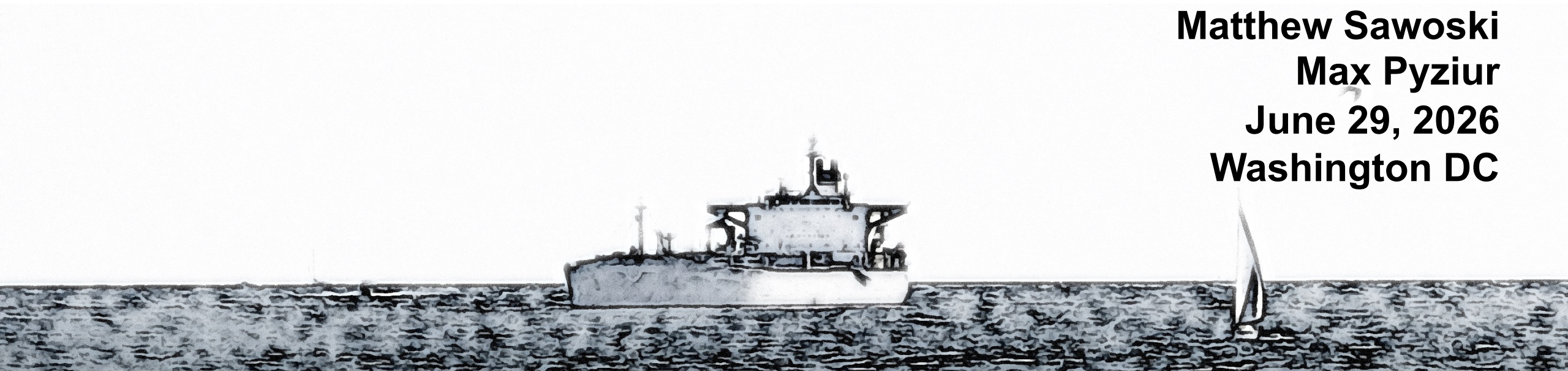


U.S. Energy Security in view of Hormuz

Rethinking Energy Security And Energy Supply Disruptions

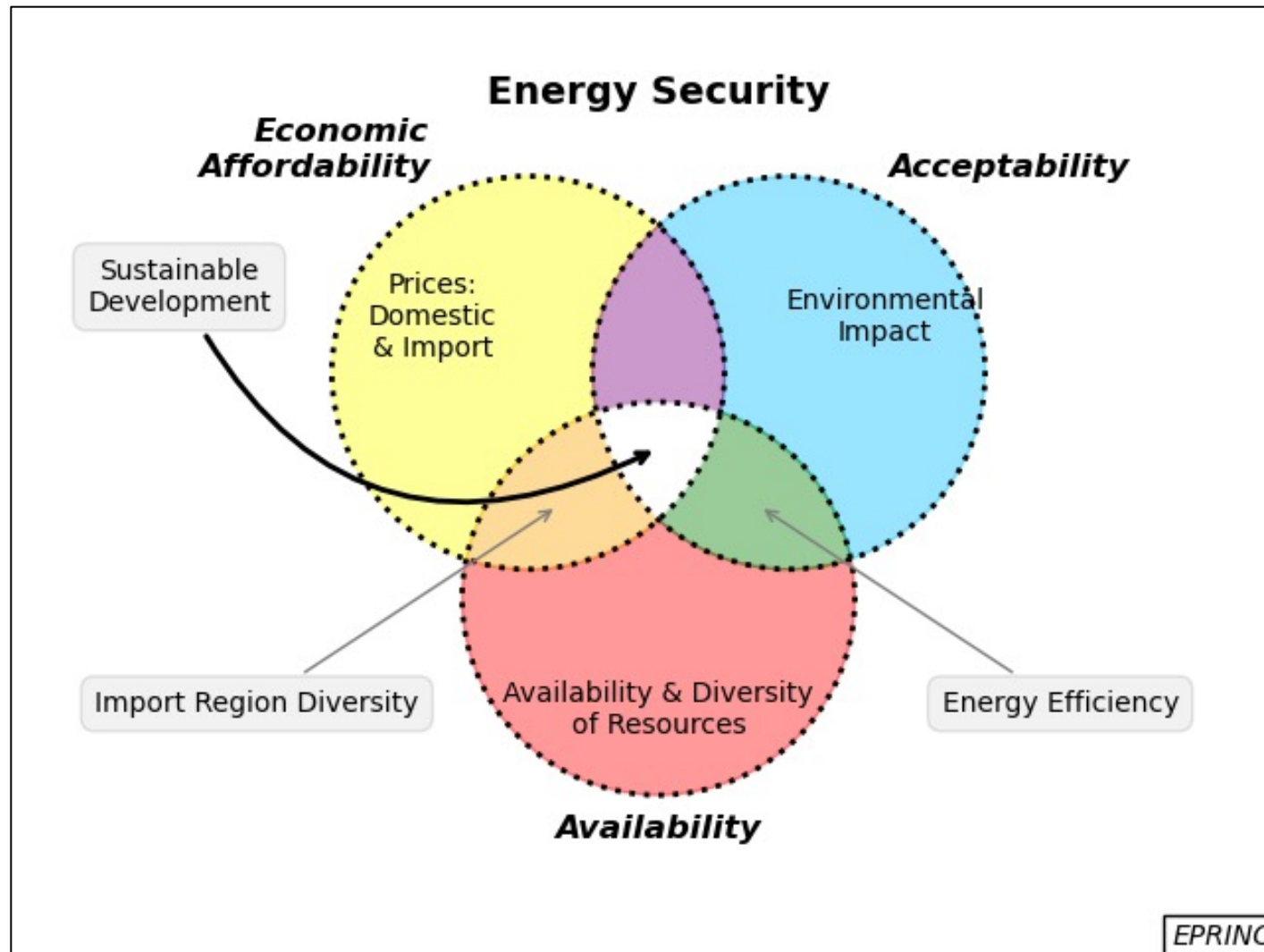
Matthew Sawoski
Max Pyziur
June 29, 2026
Washington DC



What is Energy Security?

Q: Are there the potential for events outside of a country's control that so profoundly affect its' energy system to force unacceptably unpalatable outcomes upon the nation?

The Standard “Trilemma” of Energy Security



Source: Sai, Furubayashi, Nakata, and others

This can be made into a Mathematical Index (if you like)

$$\text{Energy Security} = \beta_1 AER + \beta_2 PDI + \beta_3 IRD + \beta_4 EI + \beta_5 EE$$

Where:

AER = Availability & Diversity of Energy Resources

PDI = Prices – Domestic & Import

IRD = Import Region Diversity

EI = Environmental Impact

EE = Energy Efficiency

β_{1-5} = Parameter Coefficients

Source: Sai, Furubayashi, Nakata, and others

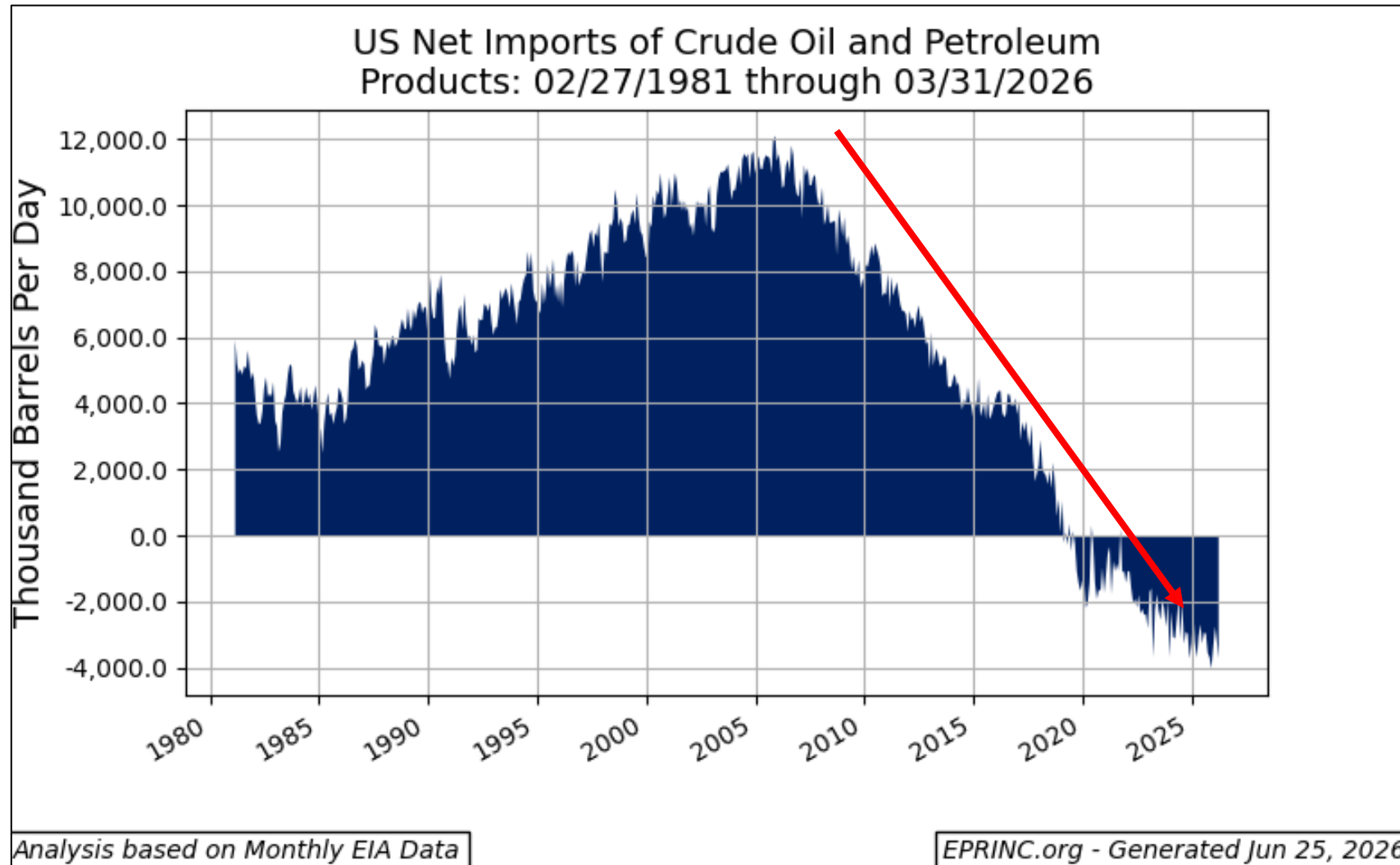
Energy Security Thinking, Old-School

The foundations of American Energy Security policy thinking were set down in the 1970s, realized with the birth of institutions like the SPR and IEA.

So what's changed in the last 50 years?



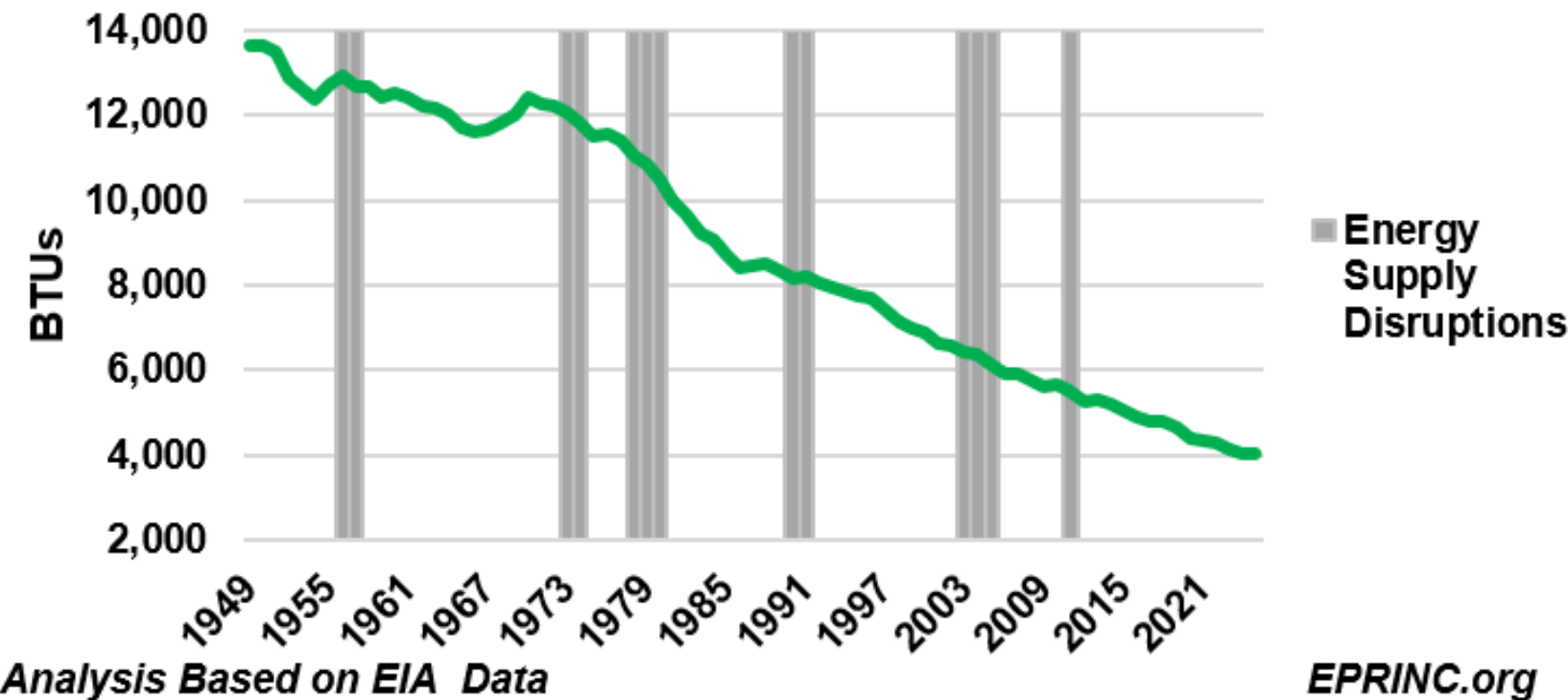
Legacy Notions of Energy Security: Import Dependence



U.S. Energy Security as Measured by Intensity

U.S. Energy Consumption (BTUs) per Dollar of GDP (2017 dollars)

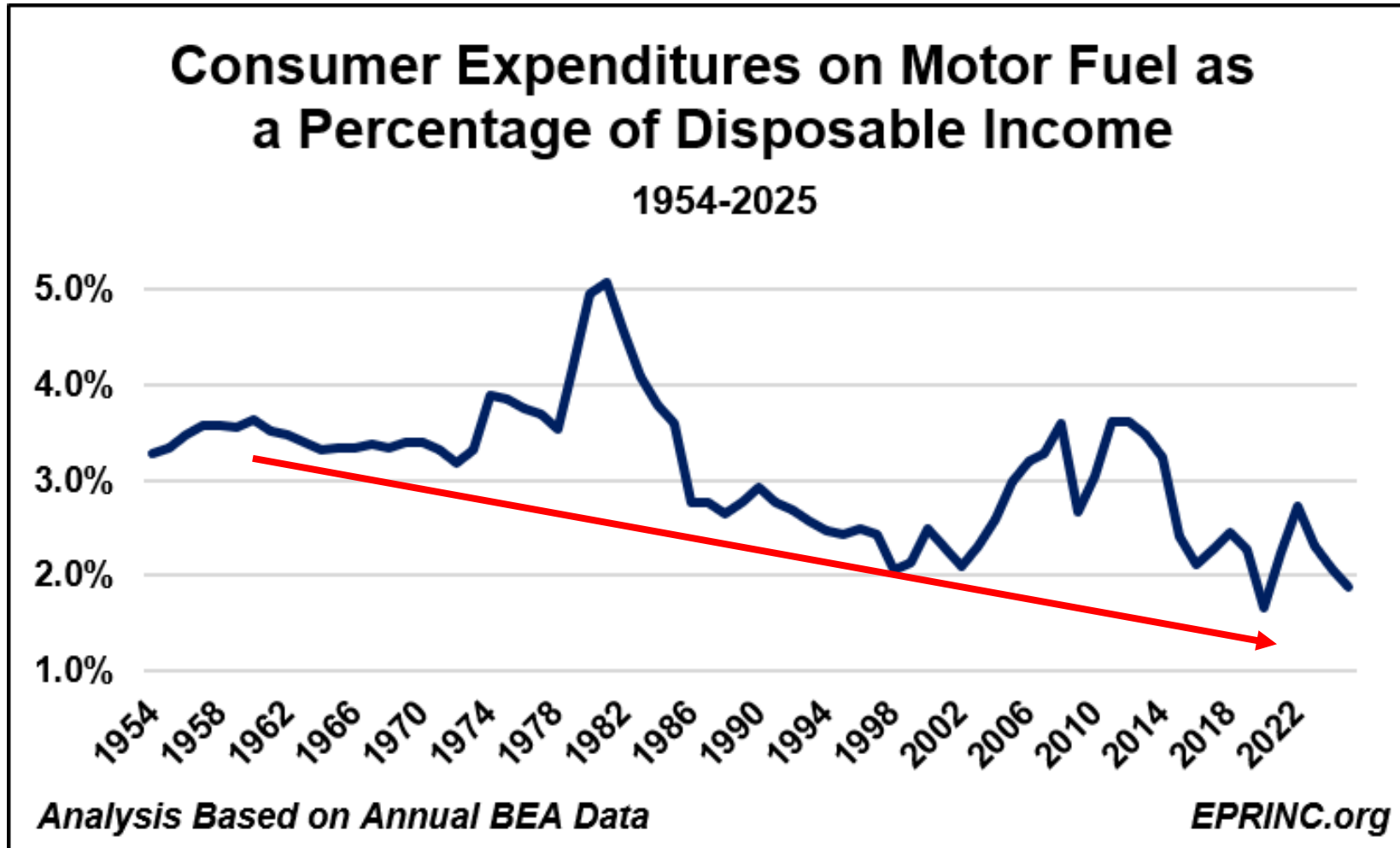
1949 - 2025



Key Global Energy Supply Disruptions		
Year(s)	Event	MB/d
1956 - 1957	Suez Crisis	2.0
1973 - 1974	Arab Oil Embargo	4.3
1978 - 1981	Iranian Revolution	5.6
1990 - 1991	Iraq Invasion of Kuwait	4.3
2003 - 2005	Iraq War	2.3
2011	Libyan Civil War	1.5

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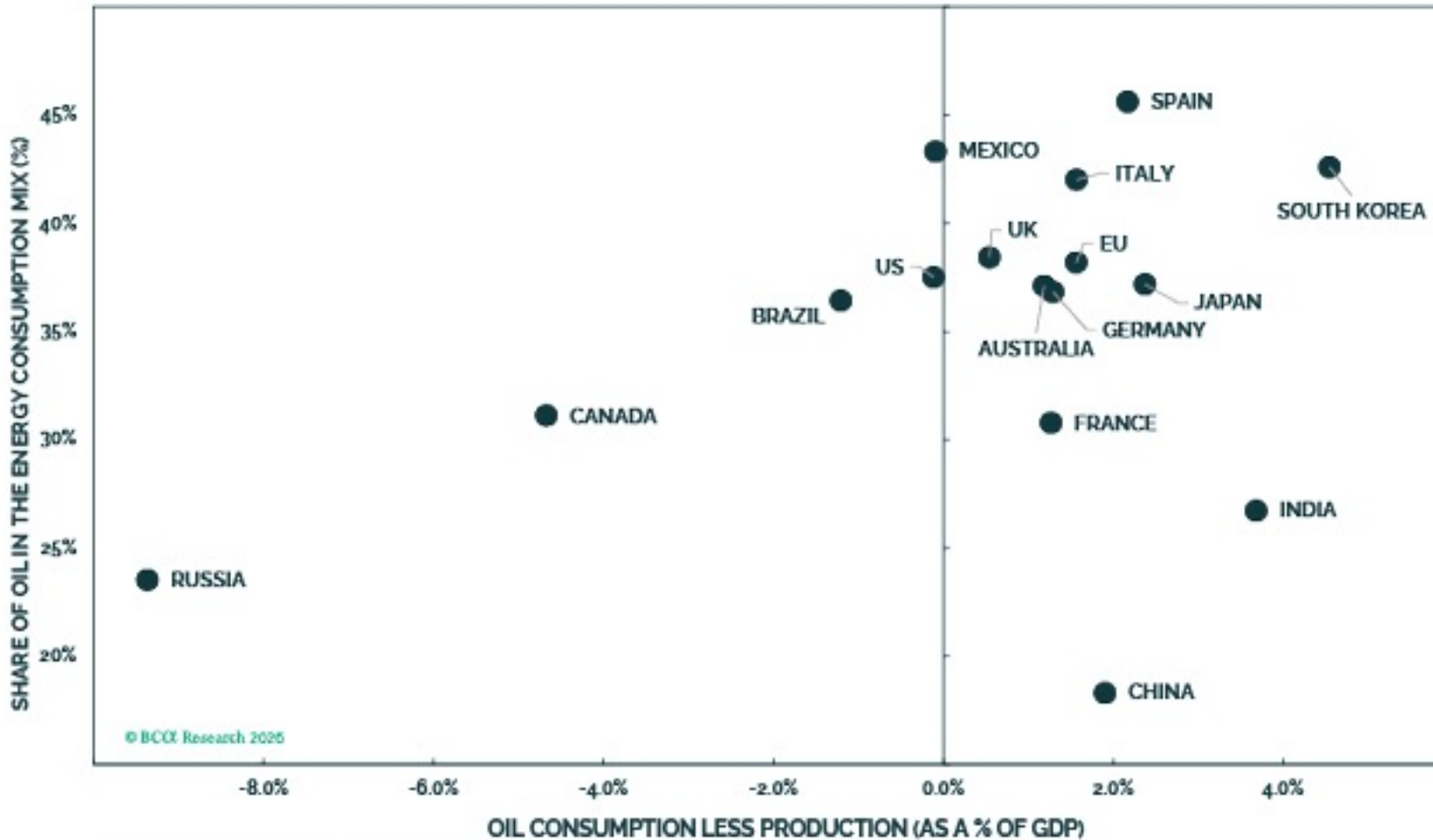
Notions of Energy Security: Affordability



**Long-term trajectory is
downward.**

**But the spikes along
the way have led to
policy interventions.**

Oil Dependency of World's Major Economies



NOTE: ALL DATA IS FOR YEAR 2024.
SOURCE: ENERGY INSTITUTE STATISTICAL REVIEW OF WORLD ENERGY, IMF.

But our allies, and the global economy generally, are not as resources blessed as we are.

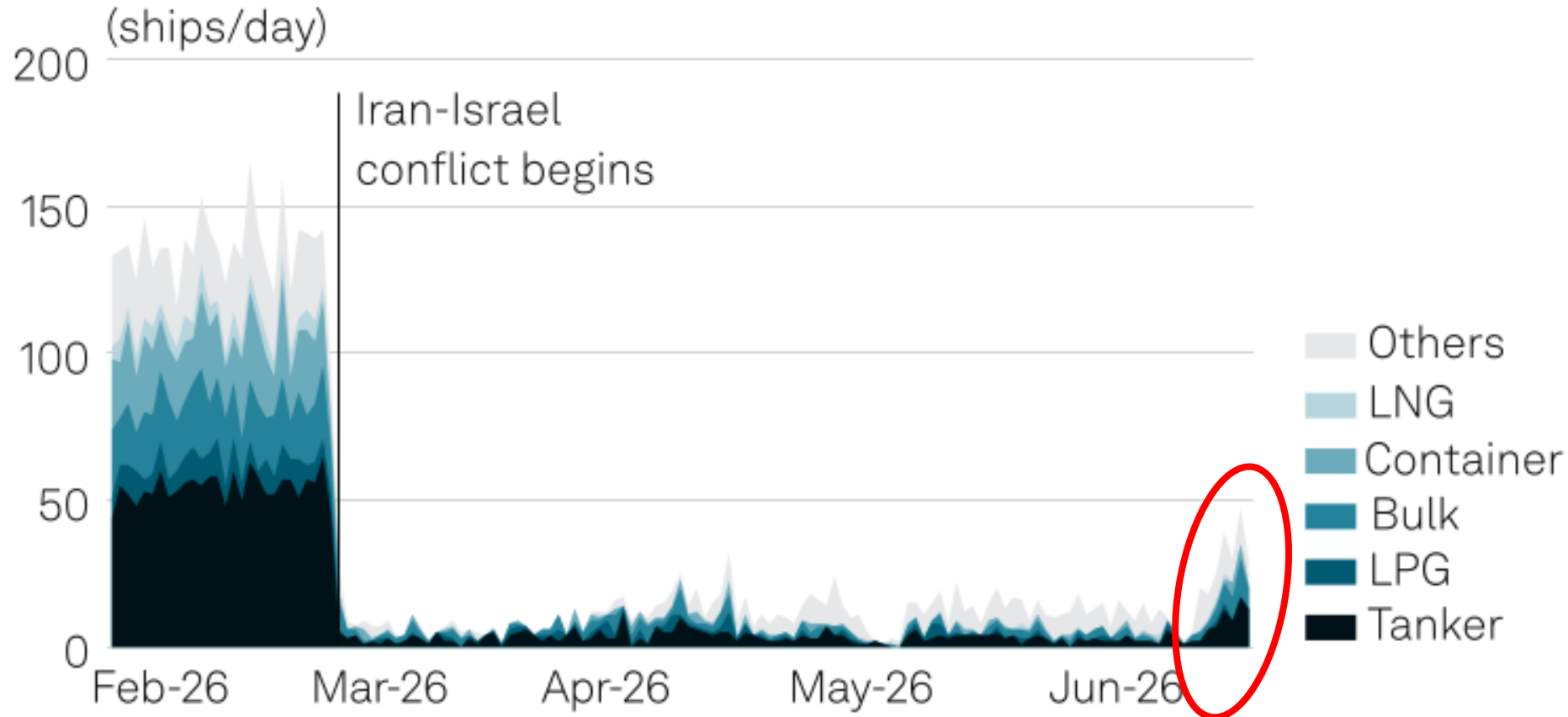
(Also remember, recessions happen all at once, not gradually)

So what have we learned?

- **The United States's energy security situation (at least on the affordability and availability metrics) is substantially improving over the long run, but is still vulnerable to short term disruptive shocks**
- **Hormuz is the cookie cutter example of a shock potentially maximally damaging to U.S. energy security.**

Traffic does seem to be creeping up in recent days

Ships crossing Strait of Hormuz, by type, daily count

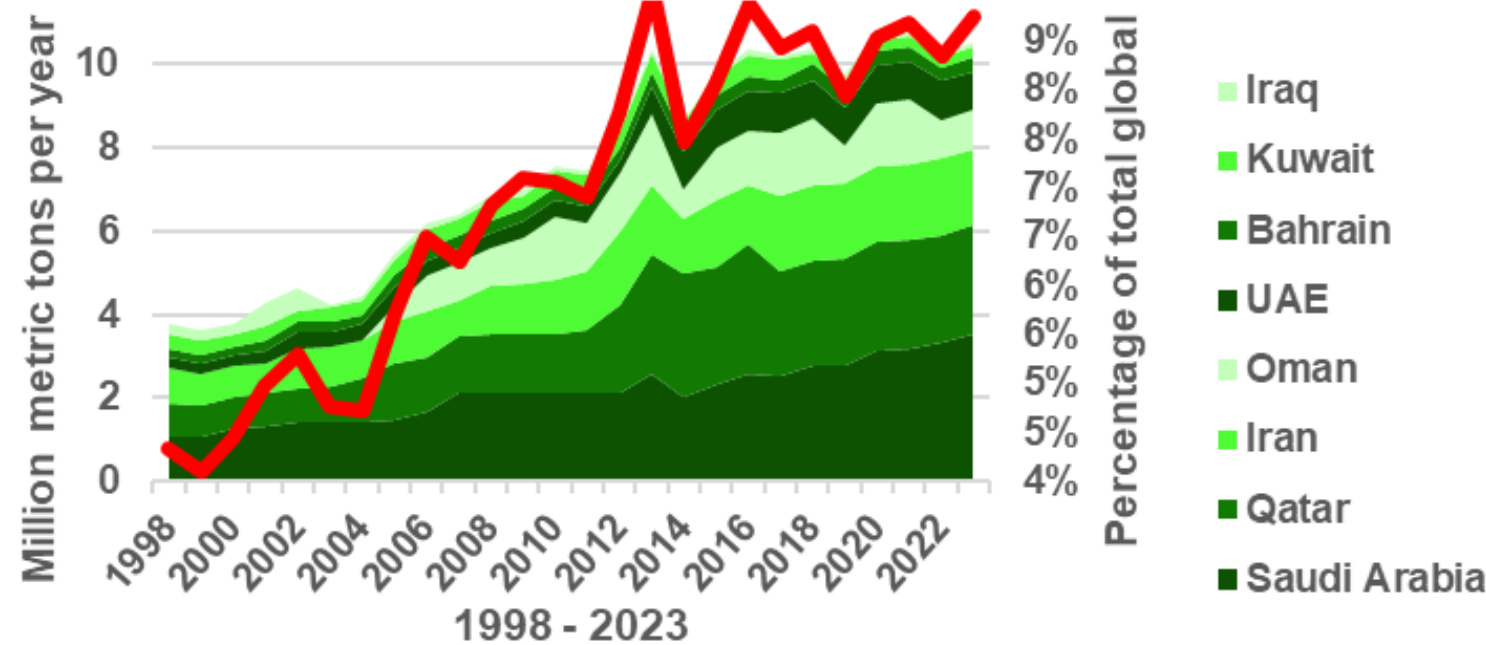


Source: S&P Global Commodities at Sea

Disruption effects EPRINC has been tracking

Nitrogen and Fertilizer

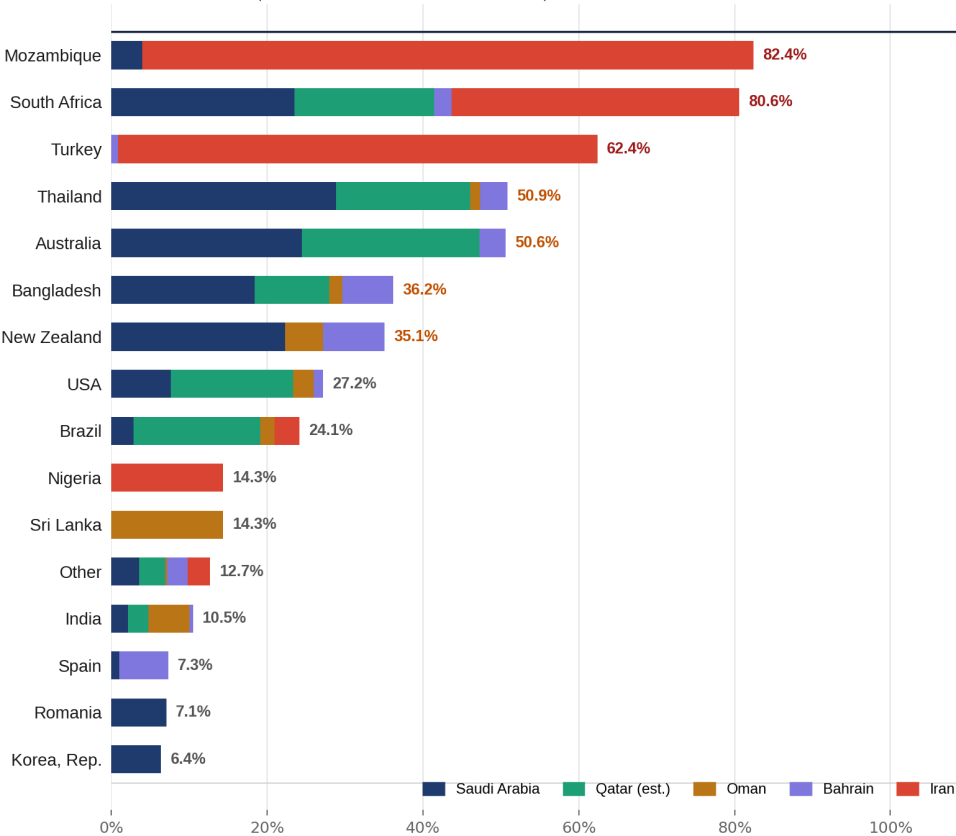
Gulf Nations' Nitrogen Fertilizer
Production & Percent of Total Global



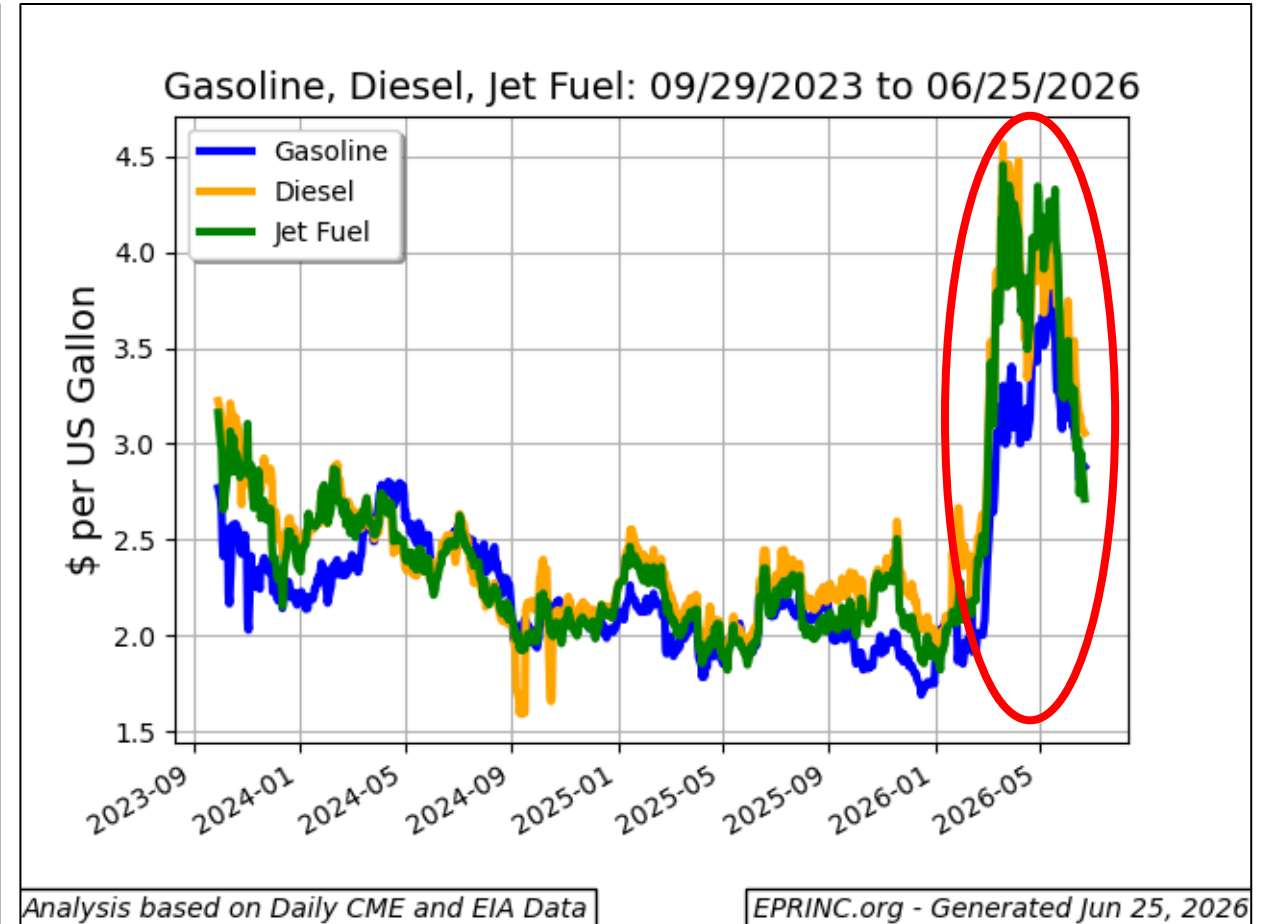
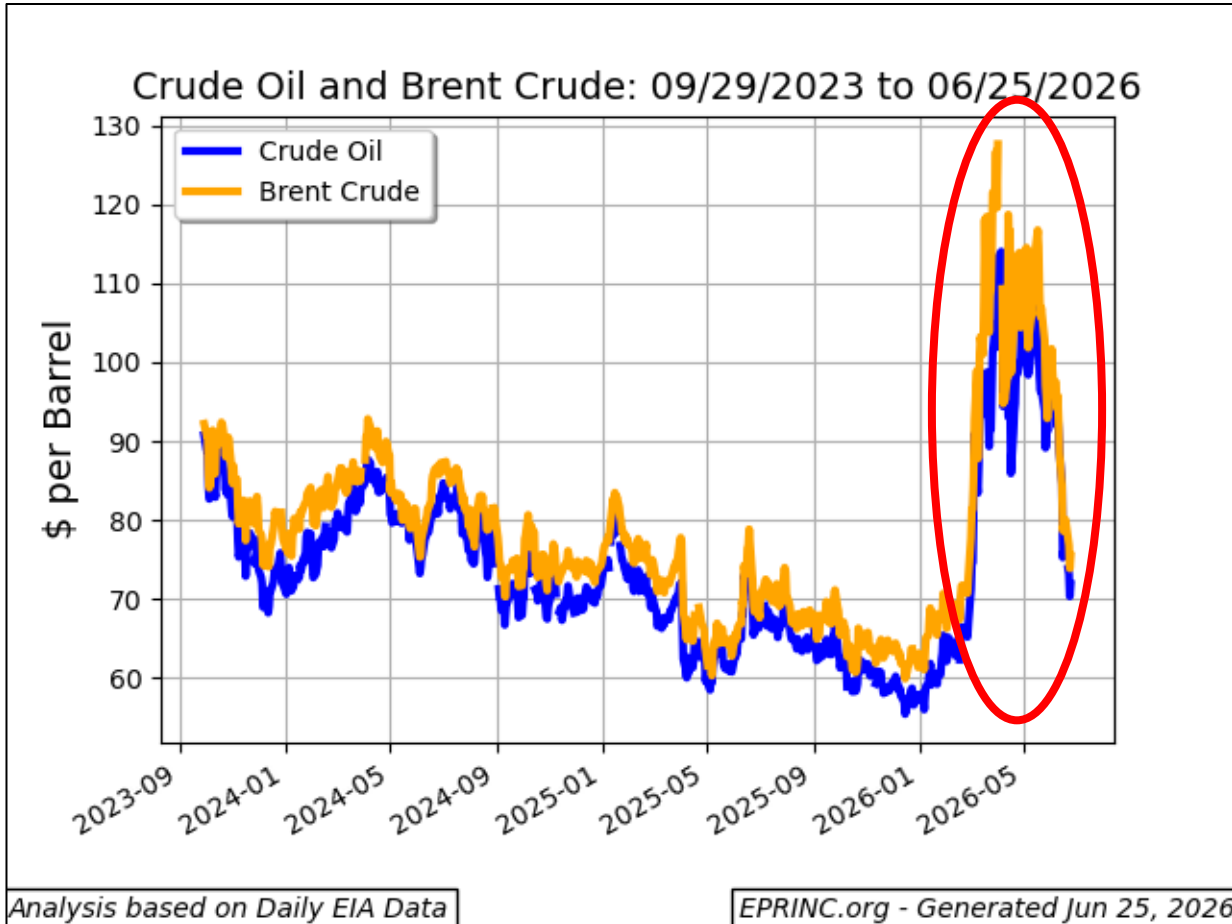
Source: Our World in Data

EPRINC.org

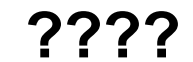
Gulf urea import exposure by destination country, 2022
% of total national urea consumption sourced from Hormuz-affected Gulf producers



The sustained effects would be catastrophic... but prices are going down?



**Energy Policy
Research Foundation**



Is the market telling us we're out the woods?

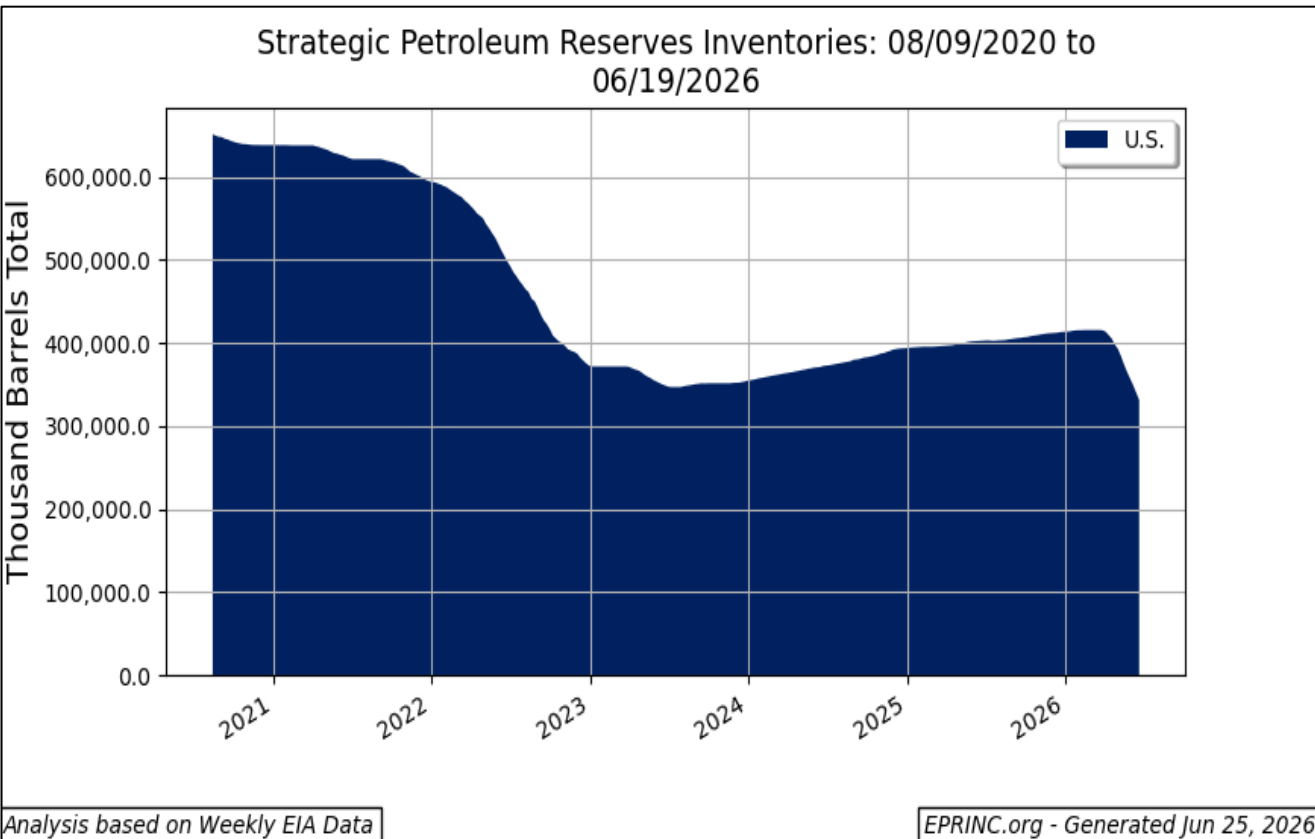
Two reasons for this:

- 1. Market is pricing in a quick resumption of Hormuz traffic, especially in light of the recent MOU**
- 2. Very effective U.S. government response mechanisms, cutting the effective shortfall by 2/3.**

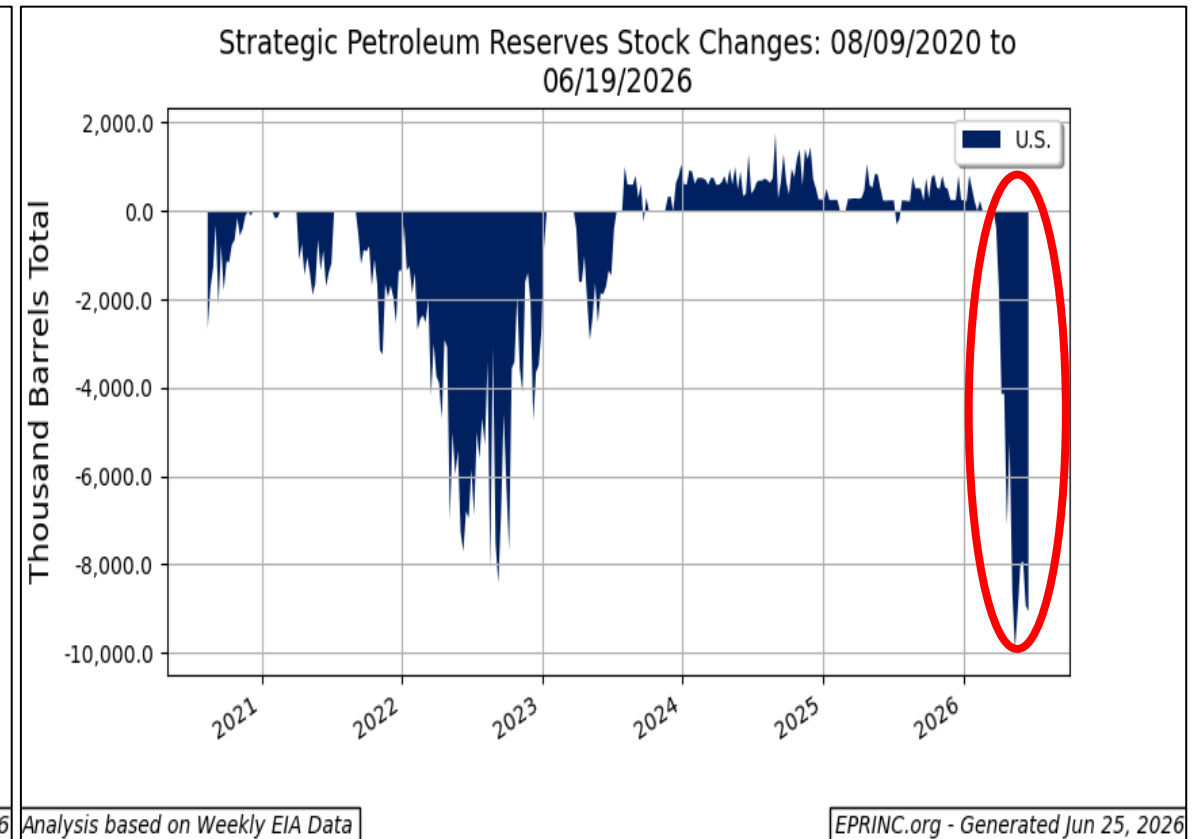
(Don't get your hopes up though; there are serious risks ahead)

This is exactly what the SPR is designed for

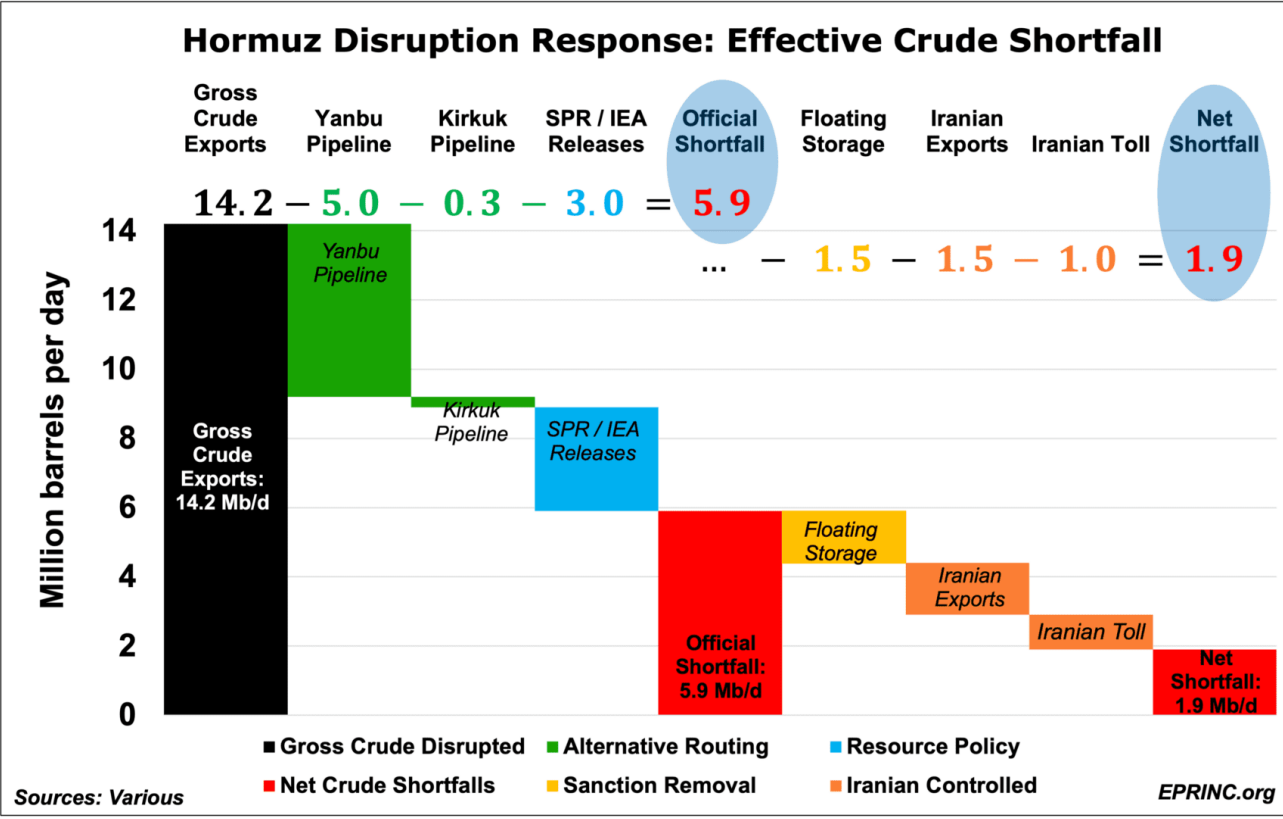
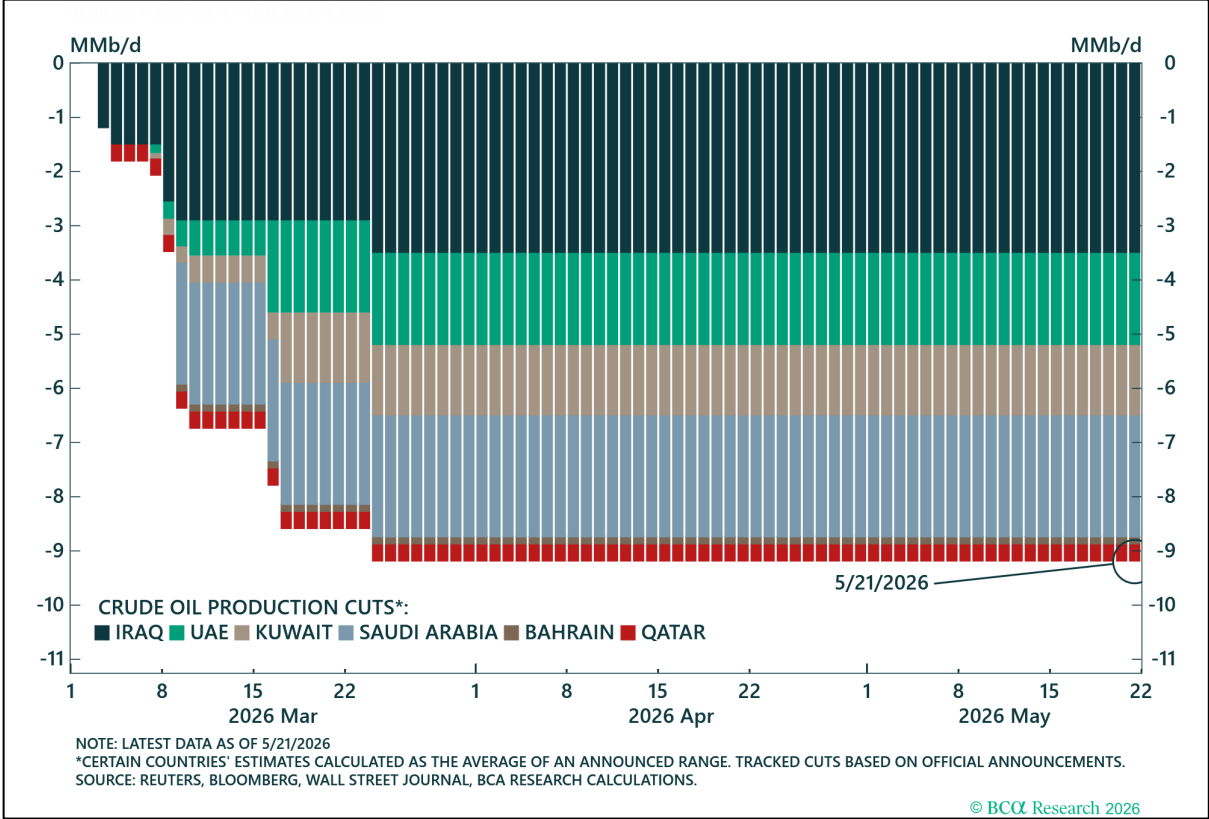
SPR Stock Levels



SPR Stock Changes



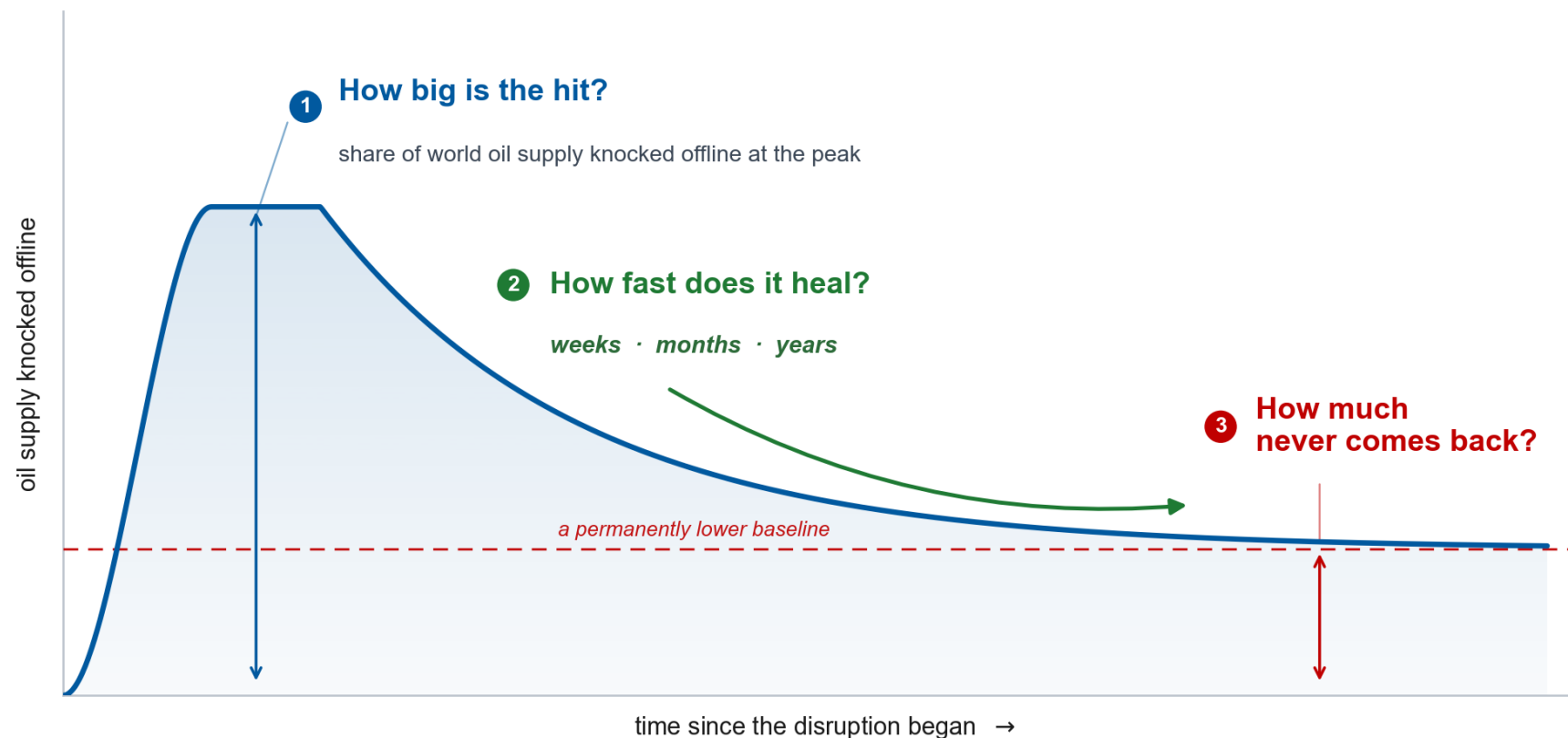
All together, the shortfall is less than the headline numbers might suggest



How to Compare Oil Disruptions?

The Anatomy of an Oil Supply Disruption

Every shock breaks down into three questions.



Schematic illustration. EPRINC analysis of EIA / IEA supply-loss data, 1956–2026.

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How to Compare Oil Disruptions?

Major oil supply disruptions, ranked by size

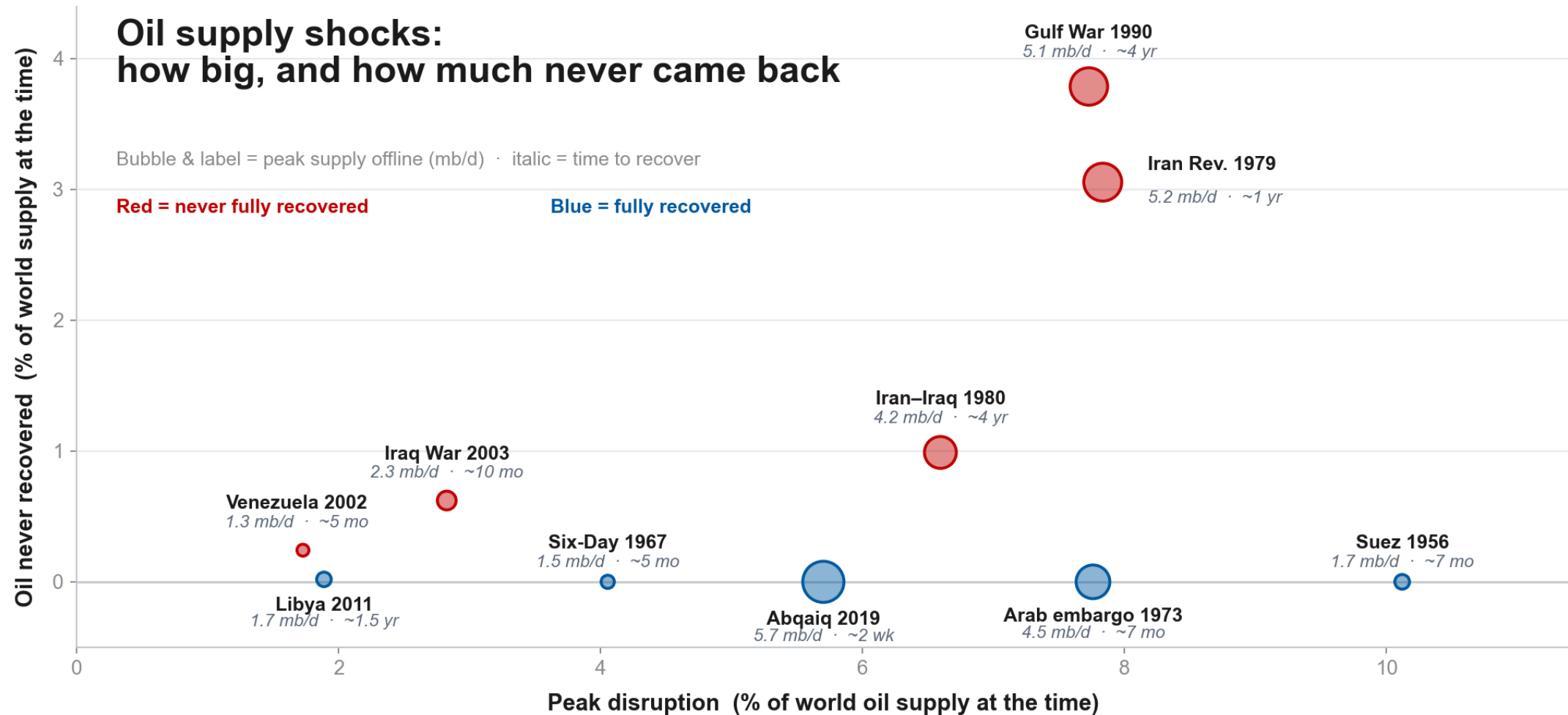
Hormuz is the largest on record. How fast it recovers, and how much sticks, is still unknown.

Disruption	Peak share (% of world supply, that year)	Peak (mb/d)	Time to recover	Oil that never came back
Strait of Hormuz 2026	12.3% 	12.8	<i>ongoing</i>	<i>unknown</i>
Suez Crisis 1956	10.1% 	1.7	~7 months	—
Iranian Revolution 1979	7.8% 	5.2	~1 year	39% 
Arab Oil Embargo 1973	7.8% 	4.5	~7 months	—
Gulf War 1990	7.7% 	5.1	~4 years	49% 
Iran-Iraq War 1980	6.6% 	4.2	~4 years	15% 
Abqaiq-Khurais 2019	5.7% 	5.7	~2 weeks	—
Six-Day War 1967	4.1% 	1.5	~5 months	—
Iraq War 2003	2.8% 	2.3	~10 months	22% 
Libya civil war 2011	1.9% 	1.7	~1.5 years	1% 
Venezuela strike 2002	1.7% 	1.3	~5 months	14% 

Analysis based on EIA / IEA data. Recovery = time to bring ~90% of lost supply back online; permanent loss is measured against the producer's pre-shock output.

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How to Compare Oil Disruptions?



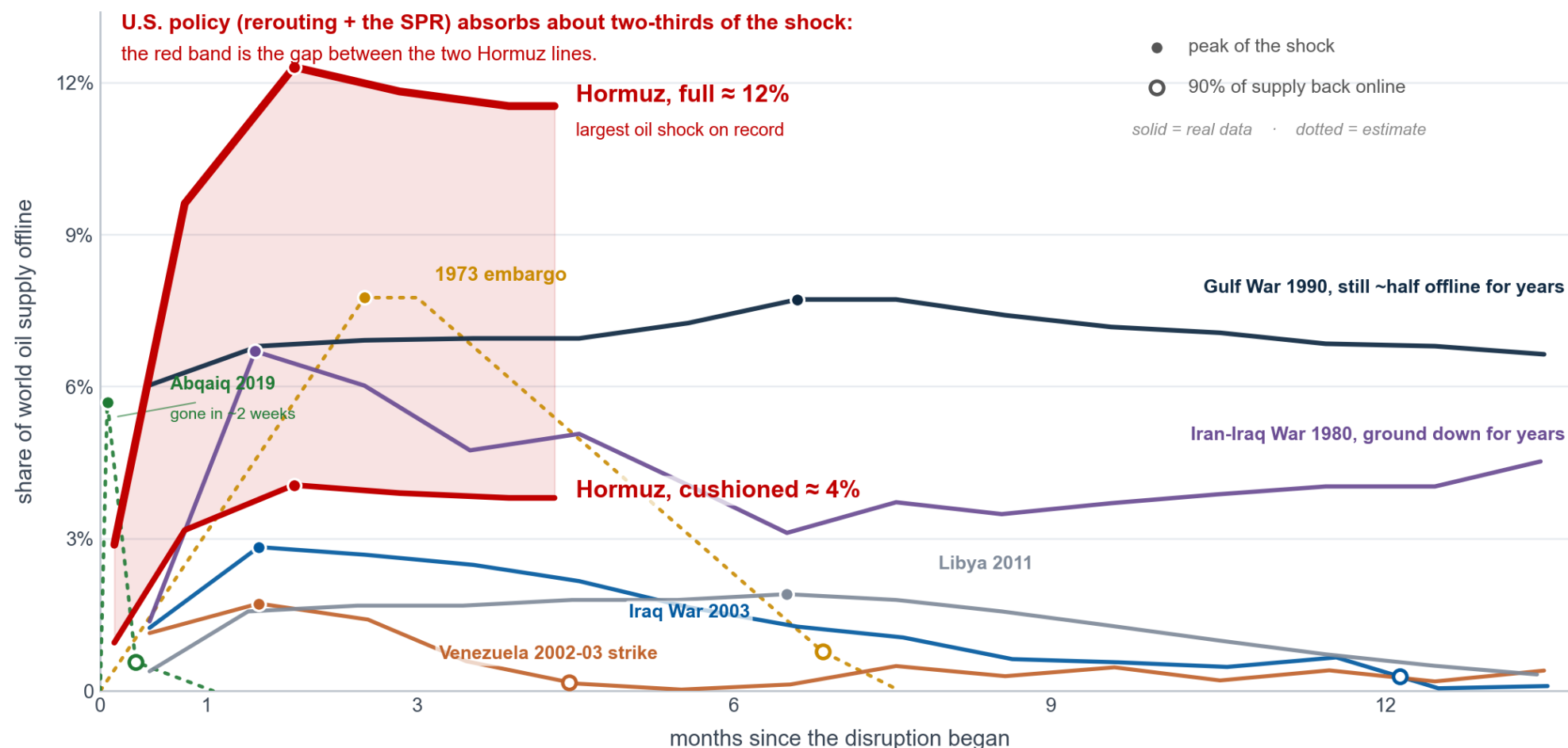
Analysis based on EIA / IEA data.

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How to Compare Oil Disruptions?

Hormuz dwarfs every past shock, unless U.S. policy cuts it to a third

Each line is a real oil disruption's supply loss over time, as a share of world supply that year.



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The long-term reasons to be optimistic

- **The United States is in a much better energy security situation than it was 50 years ago, and this is showing up in the effect of what would otherwise be a catastrophic crisis**
- **The institutions we built are working effectively at the scale they were designed for, for the first time in history**
- **Improvements in domestic energy endowments and efficiency gains have insulated the United States, and large portions of the global economy from the crisis**
- **Over the long term, things continue to improve directionally**

The short-term reason to be worried

- Oil disruptions typically abate slowly, not all at once. It may take some time for traffic to return, especially with 8x war insurance premiums.
- Both levers of the U.S. governments reduction of the effective shortfall by 2/3 have an expiration date
 - The SPR is authorized through July 10-17, and has 100 days or ~3 months left at current inventory levels
 - The MOU expires in two months, at which point we could potentially resume tolls and blockades
- *The upshot: the administration has potentially a 2-3 month window to negotiate a deal, otherwise there could be trouble*

Thank you