

From Importer to Exporter: Oil Shocks and the U.S. Economy

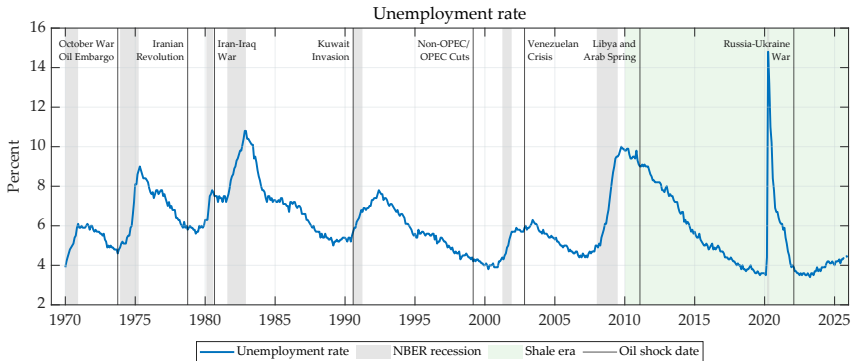
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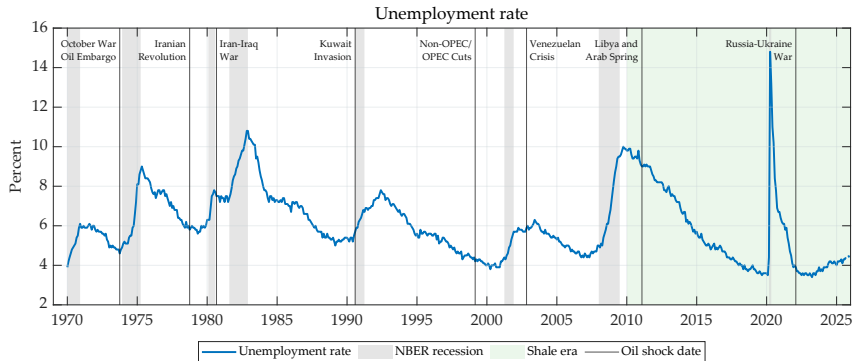
BPEA Fall 2026 Conference

Why have recent oil shocks not led to U.S. recessions?



- Major oil market disruptions were typically followed by U.S. recessions
- Recent oil shocks broke this historical pattern:

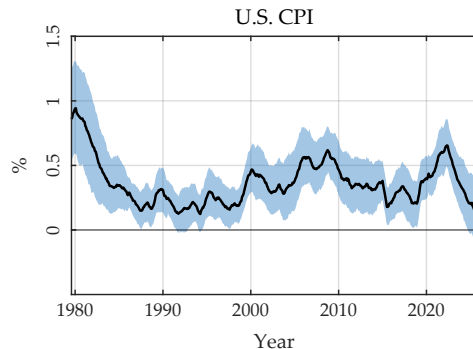
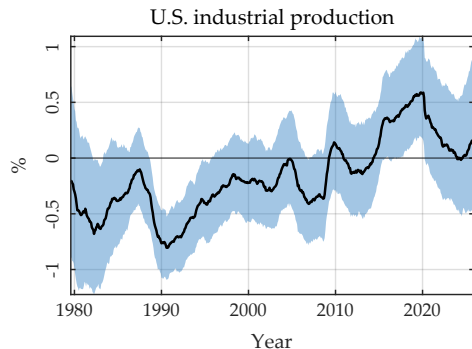
Why have recent oil shocks not led to U.S. recessions?



- Major oil market disruptions were typically followed by U.S. recessions
- Recent oil shocks broke this historical pattern:
2011, 2022: large oil disruptions but no discernible impact on U.S. economy

The activity response has become much more favorable

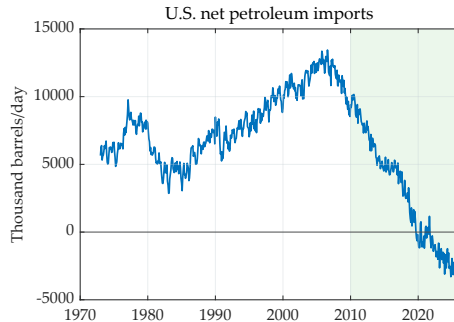
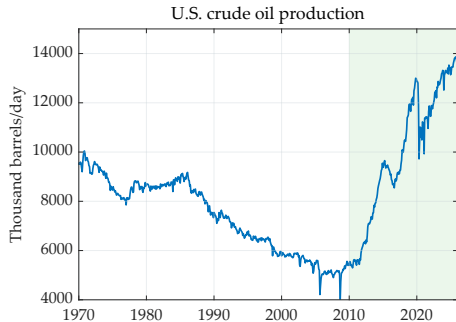
Estimated response **one year after** a 10% oil price increase, by date:



Time-varying parameter model (TVP). Responses after one year. Median estimates and 68% credible intervals.

- The contraction in industrial production has weakened and even **reversed**
- No comparable change in the consumer price response

The shale boom transformed the U.S. petroleum trade balance



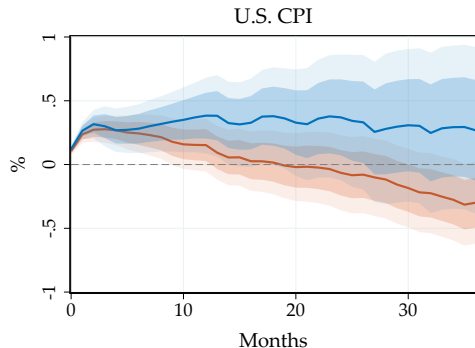
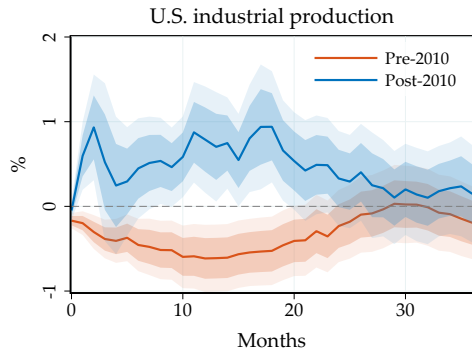
Petroleum includes crude oil and petroleum products. Green shading marks the period since 2010.

- U.S. crude oil production nearly **tripled** after 2010
- Net petroleum imports collapsed, turning the U.S. into a **net exporter** in 2019

Empirical approach

- Oil prices are market prices, driven by both supply and demand
⇒ complicates estimation of their effects on the U.S. economy
- Use news about future oil supply from oil price changes around OPEC meetings
Känzig (AER, 2021), extended through 2025
- Study how transmission changed
 - in the **pre-** and **post- shale period**
 - depending on the **petroleum trade position** by interacting the shock with **net petroleum imports**

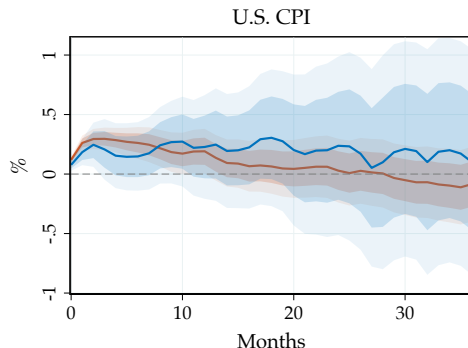
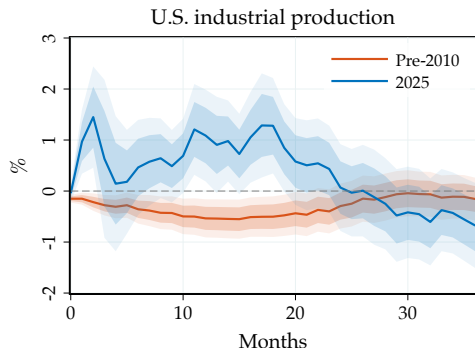
Oil shock transmission changed sharply in the shale era



Responses to an oil supply shock, increasing oil prices by 10%. Shading: 68% and 90% confidence intervals.

- Transmission changed starkly in the **shale era**
- Industrial production no longer contracts but **expands significantly**
- Consumer prices still rise, but somewhat more persistently

The changing response is closely tied to the petroleum trade position



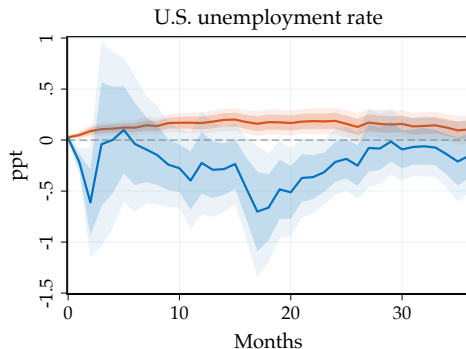
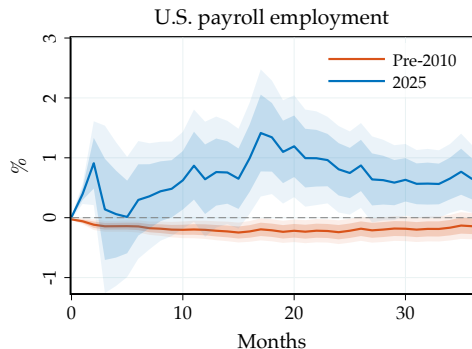
Responses at pre-2010 and 2025 trade balance. 10% oil shock. Shading: 68% and 90% confidence intervals.

- Industrial production falls at the **pre-2010**, but rises at the **2025 trade position**
- Robust to controlling for energy intensity, services share, and the ZLB

► Difference

► Robustness

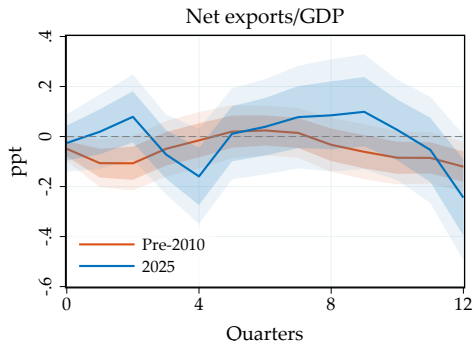
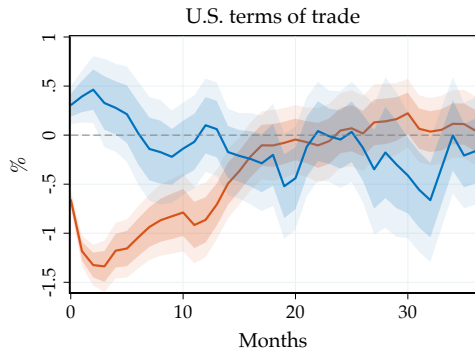
Employment and unemployment also reverse direction



Responses at pre-2010 and 2025 trade balance. 10% oil shock. Shading: 68% and 90% confidence intervals.

- At the **pre-2010 trade position**, employment falls and unemployment rises
- At the **2025 trade position**, the responses **reverse** at medium horizons

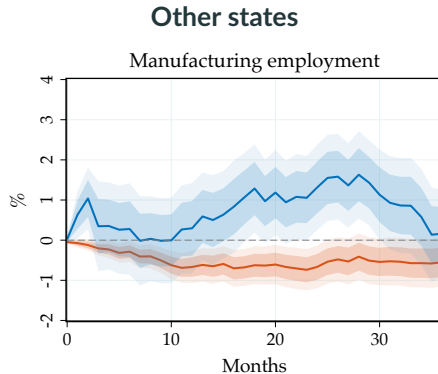
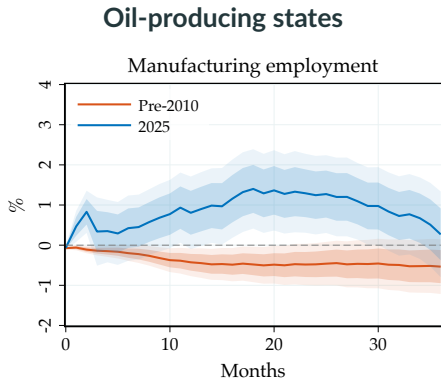
Higher oil prices now improve U.S. purchasing power



Responses at pre-2010 and 2025 trade balance. 10% oil shock. Shading: 68% and 90% confidence intervals.

- The initial response of export prices relative to import prices turns **favorable**
- Aggregate net exports respond only modestly $\Rightarrow$ no mechanical trade effect

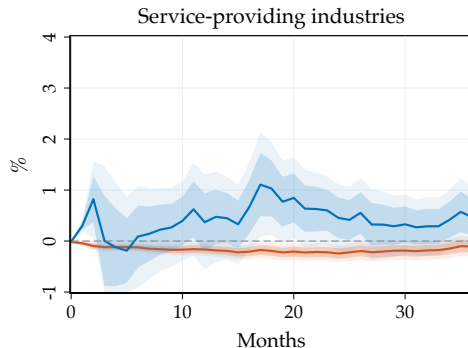
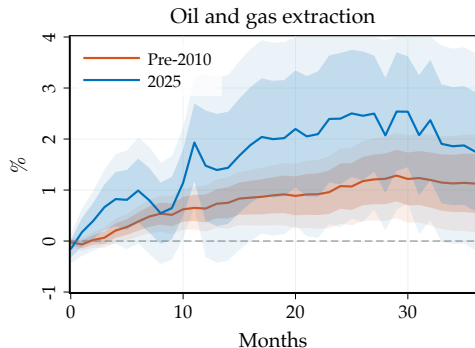
Employment improves in states that do not produce oil, too



State-level responses at pre-2010 and 2025 trade balance. 10% oil shock. Shading: 68% and 90% intervals.

- Manufacturing employment responds more favorably in **both groups** [▶ More](#)

The expansion extends beyond oil and gas

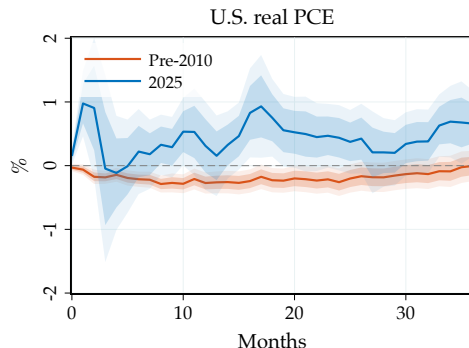
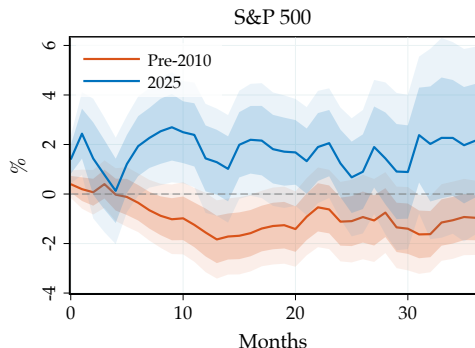


Responses at pre-2010 and 2025 trade balance. 10% oil shock. Shading: 68% and 90% confidence intervals.

- Employment gains in oil and gas become **larger**
- Employment also strengthens across **services, manufacturing, and construction**

► More

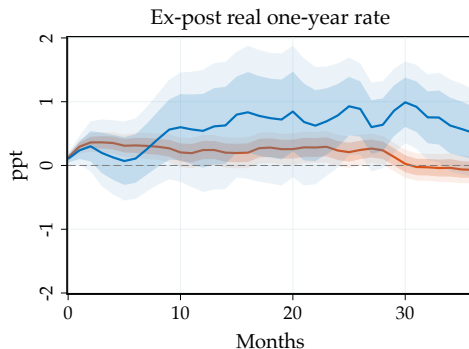
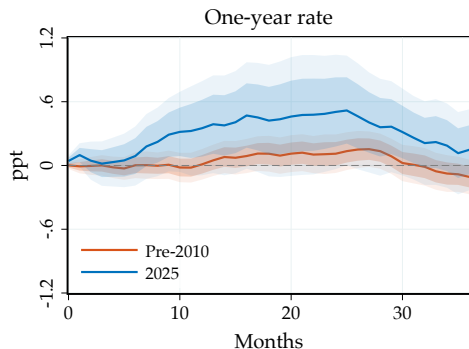
Income and wealth gains support demand and activity



Responses at pre-2010 and 2025 trade balance. 10% oil shock. Shading: 68% and 90% confidence intervals.

- Higher oil prices raise aggregate **income and wealth**, supporting consumption
- Stock-market wealth effect alone implies $\approx 0.2\%$ higher consumption

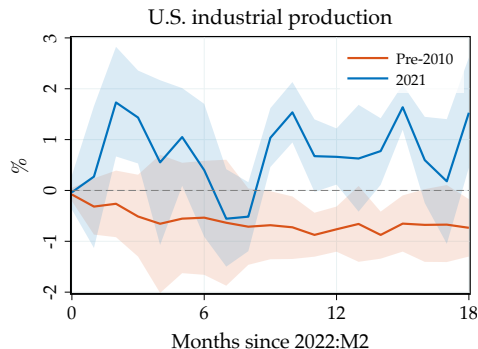
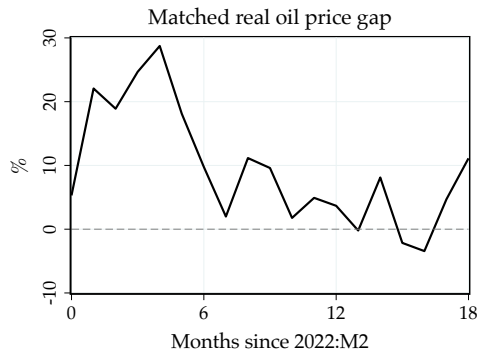
Stronger activity accompanies a larger interest-rate response



Responses at pre-2010 and 2025 trade balance. 10% oil shock. Shading: 68% and 90% intervals.

- The improvement in activity does not rely on **easier monetary policy**
- The evidence suggests a **more favorable trade-off** between activity and inflation

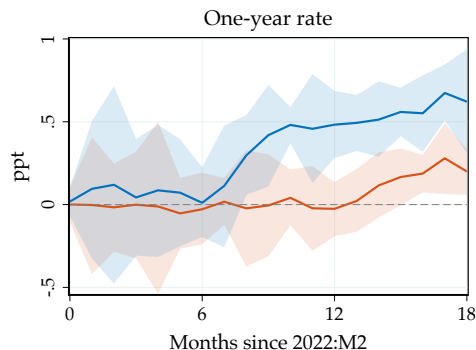
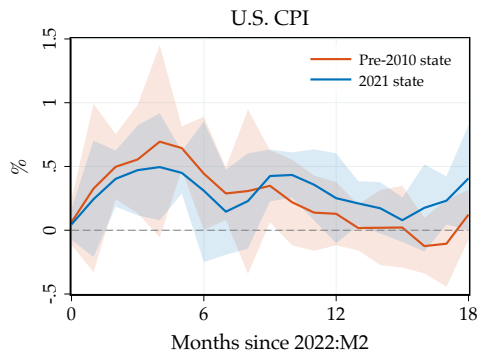
The 2022 oil episode under the old and new trade positions



Impact at pre-2010 and 2021 trade balance. Shading: 68% intervals.

- Match the oil price gap relative to a **pre-invasion forecast**
- Feed the **same oil shock sequence** through the two trade positions

The 2022 episode raises prices and interest rates



Impact at pre-2010 and 2021 trade balance. Shading: 68% intervals.

- Consumer prices rise less initially but **more persistently** at the 2021 trade position
- The one-year rate responds **substantially more strongly**

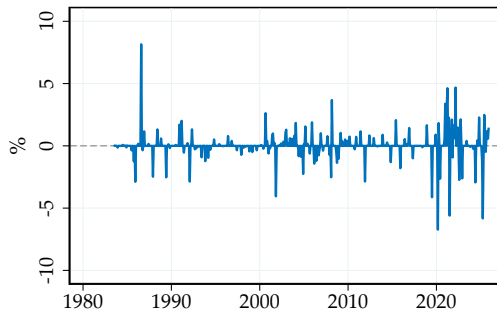
Oil shocks no longer hit the U.S. economy the way they used to

- As the U.S. became a **net exporter**, oil shocks became expansionary
- **Income and wealth gains** now support consumption and activity beyond oil
- Higher oil prices still hurt many households and firms
- Historical oil-shock experience may be a **poor guide** for today's U.S. economy

Thank you!

Identification: unexpected news about oil supply

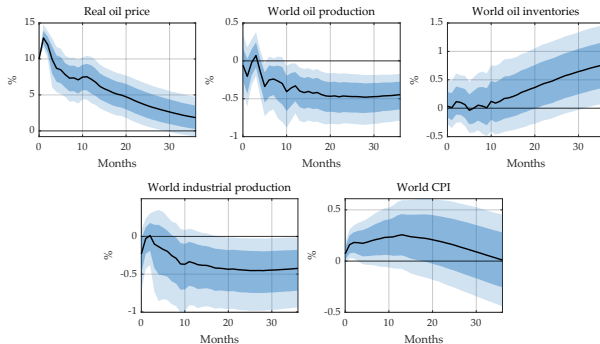
- OPEC announcements reveal **news about future oil supply**
- Previously available information is already **priced in**
- Futures surprises isolate unexpected supply-driven oil price variation
- **Identifying assumption:** surprises do not contain news about global demand



Oil futures price surprises around OPEC meetings
(Känzig, AER 2021, extended through 2025)

Identification: extracting the oil supply news shock

- Use OPEC surprises as an **external instrument** in a global oil market VAR
- Extract the resulting **oil supply news shock** from the VAR



First-stage regression: robust F: 18.39, R^2 : 5.31%, Adjusted R^2 : 5.16%

Monthly data, 1974–2025. Shading: 68% and 90% confidence intervals

Local projection specification

- Estimate the response for each outcome and horizon h :

$$y_{t+h} = \alpha_h + \beta_h \widehat{\varepsilon}_t^{oil} + \gamma_h (\widehat{\varepsilon}_t^{oil} s_t) + \delta_h s_t + \Gamma'_h W_{t-1} + u_{t+h}.$$

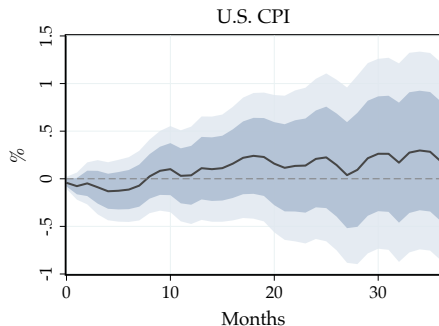
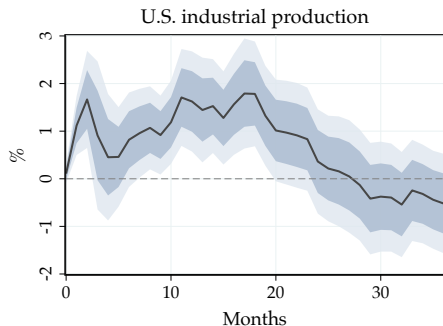
- Interact the shock with **net petroleum imports / consumption**

$$n_t = 100 \frac{\text{net petroleum imports}_t}{\text{petroleum consumption}_t}, \quad s_t = \frac{\bar{n}_{\text{pre-2010}} - n_t}{\bar{n}_{\text{pre-2010}} - \bar{n}_{2025}}.$$

- Pre-2010:** β_h . **2025:** $\beta_h + \gamma_h$. Change: γ_h .
- Specification: Six lags of the outcome and oil-market controls, plus COVID controls
- Sample: 1975–2025. Oil-price impact normalized to 10% at $s_t = 0$

The change in transmission is statistically significant

Change in the response from the pre-2010 to the 2025 trade position

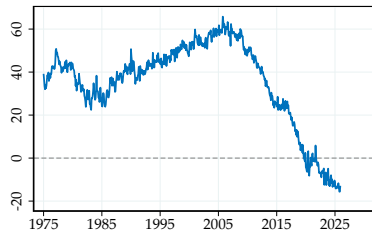


Difference between pre-2010 and 2025 responses. Shading: baseline 68% and 90% intervals.

- Change in industrial production response is not only economically but also statistically significant

Petroleum trade position and other structural changes

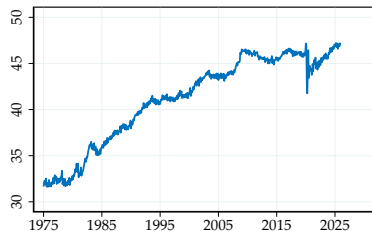
Net petroleum imports/consumption



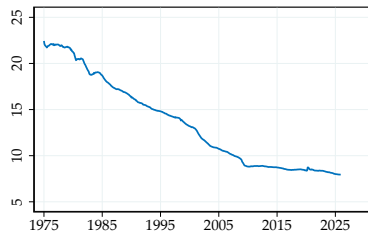
Total energy expenditure/GDP



Services expenditure/GDP

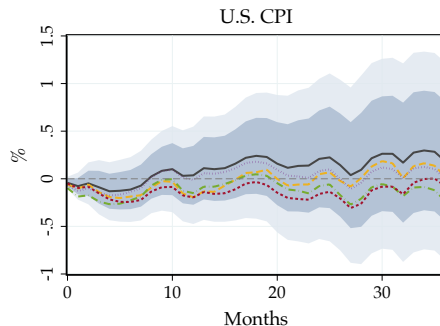
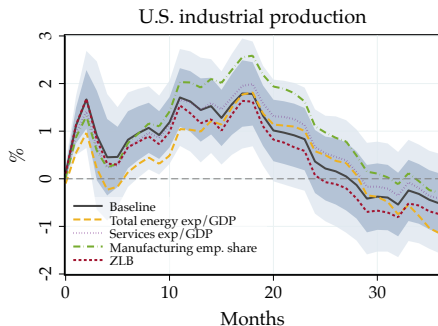


Manufacturing employment share



Accounting for declining energy use and other changes

Change in the response from the pre-2010 to the 2025 trade position

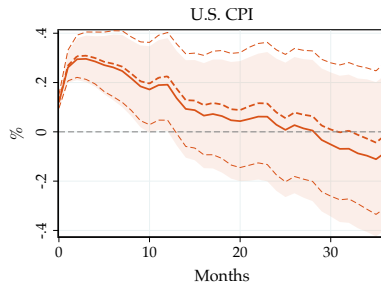
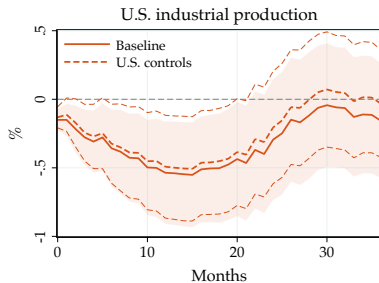


Each alternative enters separately alongside the trade interaction. Shading: baseline 68% and 90% intervals.

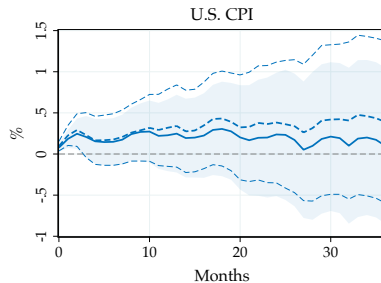
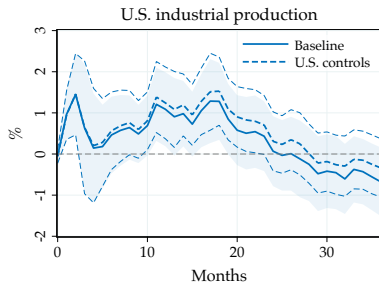
- The activity result **survives** additional interactions for energy spending, services, manufacturing employment, and the zero lower bound

Robustness: additional U.S. controls

Pre-2010 trade position

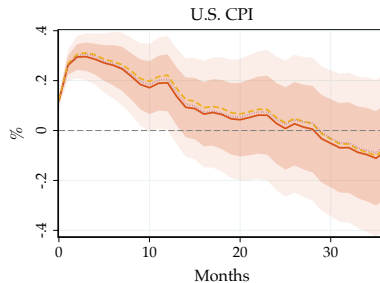
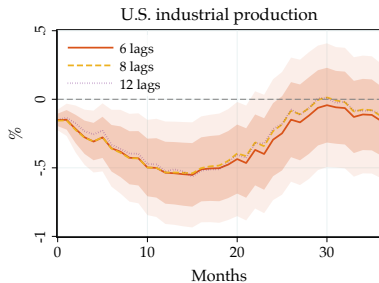


2025 trade position

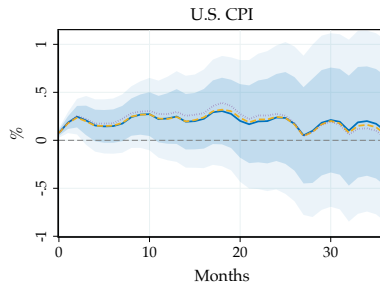
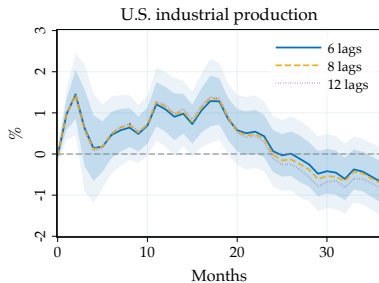


Robustness: alternative lag lengths

Pre-2010 trade position

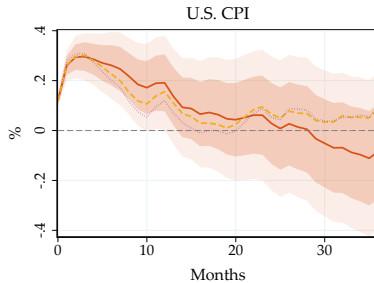
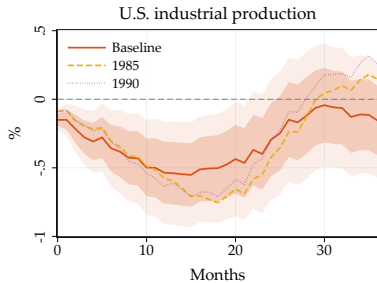


2025 trade position

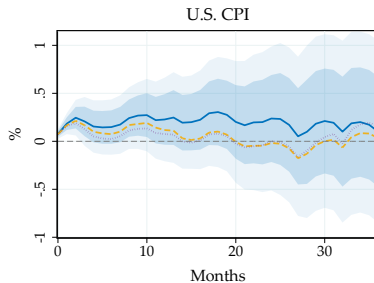
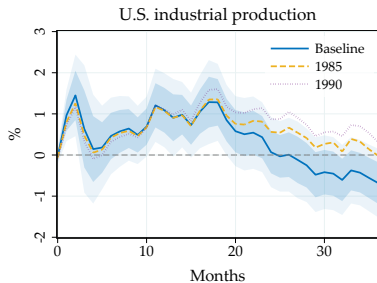


Robustness: alternative sample periods

Pre-2010 trade position

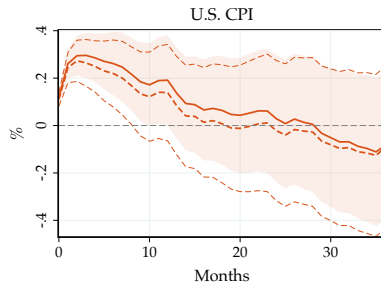
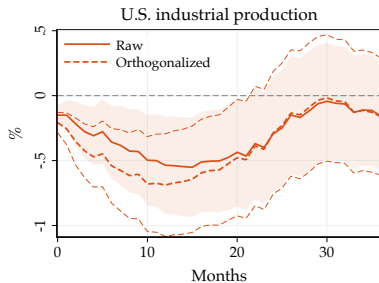


2025 trade position

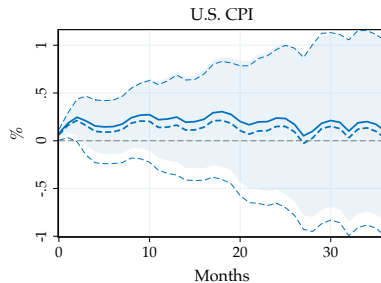
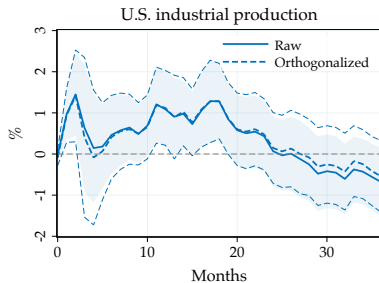


Robustness: orthogonalizing OPEC surprises

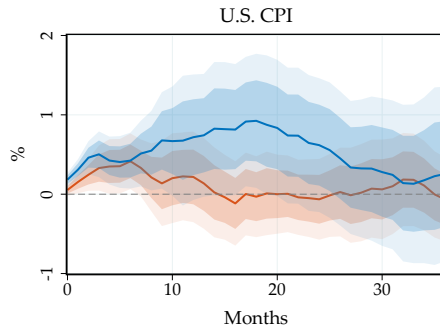
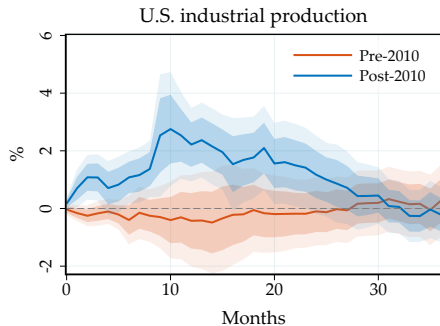
Pre-2010 trade position



2025 trade position

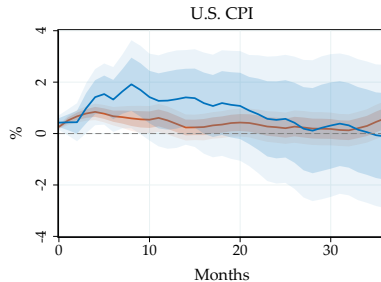
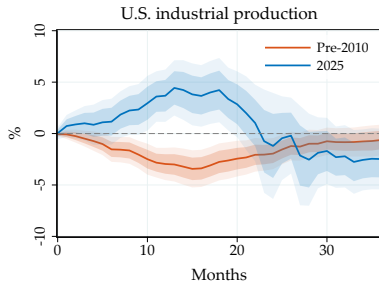


Alternative oil shocks: using OPEC surprises directly

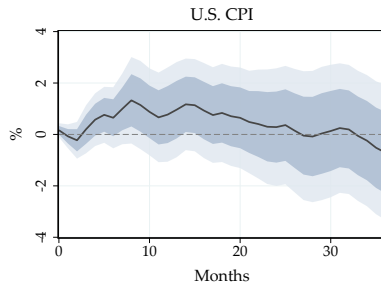
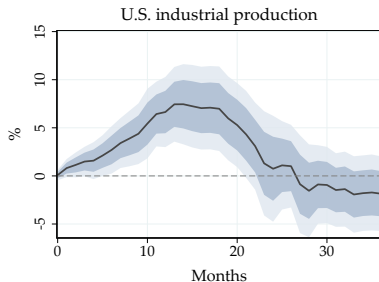


Alternative oil shocks: Hamilton (1996) net oil price increase

Baseline

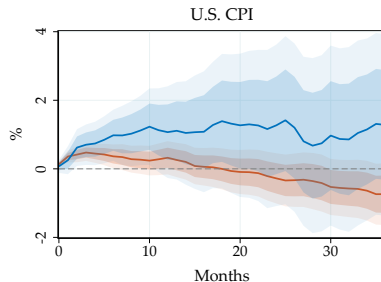
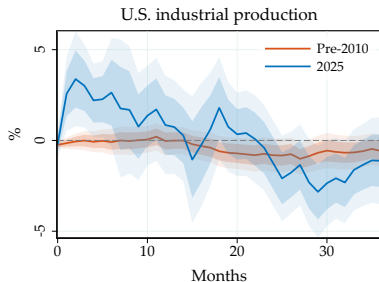


Interaction

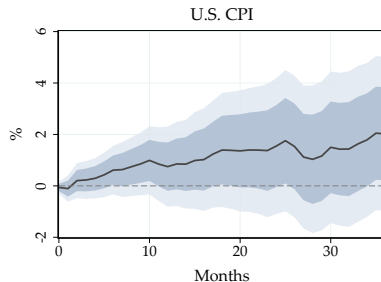
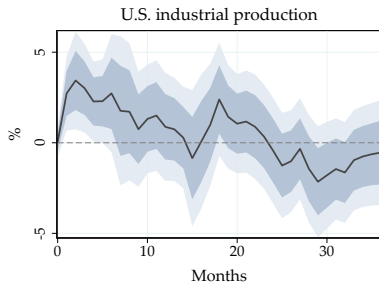


Alternative oil shocks: Baumeister and Hamilton (2019) oil supply shock

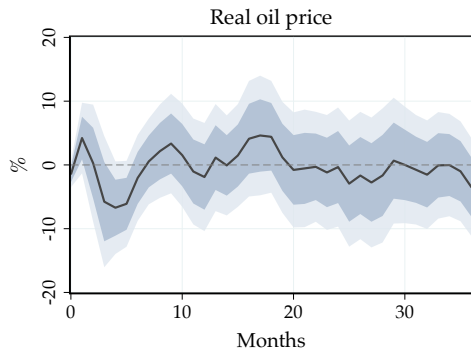
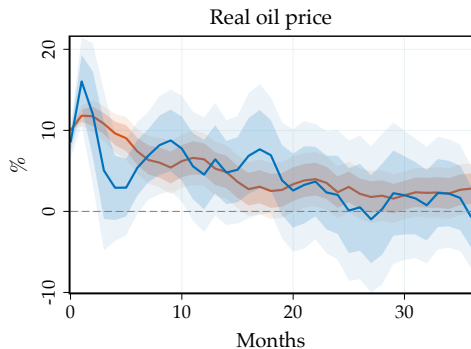
Baseline



Interaction



Oil price responses comparable across regimes



Responses at pre-2010 and 2025 trade balance. 10% oil shock. Shading: 68% and 90% confidence intervals.

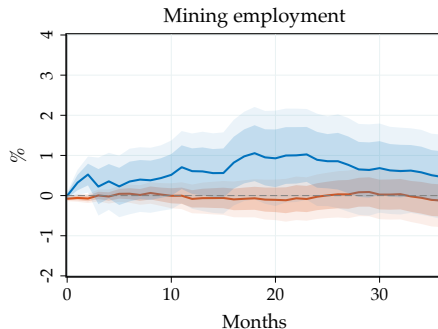
- The oil price impact turns out to be comparable across regimes

State-level employment: mining

Oil-producing states



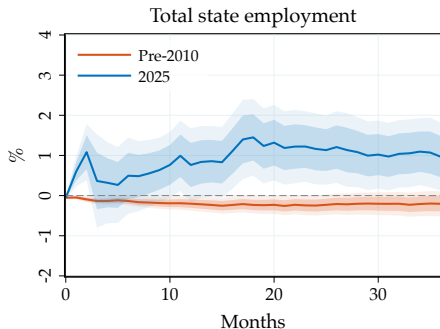
Other states



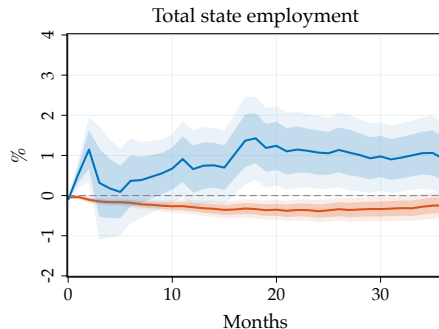
State-level responses at pre-2010 and 2025 trade balance. Shading: 68% and 90% confidence intervals.

State-level employment: total

Oil-producing states

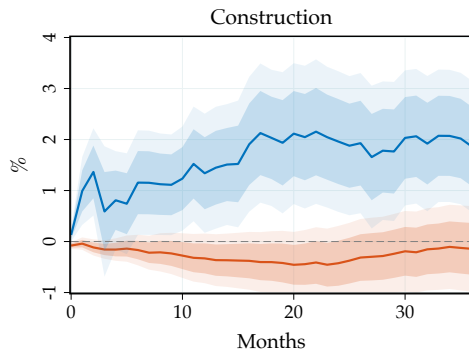
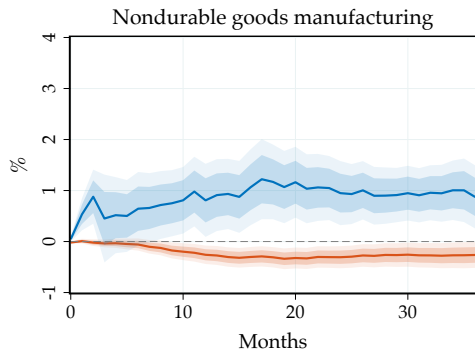


Other states



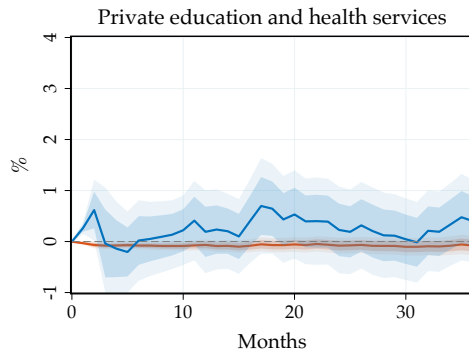
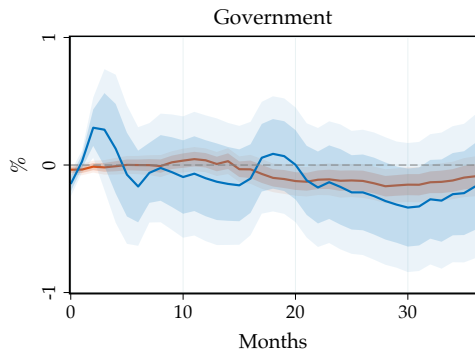
State-level responses at pre-2010 and 2025 trade balance. Shading: 68% and 90% confidence intervals.

Employment: nondurable manufacturing and construction



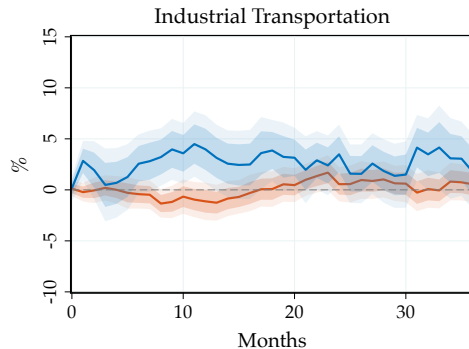
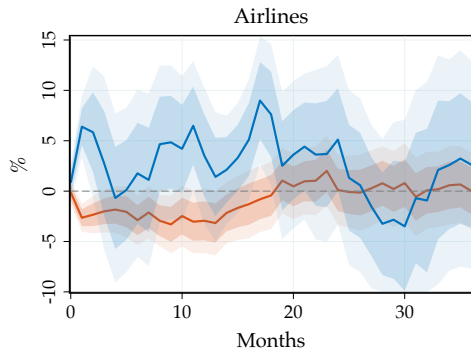
Responses at pre-2010 and 2025 trade balance. 10% oil shock. Shading: 68% and 90% confidence intervals.

Employment: government and private education and health



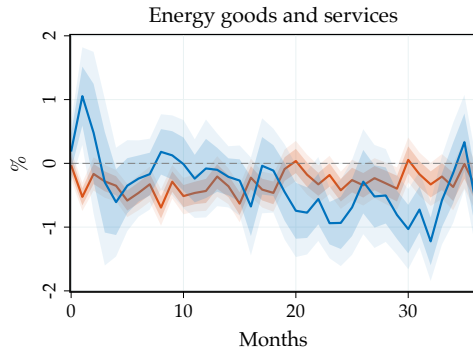
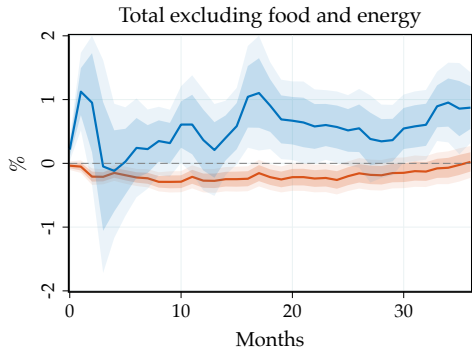
Responses at pre-2010 and 2025 trade balance. 10% oil shock. Shading: 68% and 90% confidence intervals.

Stock prices: airlines and industrial transportation



Responses at pre-2010 and 2025 trade balance. 10% oil shock. Shading: 68% and 90% confidence intervals.

Consumption: excluding food and energy versus energy



Responses at pre-2010 and 2025 trade balance. 10% oil shock. Shading: 68% and 90% confidence intervals.

Stock-market wealth effect: back of the envelope

- MPC out of stock-market wealth: 3.2 cents per dollar

MPC from Chodorow-Reich, Nenov and Simsek (AER, 2021)

- Equity wealth: 3.2× annual consumption
- Equity response at 2025 trade position: +2%
- Implied increase in consumption from stock-market wealth alone:

$$0.032 \times 3.2 \times 0.02 \approx 0.2\%$$