and factor income (wages, profits, depreciation), etc.
 - Government: Defense, Nondefense, S&L. Extensive revenue, consumption and investment, transfers, and other detail.
 - Macrovariables:
 - Aggregates of the underlying industry forecasts: GDP, net exports, unemployment rate, aggregate price level,
 - Other macro variables: Savings rate, interest rates,
- LIFT is particularly useful in addressing questions involving interactions between industries, as well as the interplay between industry and macroeconomic relationships.

The LIFT Model

- The Current Edition
 - Interindustry structure and information derived from BEA benchmark 2012 IO and 1997-2021 annual IO tables.
 - Industry data integrated and reconciled to NIPA in real and nominal terms (2012 NIPA Benchmark).
- The Next Edition
 - Interindustry structure and information derived from BEA benchmark 2017 IO and 1997-2023 annual IO tables.
 - Industry data integrated and reconciled to NIPA in real and nominal terms (2017 NIPA Benchmark).
- Time series of real IO Tables from 1997.
- Industry and commodity definitions harmonized with BEA NAICS IO and industry data.
- Consistent industry definitions for investment, employment, and value added.

Forecasting Assumptions: Exogenous Detail

- Energy prices (EIA)
- Health Care Spending (CMS)
- Transfers: Social Security (SSA), Medicare & Medicaid (CMS)
- Federal Fiscal policy (CBO)
- Population Growth (SSA)
- International Outlook (Inforum and other)

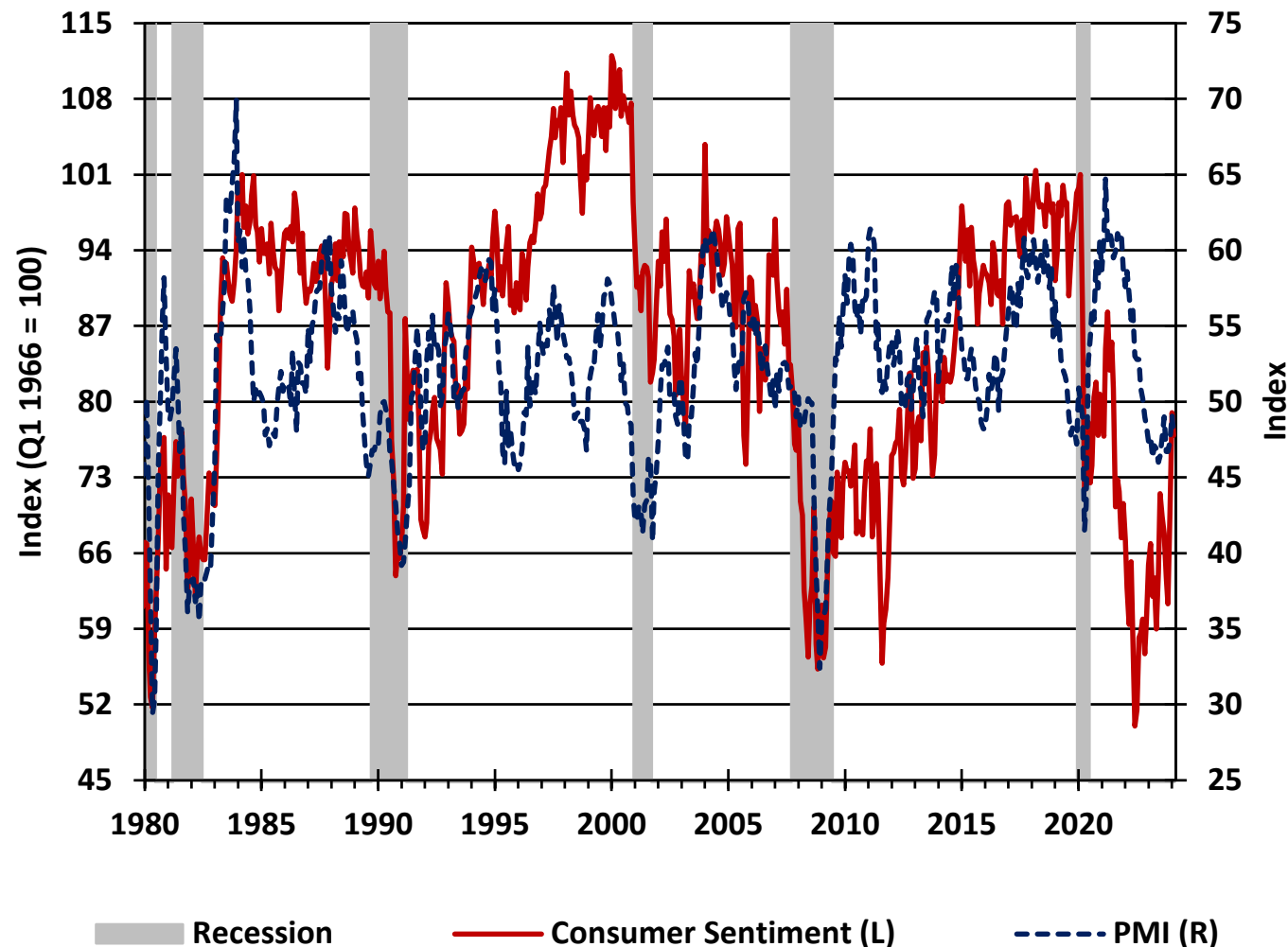
Forecasting Assumptions: The Long-Run

- Labor force guided by population and participation rate projections
 - Unemployment rates near NAIRU imply employment
 - Labor productivity growth implies real GDP
- Inflation rates near 2%
- (Marginally) Sustainable financial balances
 - Stable personal savings rates
 - Current Account / GDP
 - Government Debt / GDP

Additional Material

Much of this material, and other material, may be found in the text.

Consumer & Business Sentiment



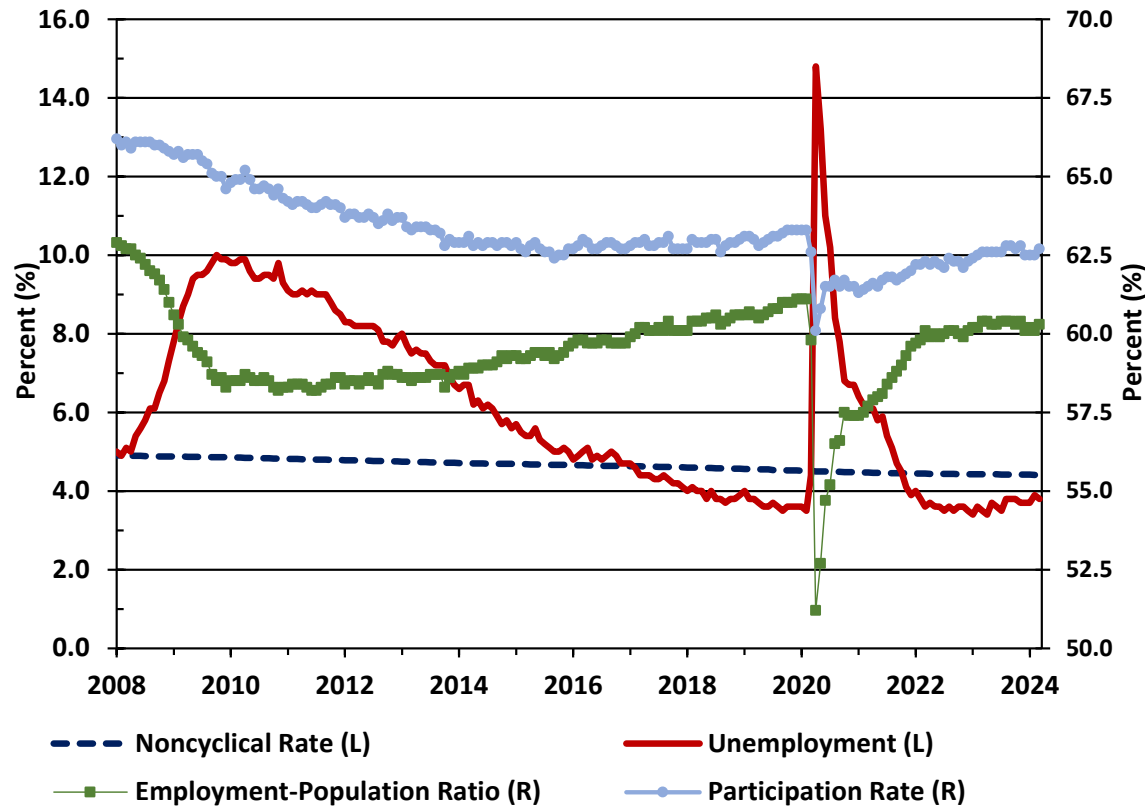
- Consumer Sentiment recovering from record lows.

- Avg 2019: 96.0
- Jun 2022: 50.0
- Feb 2024: 76.9

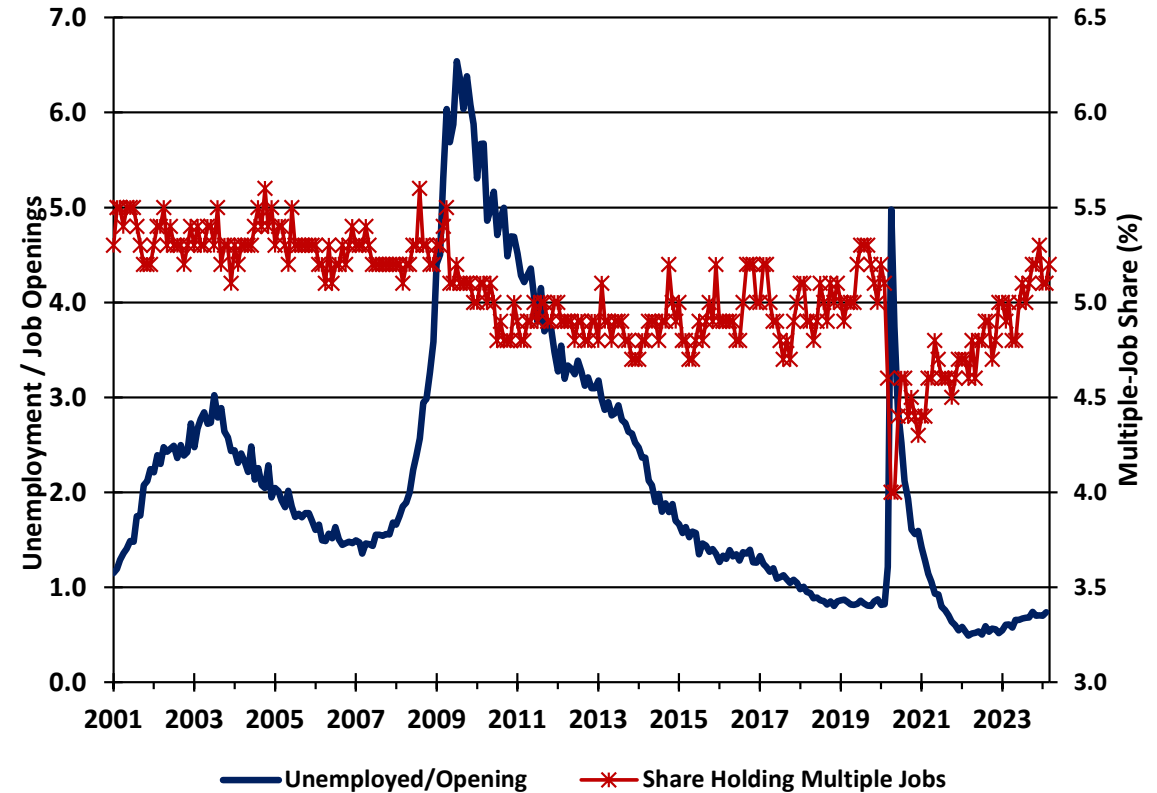
- PMI was low but just surpassed a neutral reading of 50.

- Oct 2022: 50.2
- Nov 2023: 46.7
- Mar 2024: 50.3

Additional Labor Markets Indicators

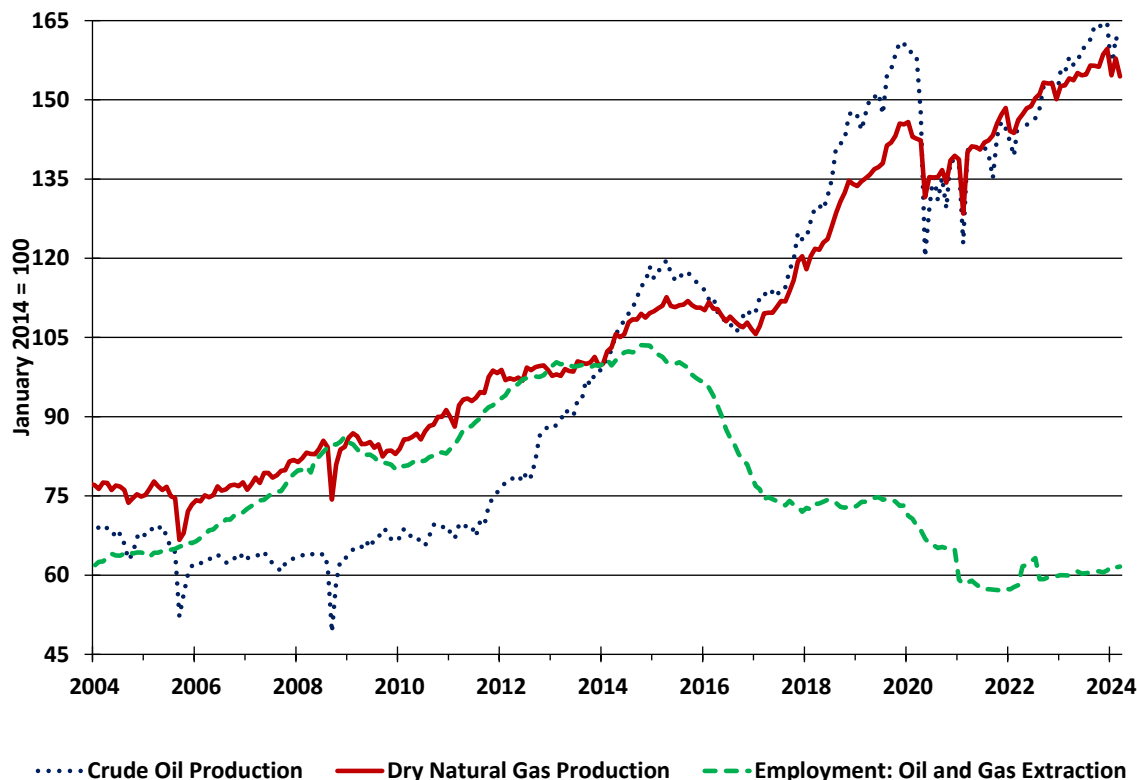


More people are working...

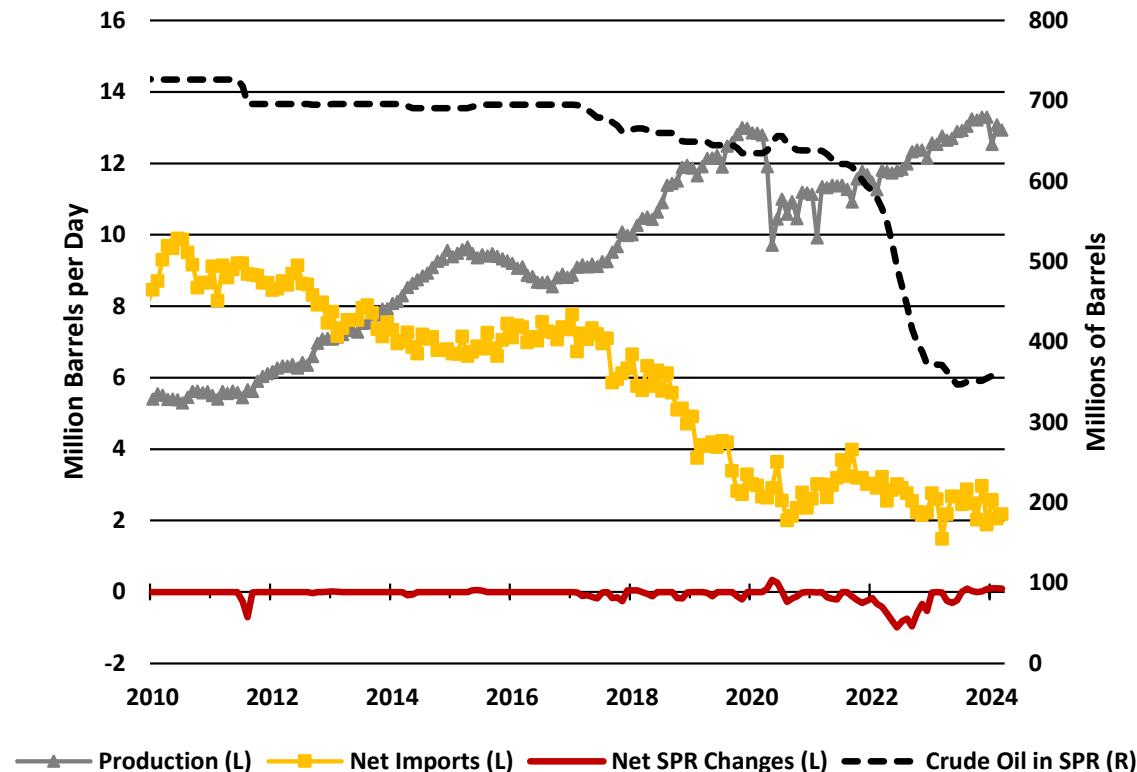


and holding multiple jobs, but many job openings remain.

Oil & Gas Production High

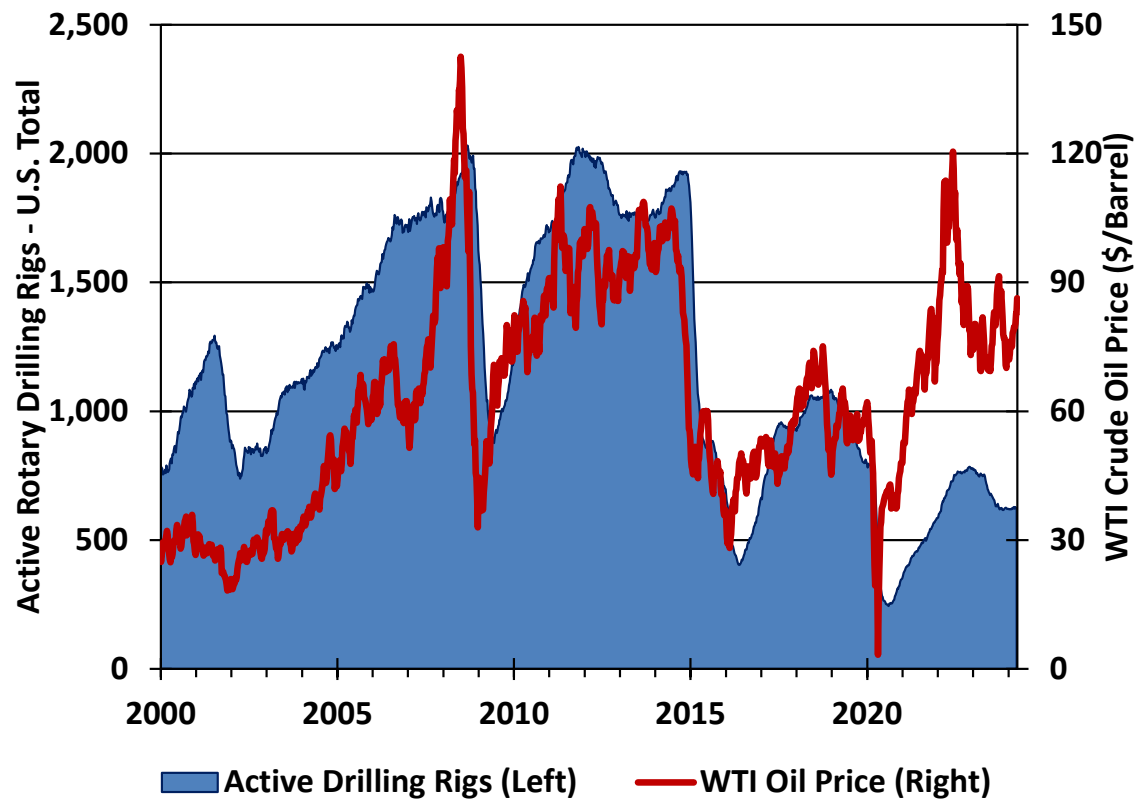


Oil and natural gas production high but volatile while employment is low...

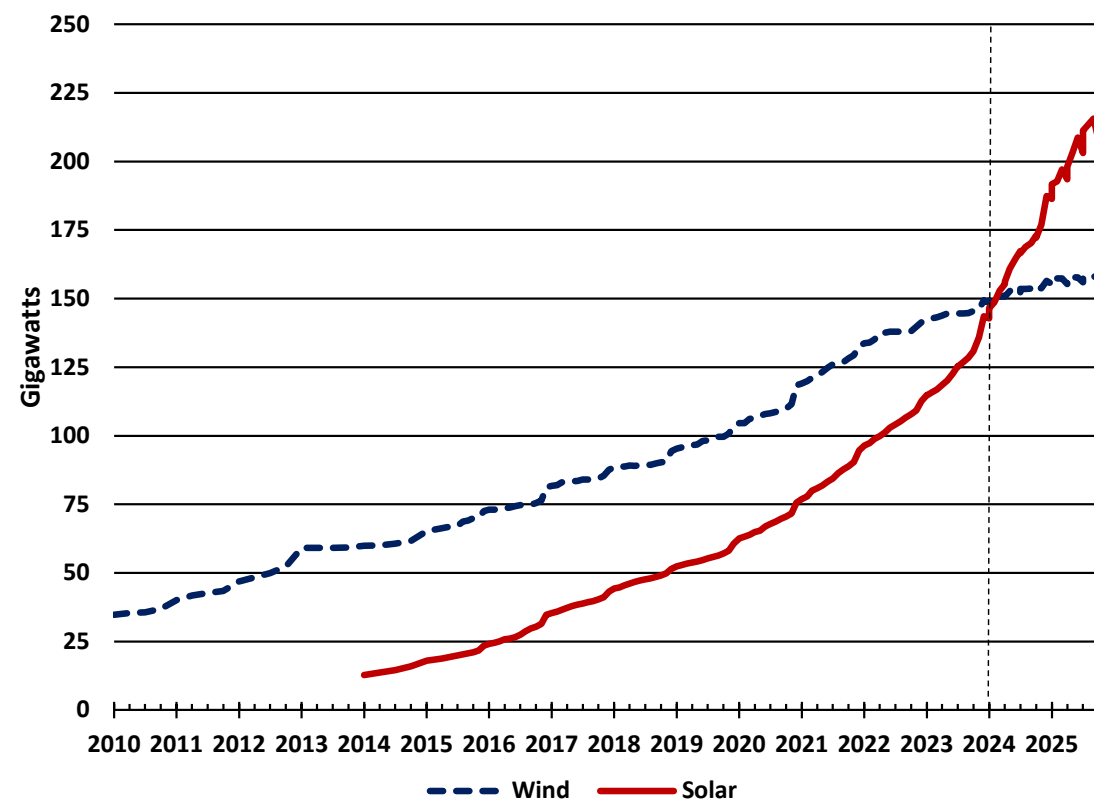


with supplies augmented by reduction of the Strategic Petroleum Reserve.

Oil & Gas Investment Remains Low...



Oil and natural gas investment is low...



but renewable energy investment is strong.

Value Added Components of Prices

