

Federal Reserve Bank of Dallas

Energy Markets, Geopolitics, and Transitions

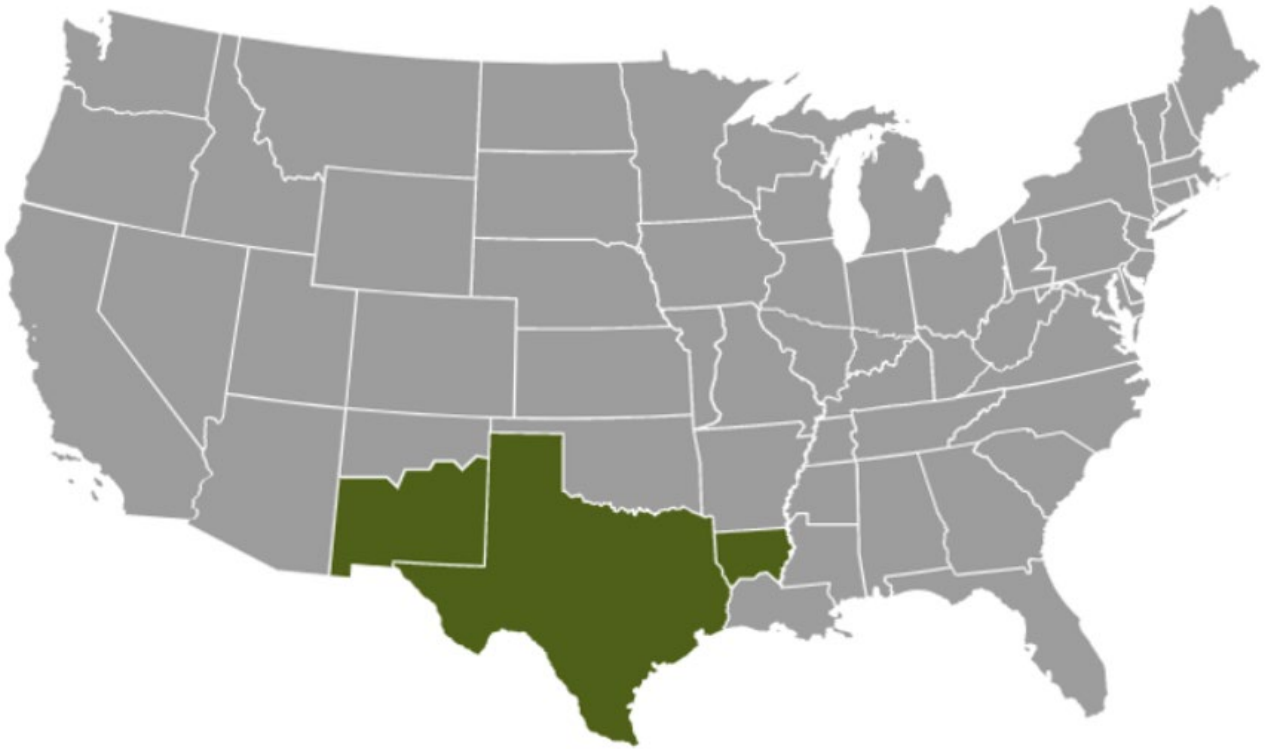
Garrett Golding
Senior Business Economist

February 22, 2023

The views expressed are my own and do not necessarily reflect official positions of the Federal Reserve System.

The Dallas Fed

- Team of 40 economists producing research and data for the public
- Advise Dallas Fed President on monetary policy and the economy
- *Dallas Fed Economics* blog features short research notes on energy, monetary policy, banking, housing, immigration, trade, employment, and other economic topics



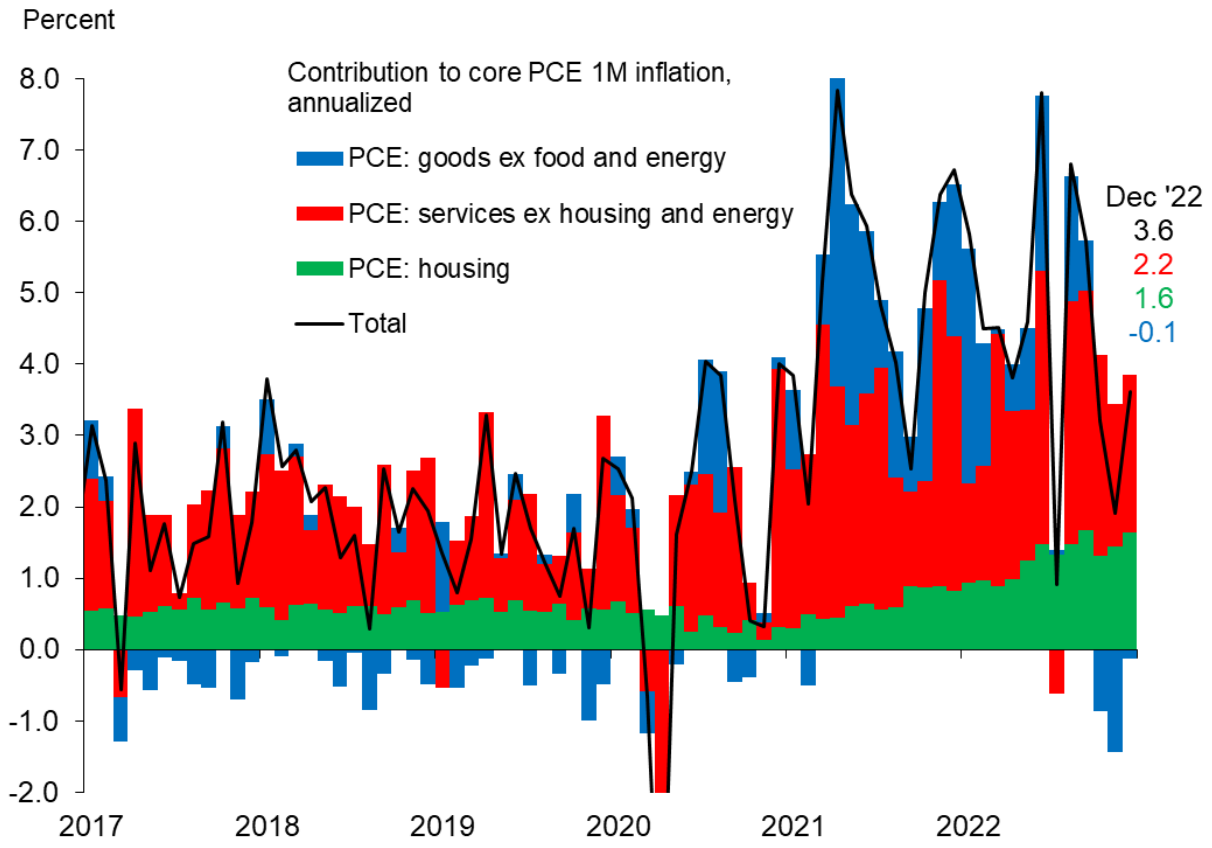
Economic Overview

3 Questions Facing the Economic Outlook

- Is inflation slowing?
  - Yes, but towards what rate?
- Are supply and demand coming back into balance?
  - Labor market tightness peaked in early 2022, but recent cooling has been very slow
- Can this be achieved without a large increase in unemployment?
  - Uncertain

Economic Overview

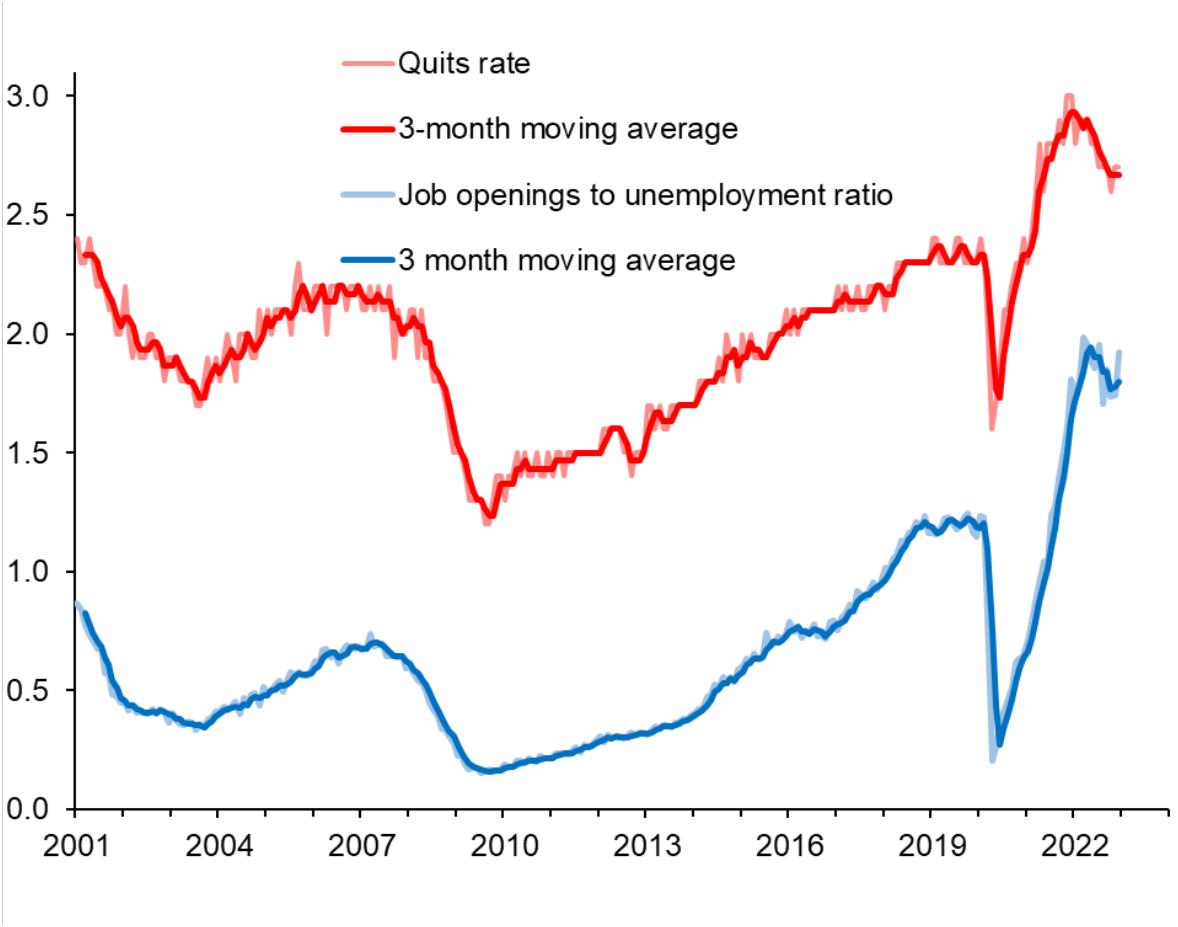
Decomposition of Monthly Inflation Data, And The Path Ahead



- 1-month inflation was slower over Oct-Dec, core PCE averaged 2.9%.
- Finally, supply chain improvement is pushing down on goods prices.
- Housing inflation is still rapid, but cooling will show up in inflation after about a year.
- What happens to other services prices?

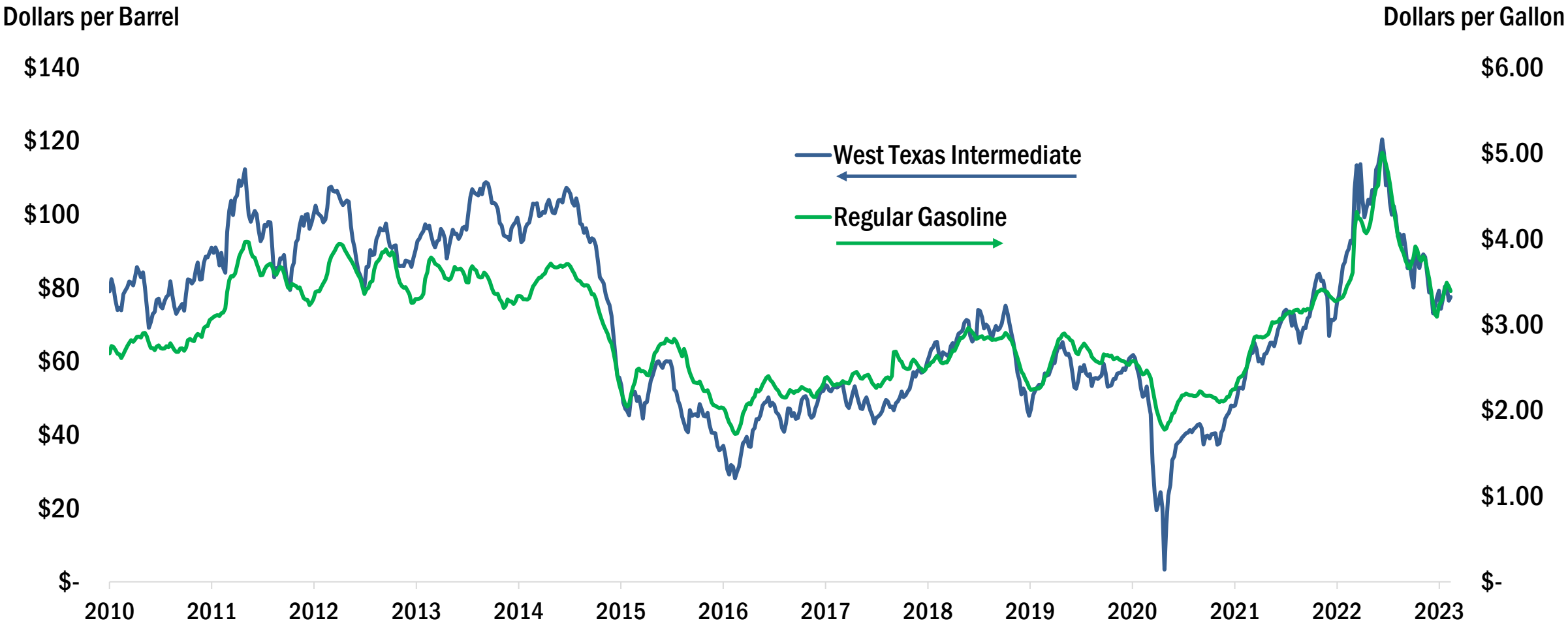
Economic Overview

Labor Market Remains Historically Tight, Slow Pace of Cooling



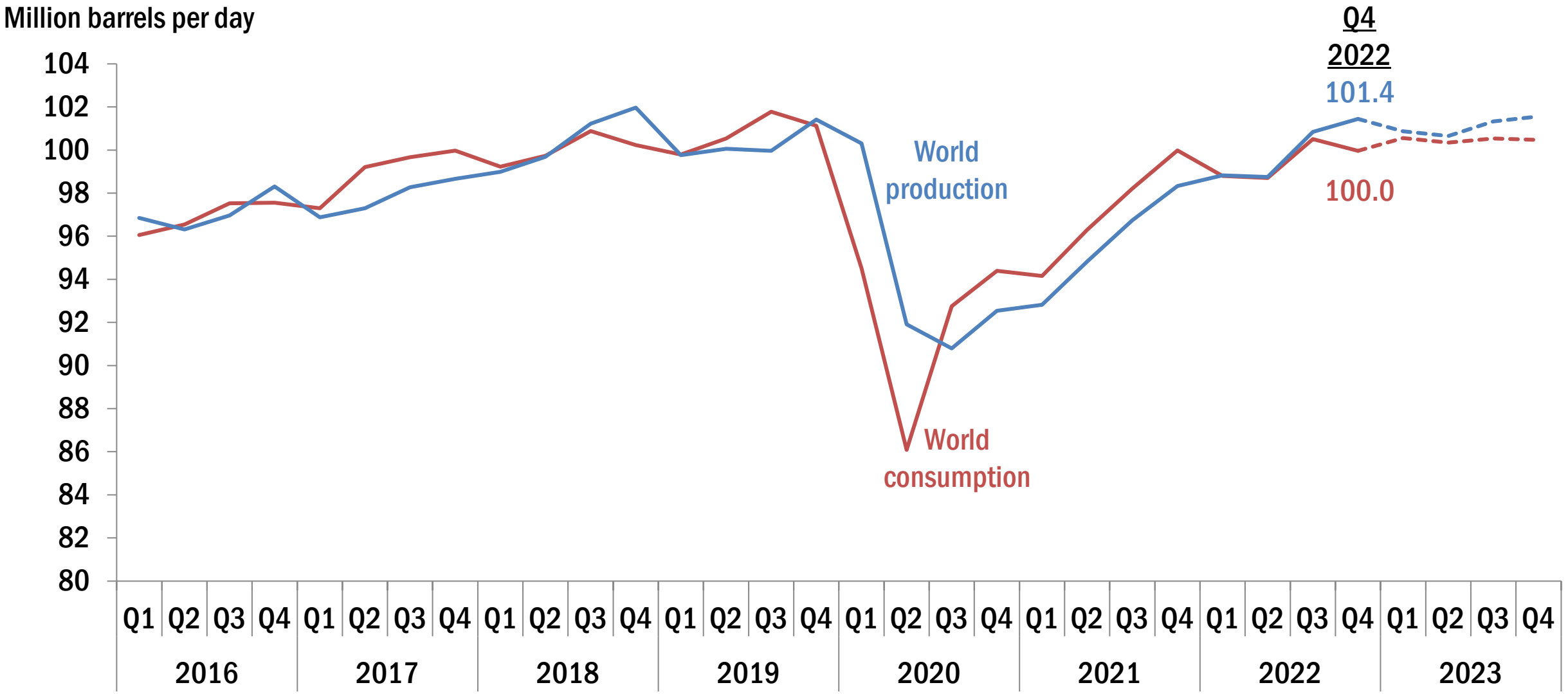
- Unemployment and employment have been unreliable indicators of labor market slack/overheating since 2020.
- Alternative indicators, like quits and openings, signaled a historically tight labor market in 2021, which cooled in the first half of 2022.
- Progress stalled in the second half of 2022 at an extremely tight level.
- Firms remain understaffed.

Oil and Gasoline Prices



Source: EIA
Note: West Texas Intermediate prices are weekly average spot prices. Regular Gasoline the weekly U.S. national retail price average for all formulations.

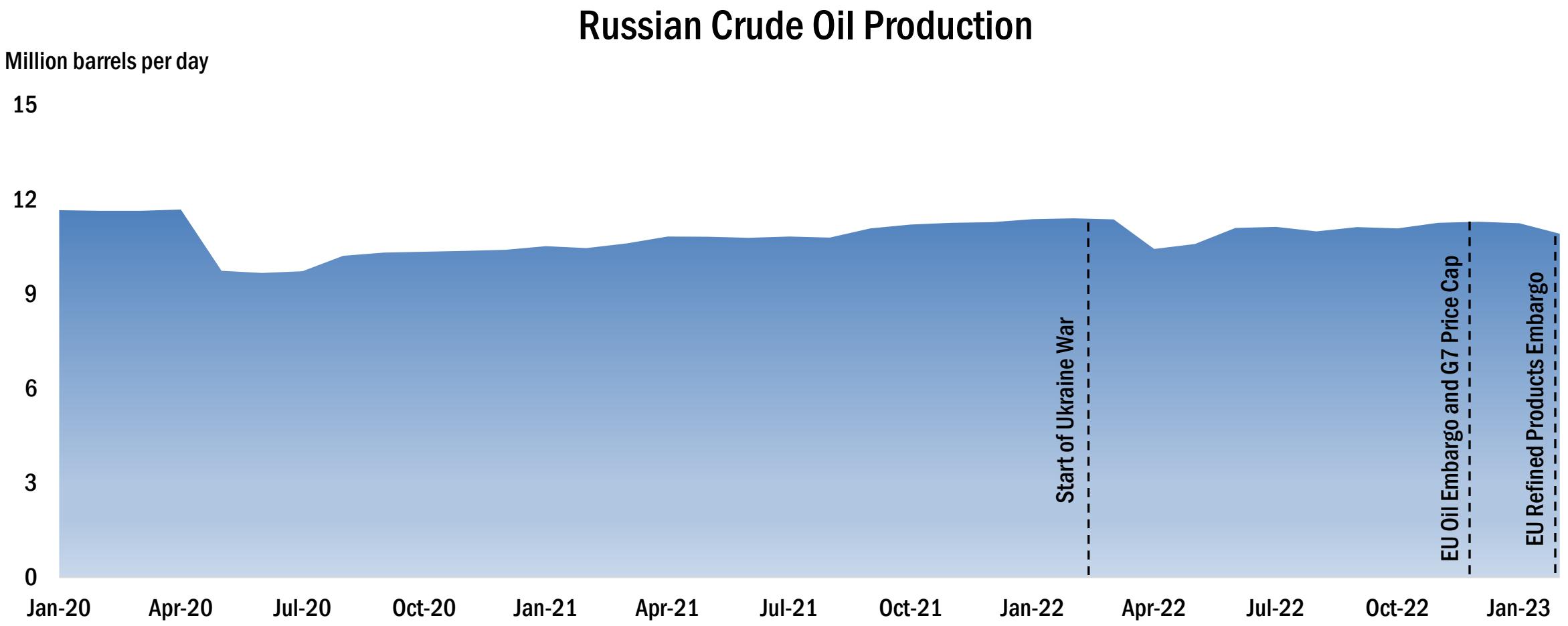
Global Oil Balance



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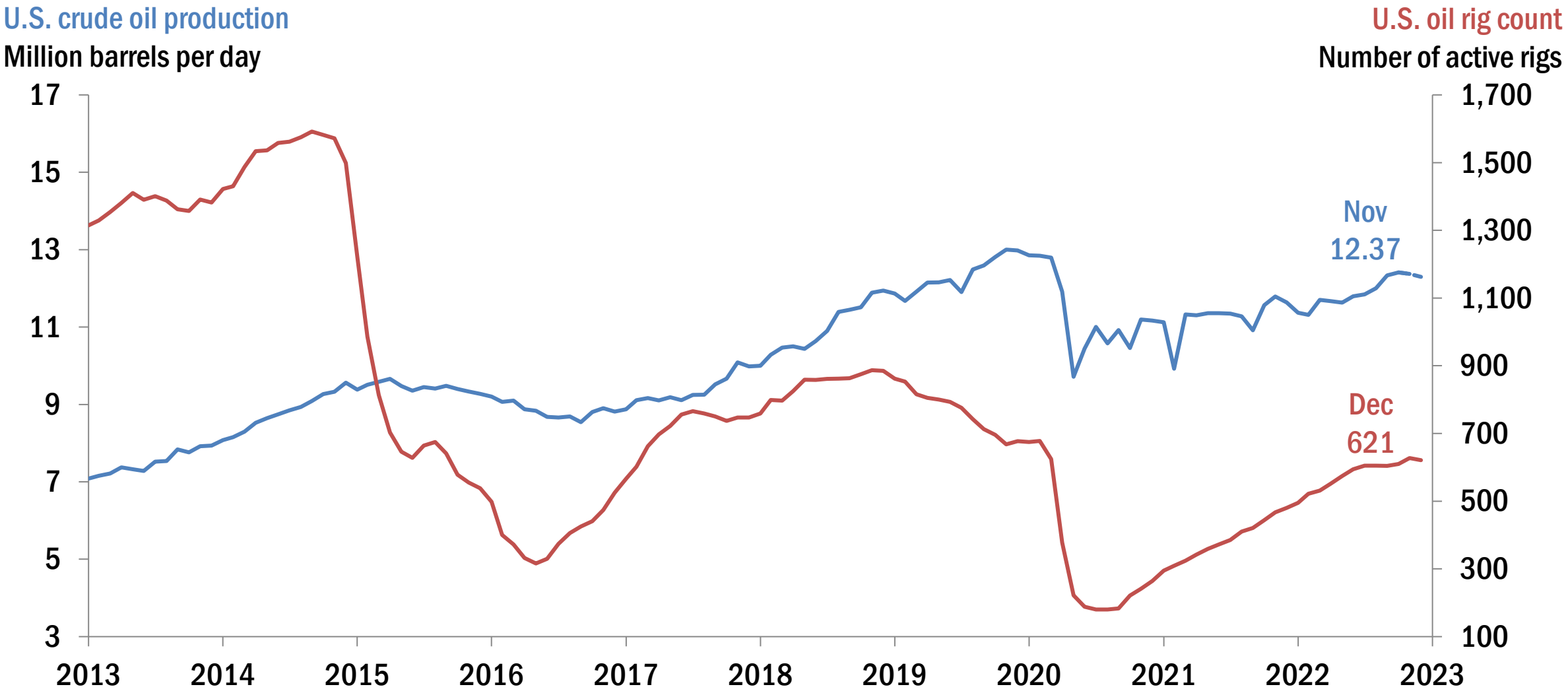
Source: EIA

The Russian Oil Disruption of 2022 (not really)



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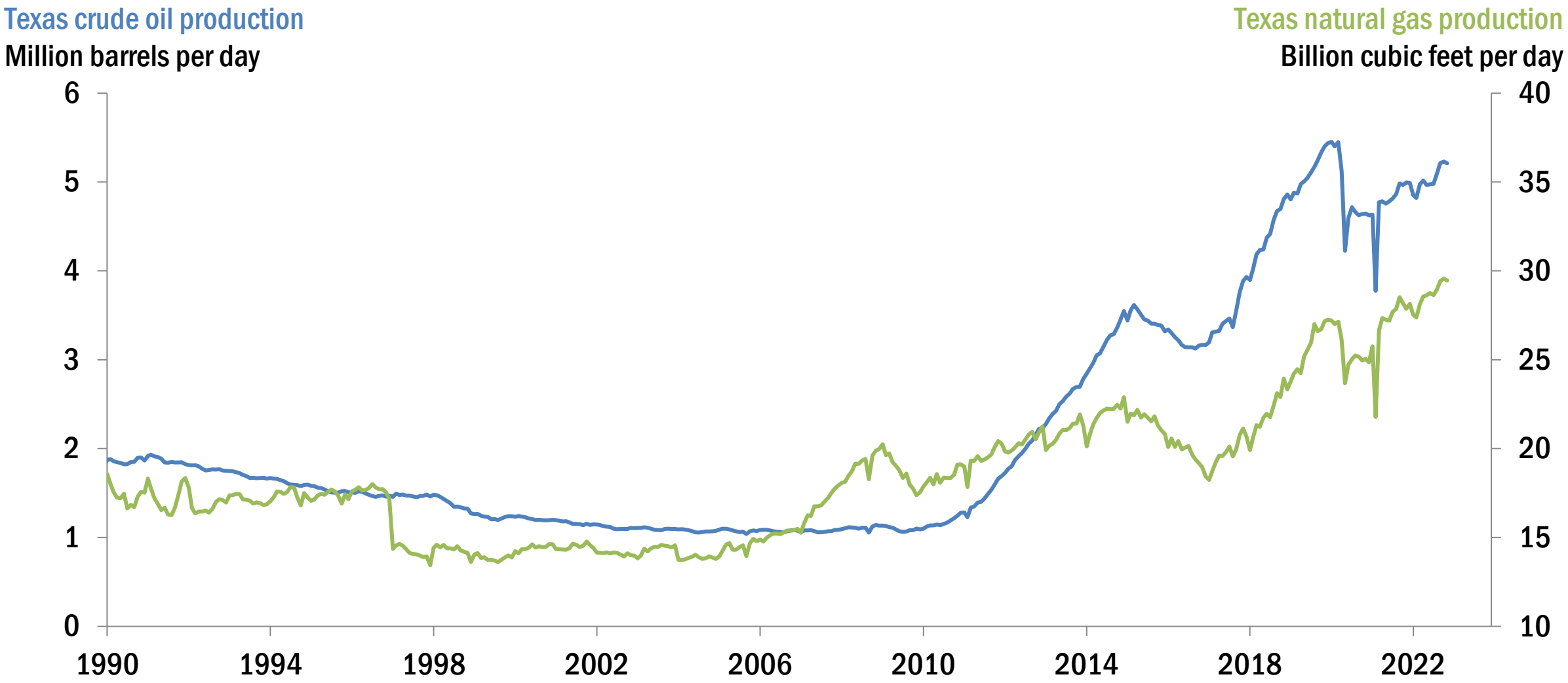
US Oil Production Growth Slowing



Source: EIA

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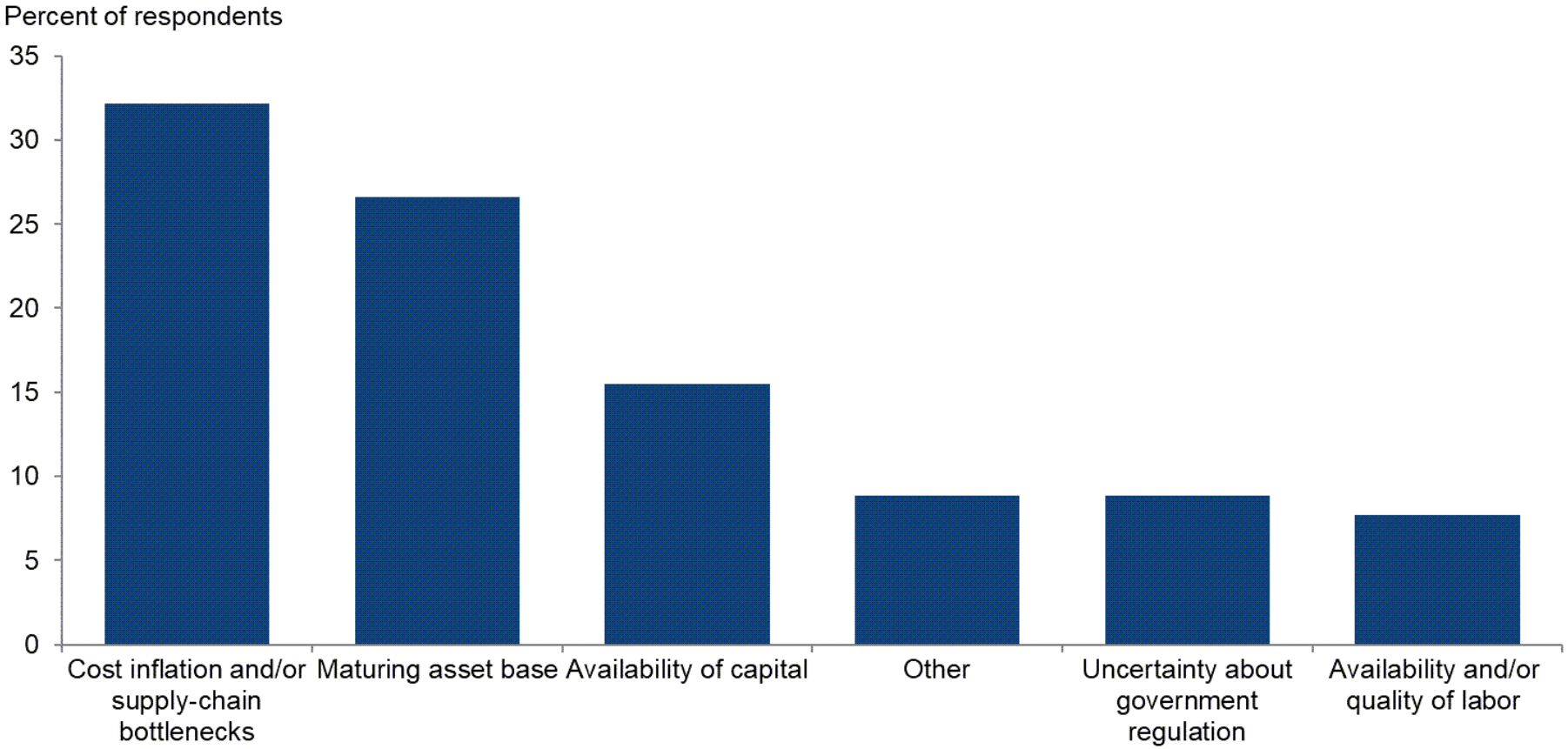
Texas Oil & Gas Production



Source: EIA

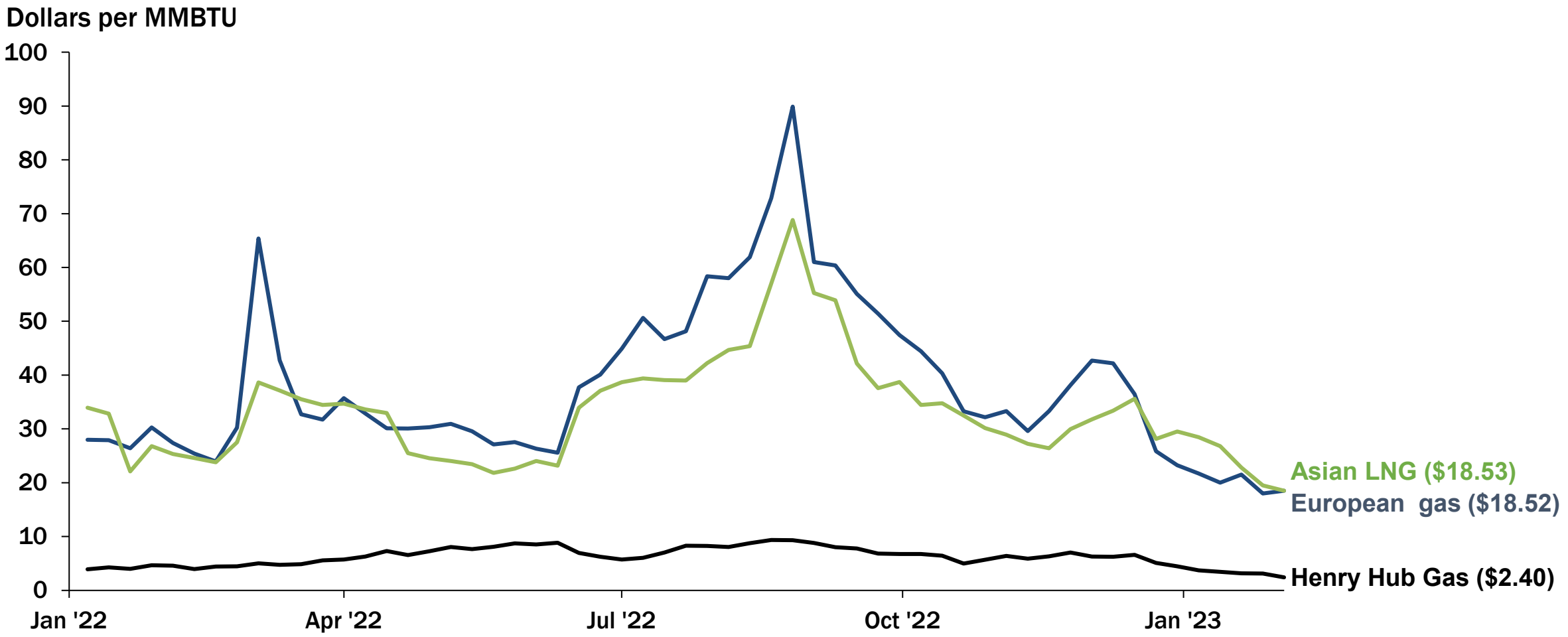
Dallas Fed Energy Survey

Which of the following is the biggest drag on crude oil and natural gas production growth for your firm?



NOTE: Executives from 90 exploration and production firms answered this question during the survey collection period, Dec. 7–15, 2022.
SOURCE: Federal Reserve Bank of Dallas.

A Tale of Three Gas Markets

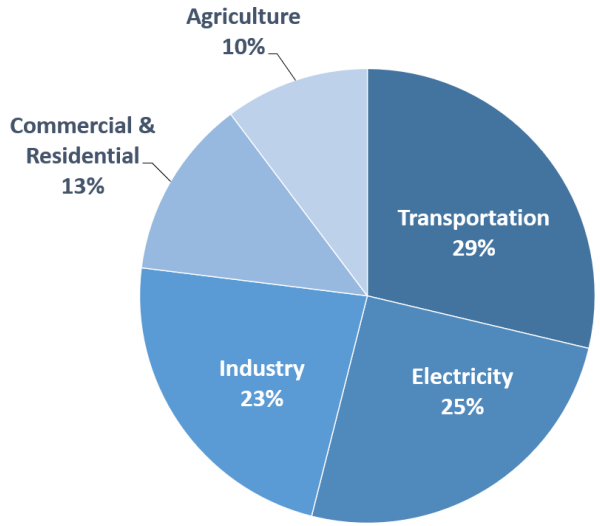


Note: MMBTU stands for million british thermal units.
Source: Bloomberg. S&P Platts, author's calculations.

The Energy Transition

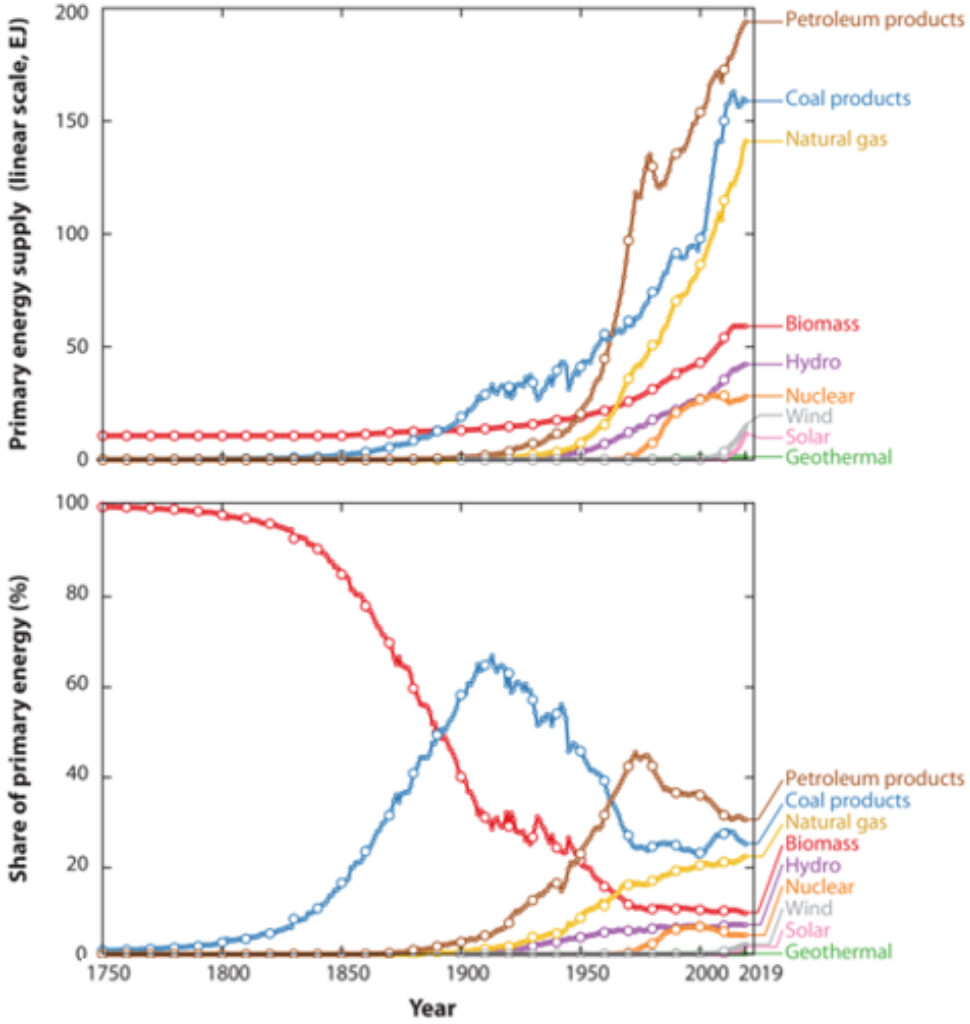
- Global growth demands more energy in every form
- Goldman Sachs: $3.8T in renewables investment over 10 years has reduced overall fossil fuel consumption by 1%
- 1.2 billion passenger cars make up only 9% of global GHG emissions
- Emissions go far beyond oil & gas – *there is no silver bullet*

Total U.S. Greenhouse Gas Emissions by Economic Sector in 2019



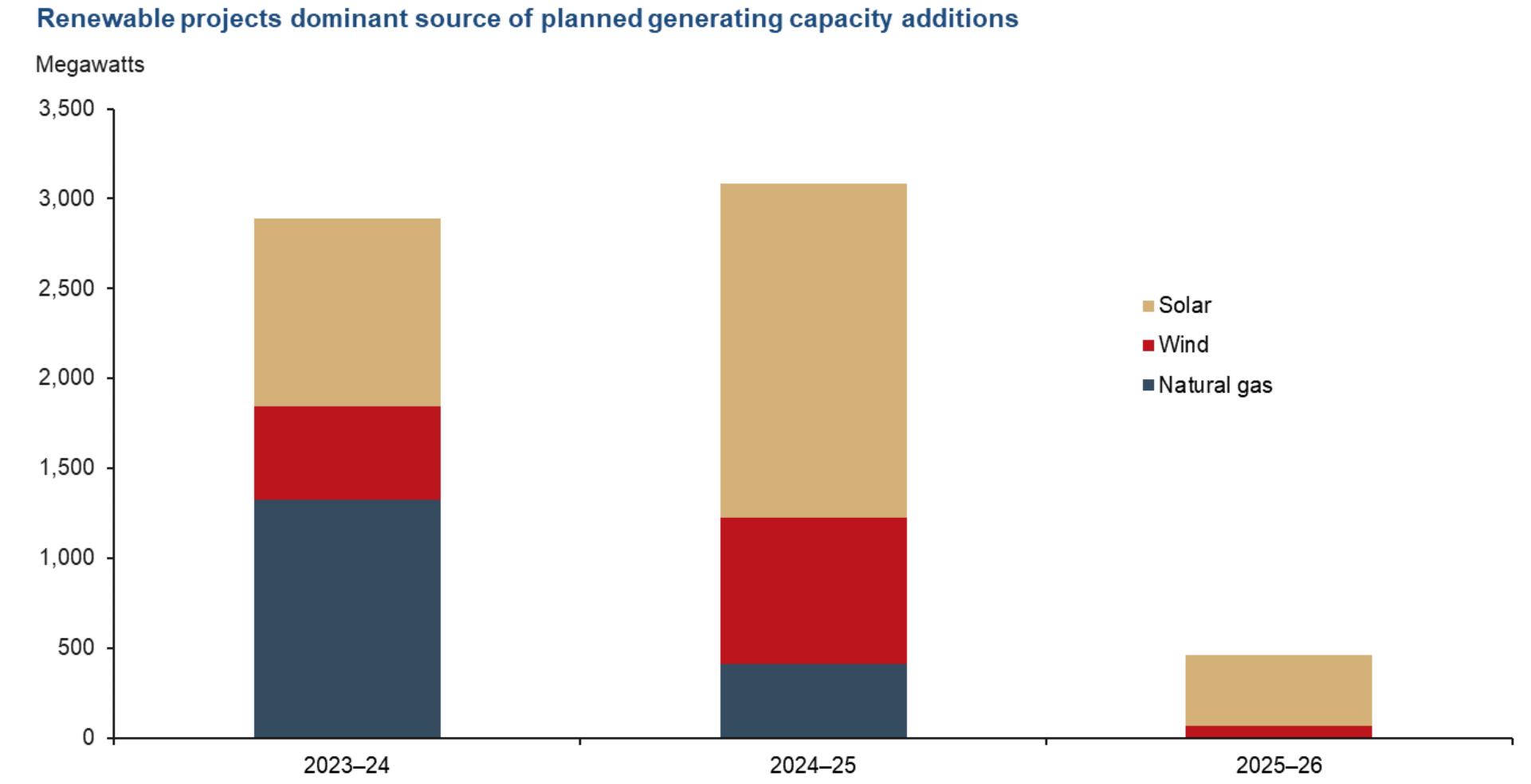
U.S. Environmental Protection Agency (2021). Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2019

Primary Energy Supply, 1750-2019



Source: Three Decades of Climate Mitigation: Why Haven't We Bent the Global Emissions Curve? by Stoddard et al., 2021, *Annu. Rev. Environ. Resour.* 46:653-89, Licensed under CC BY 4.0.

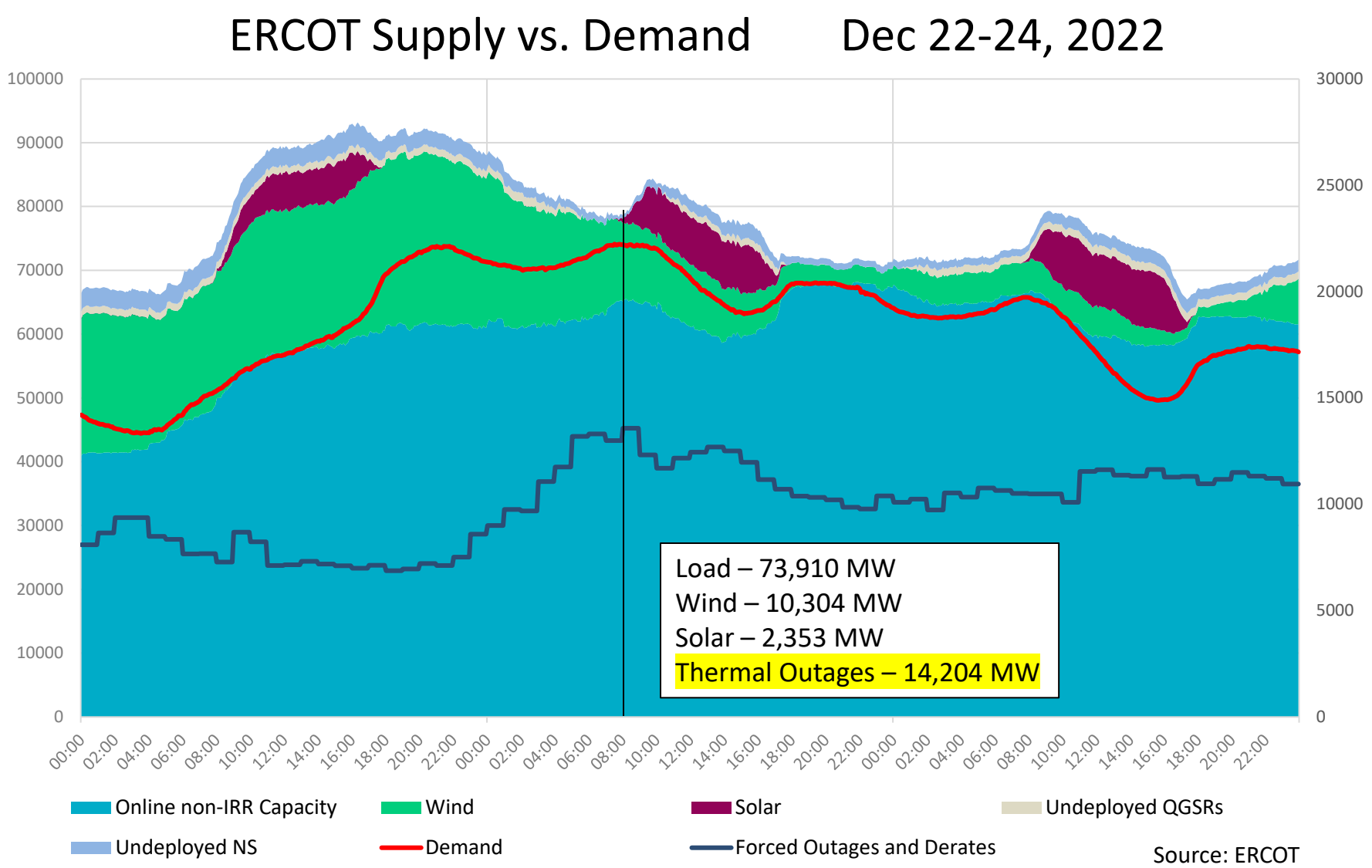
Renewables Integration in ERCOT



NOTE: Figures are annual additions of expected winter generating capacity.
SOURCE: Electric Reliability Council of Texas.

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Texas Grid Remains Vulnerable



Source: ERCOT

What is Energy Independence?



- U.S. will never fully disconnect from global oil markets
- Reducing oil demand with EVs presents other energy security challenges:
  - Three countries produce 86% of global lithium
  - Three countries produce half of the world's nickel
  - One country responsible for 70% of all cobalt
  - China controls 90% of rare earth magnet supply and polysilicon processing
- Inflation Reduction Act attempts to rectify these dependencies
- Electrification means more commodity demand, possible "green inflation"



Questions

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