

Capital Markets Strategy

Essential insights for the C-Suite



Navigating Concurrent Supply-Side Inflation Shocks

Fractured Geopolitics, Trade Wars & AI's Rapid Expansion

JUL 2026

"There are decades where nothing happens, and there are weeks where decades happen."

Vladimir Illyich Lenin, Russian Revolutionary,
Leader & Political Theorist (1870-1924)

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1



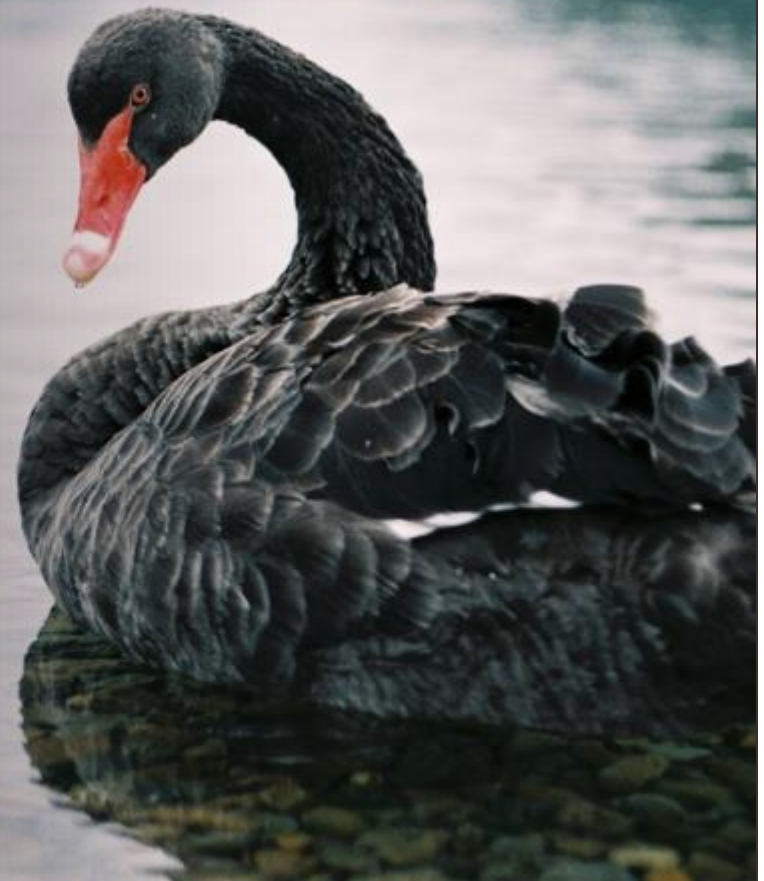
**Supply Side
Shocks Occurring
More Frequently**

3 criteria of black swan events

1 *Transformative
in size and scope*

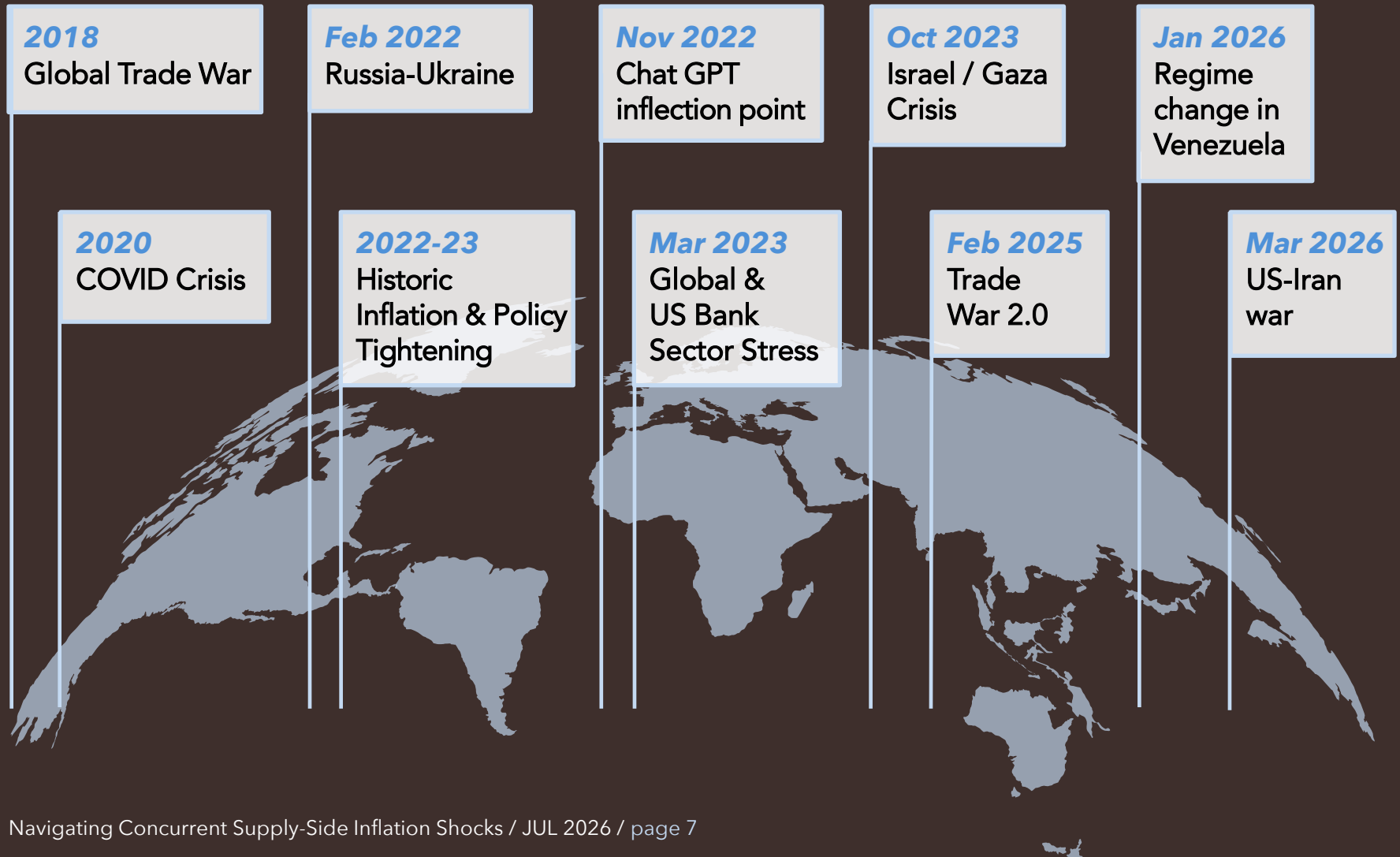
2 *Outlier;
not expected*

3 *Predictable
in hindsight*

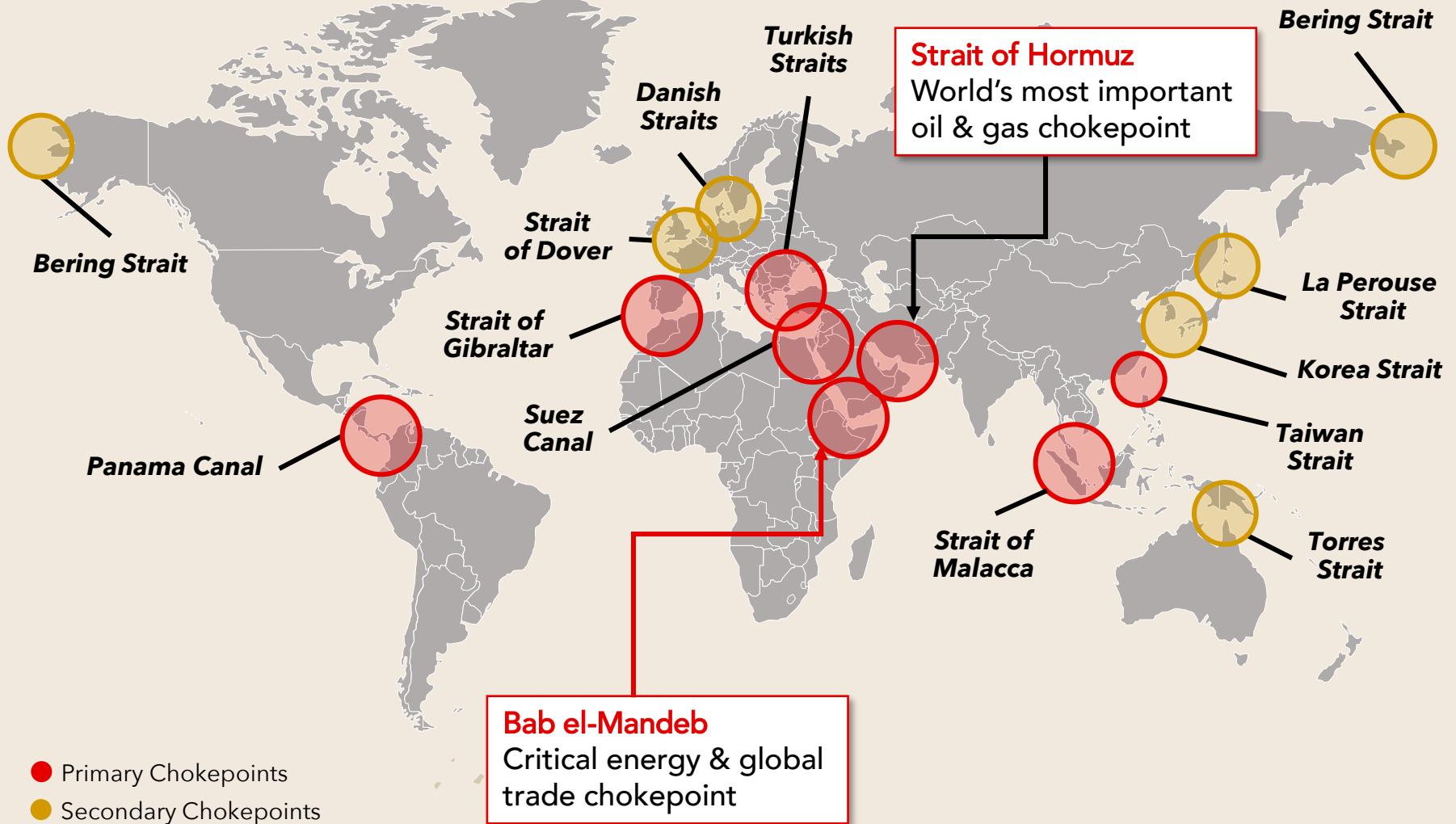


Low Visibility Macro Backdrop

Low probability, high impact events have been occurring more frequently, and are nearly impossible to forecast.



Important Global Geostrategic Chokepoints



Twin Logistical Anchors for Global Energy Markets

Strait of Hormuz

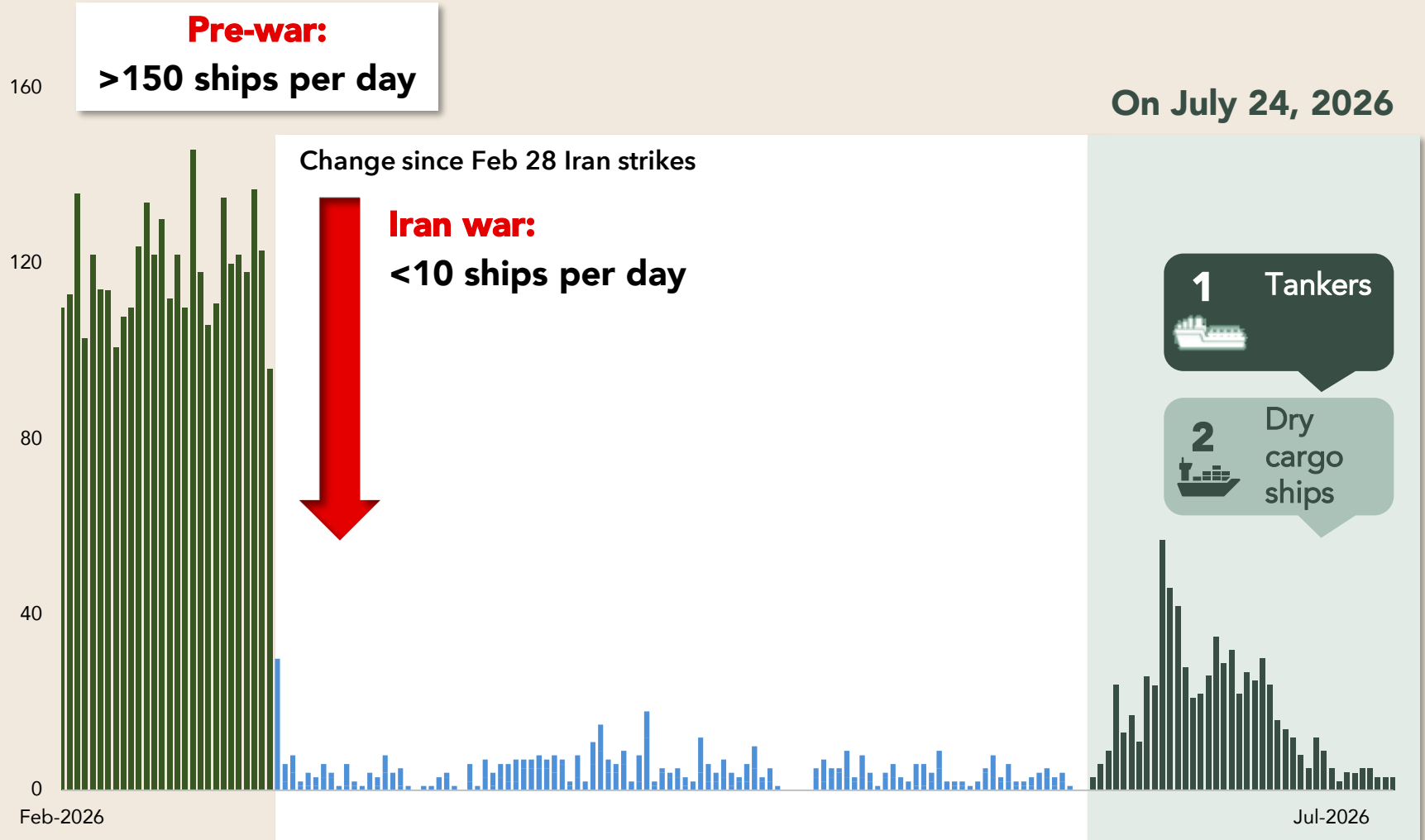
- 1** **21** miles wide at narrowest point
- 2** **18-19%** of global oil volume (20-21 mbd pre-war)
- 3** **25-27%** of global seaborne oil trade
- 4** **20%** of global LNG trade
- 5** **80-90%** of crude and LNG product bound for Asia

Bab el-Mandeb Strait

- 1** **18** miles wide at narrowest point
- 2** **8%** of global LNG trade
- 3** **10%** of global seaborne oil trade
- 4** **12%** of global seaborne trade
- 5** **25-30%** of global shipping container traffic

Unprecedented Strait of Hormuz Closure

2026 YTD Strait of Hormuz bidirectional intraday ship crossings (over last 24 hrs)

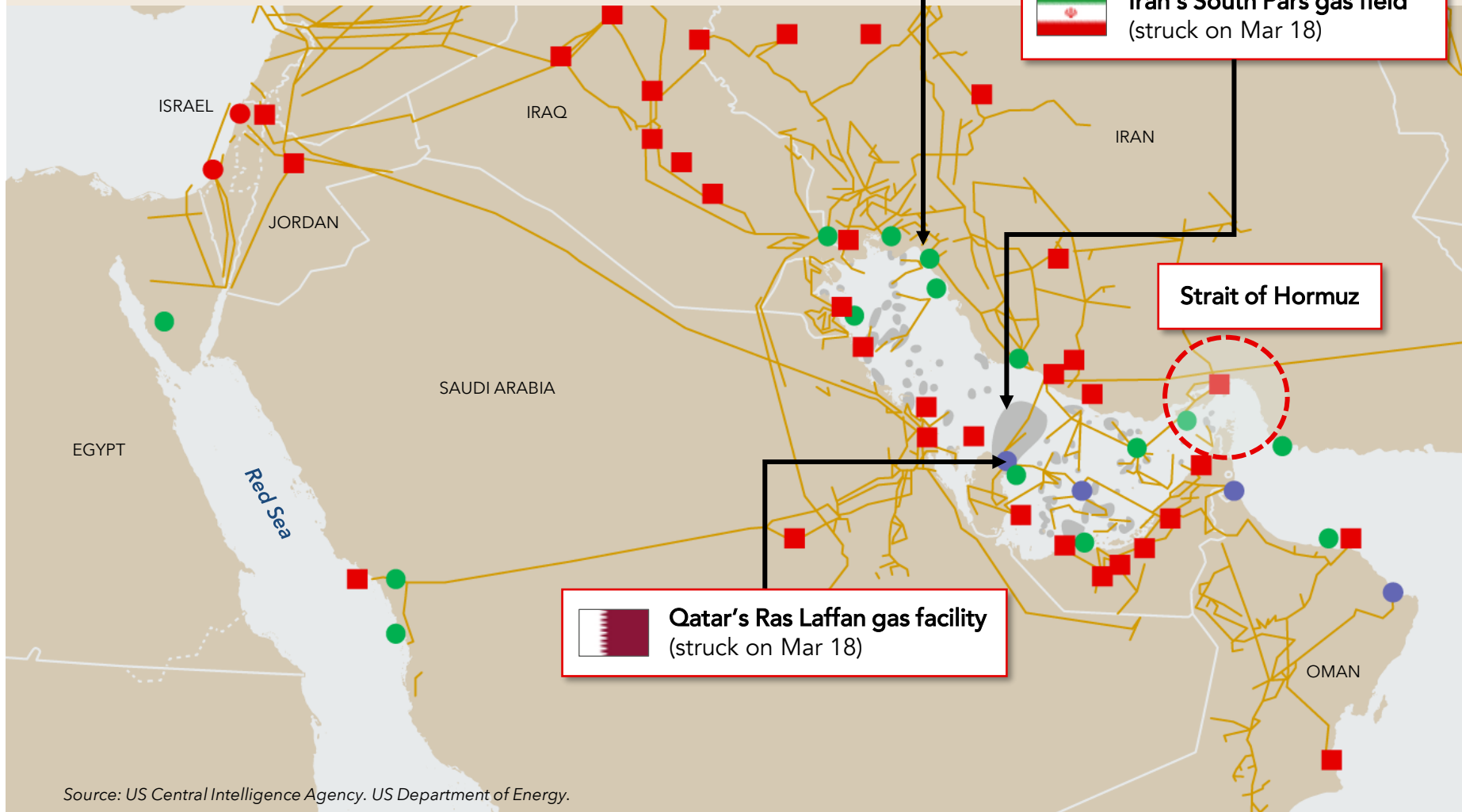


Source: (1) Bloomberg. Data as of July 24, 2026.

Middle East Regional Energy Infrastructure

- Oil refinery, gas processing plant
- Oil, gas field
- LNG export terminal
- Oil terminal
- Oil, gas pipeline

Oil refineries and terminals in the Middle East



Source: US Central Intelligence Agency. US Department of Energy.

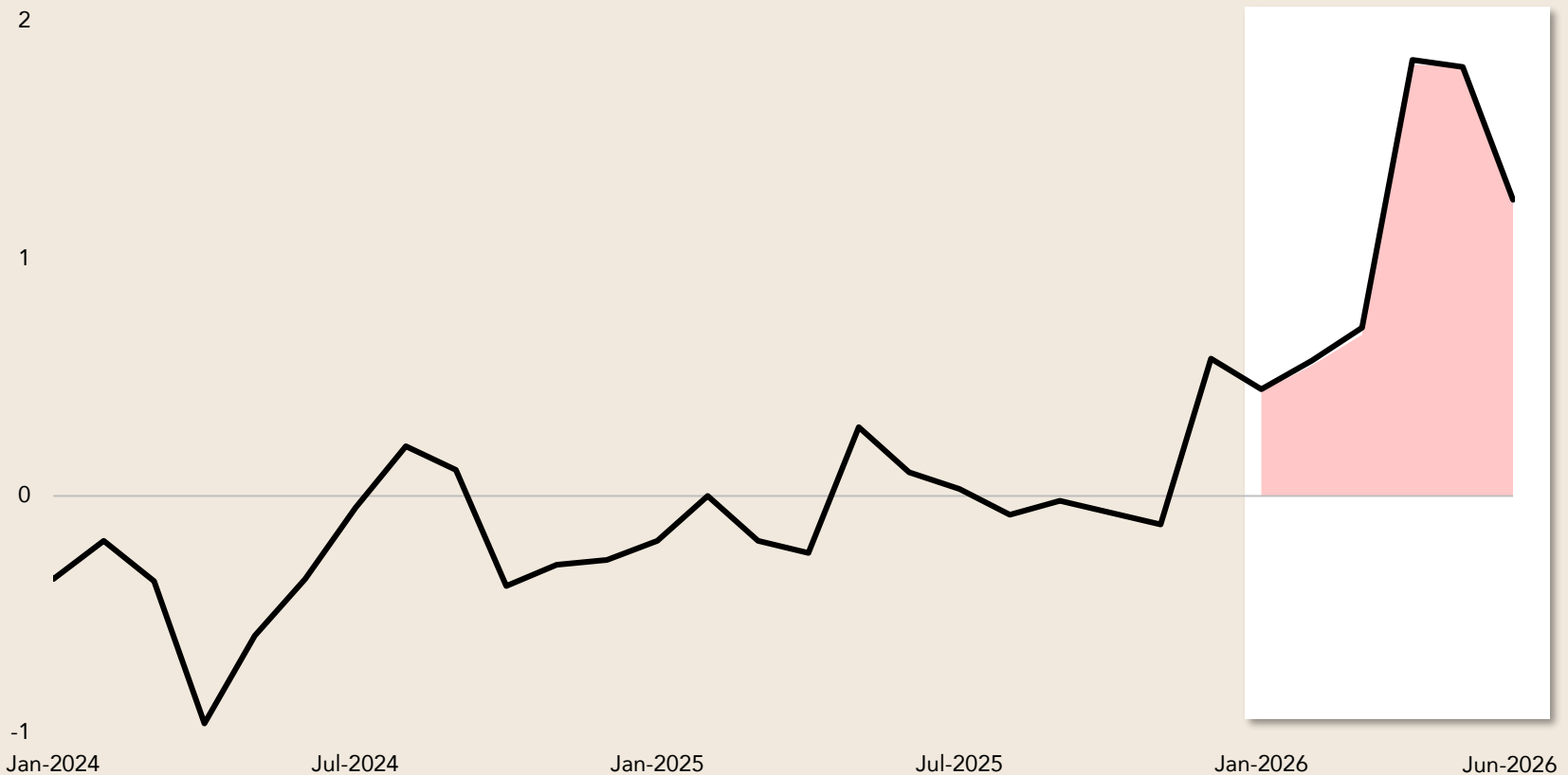
Global Supply Chains Tightening



Global supply chains have tightened meaningfully since the Iran war began on March 1st. The immediate shock was **energy and logistics**, but second order “stagflation” effects are propagating into **food, fertilizers, basic materials and strategic minerals critical to technology**.

Global supply chain pressure index

Middle East Conflict & War



Source: (1) Bloomberg. Federal Reserve of New York. Data as of July 24, 2026. Index is normalized to 0. Index value represents standard deviations away from normal conditions.

2



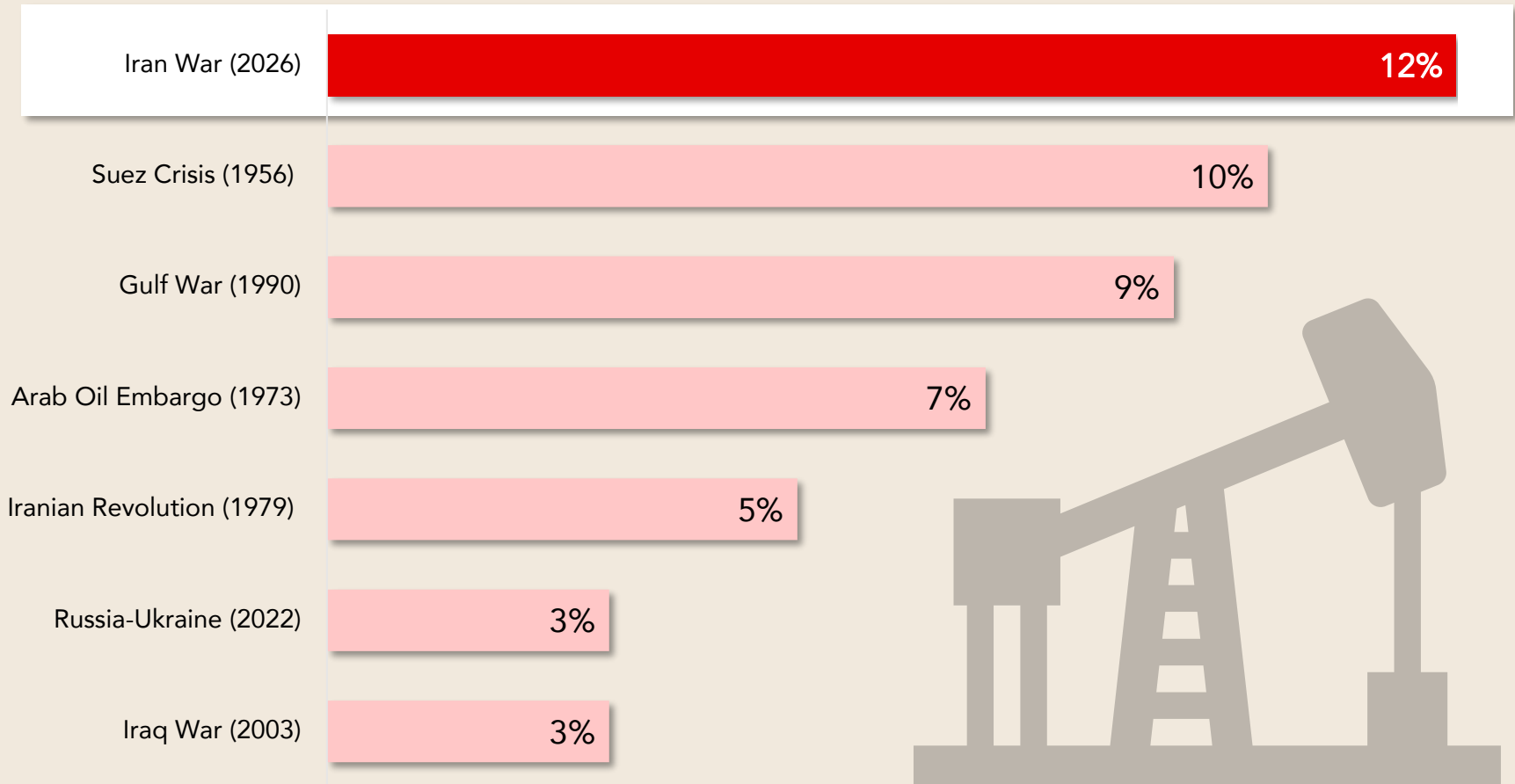
Largest Energy Market Disruption in History

**“The conflict has triggered
the largest supply disruption in the
history of the global oil market.”**

International Energy Agency (IEA)
Sheltering From Oil Shocks, March 20, 2026

Largest Historic Global Oil Supply Disruption

Size of shock to the global oil market, % of total global oil

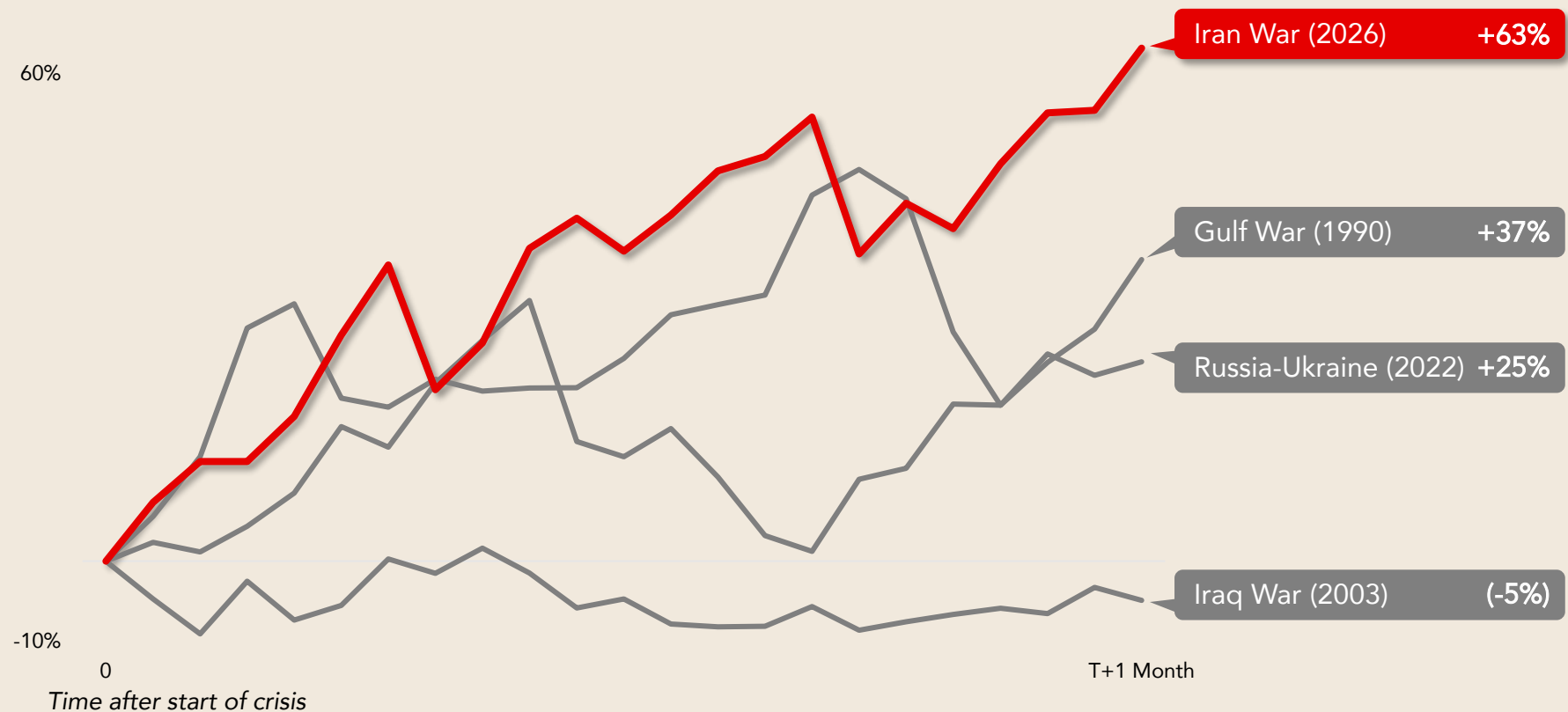


Source: (1) Rapidan Energy Group. WSJ, "How the Iran War Compares With Past Market Shocks" (David Uberti & Jared Mitovich).

Largest Oil Price Shock on Record

Due to the unprecedented closure of the Strait of Hormuz, the current Iran War has triggered the **largest monthly increase in Brent prices**, surpassing the previous record set during the Gulf War in 1990.

Brent oil performance after energy market shocks

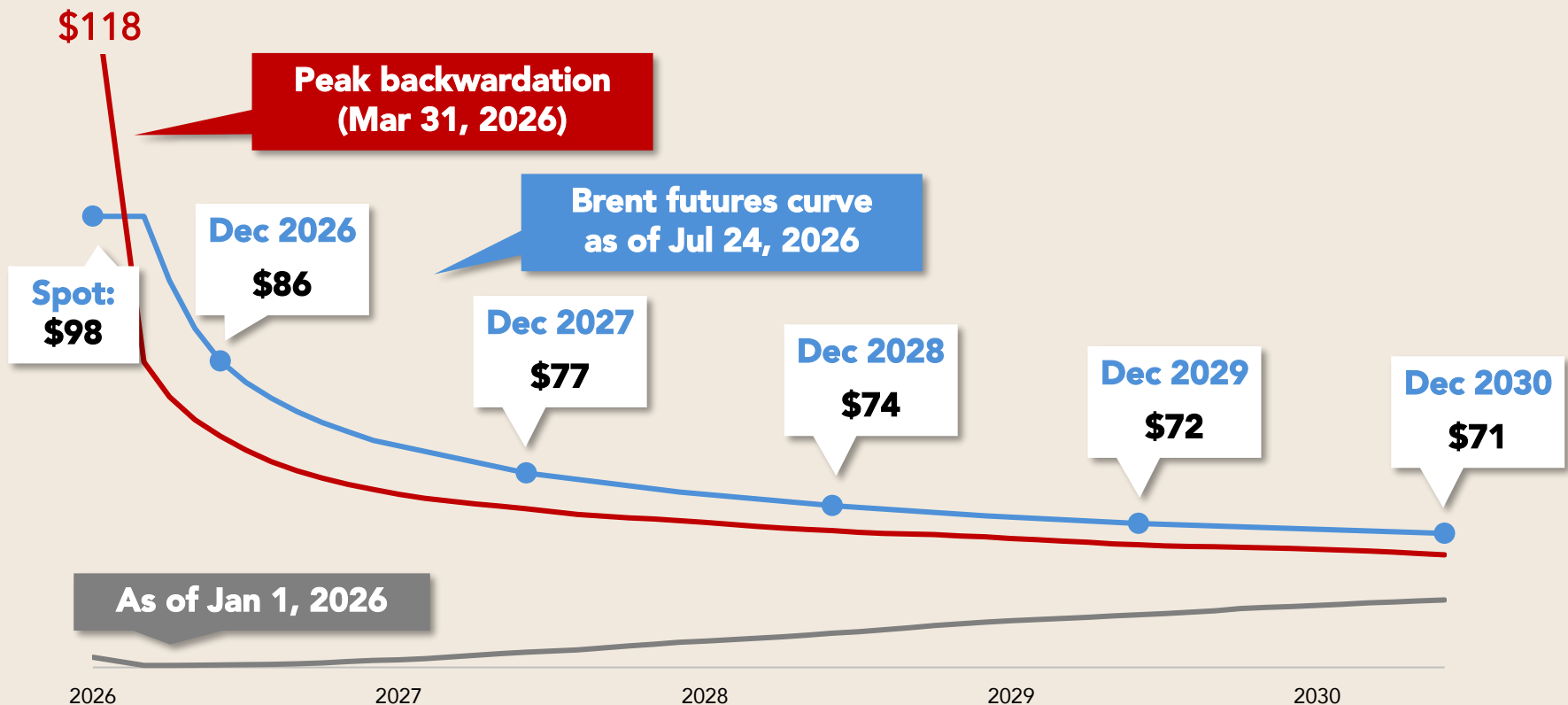


Source: (1) Bloomberg. Data as of March 31, 2206. T+0 is market close day before the crisis started.

Oil Term Structure in Pronounced Backwardation

In a normal **contango market**, futures prices for later delivery are higher than spot, reflecting storage costs and the time value of money. Since the war began, the term structure of global oil markets inverted toward **extreme backwardation**, which signals acute near-term tightness and/or risk premia in physical barrels, with important implications for inventories, macro and returns.

Brent futures curve

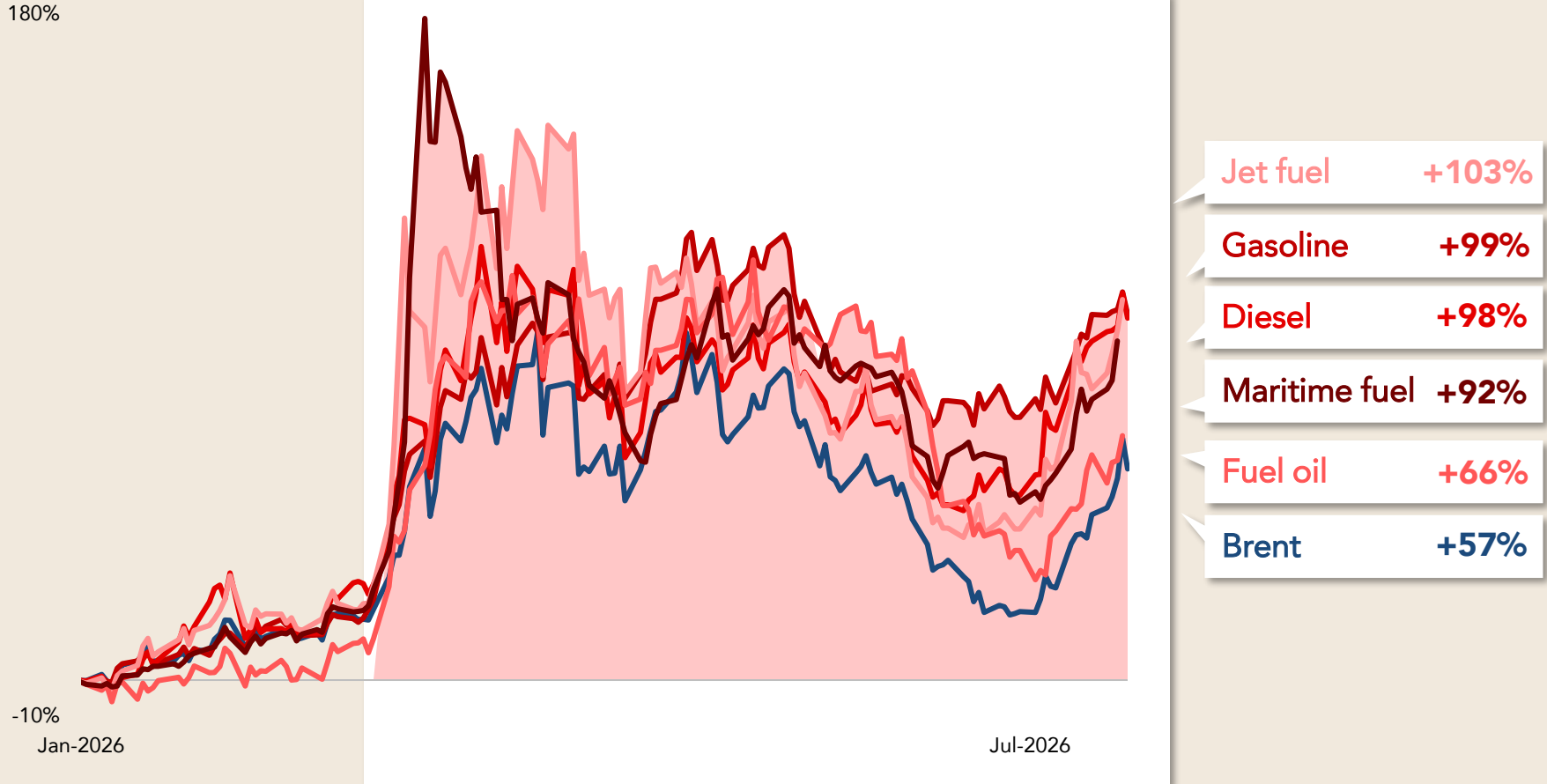


Source: (1) Bloomberg. Data as of July 24, 2026.

Refined Products Outrunning Crude

Price performance since Jan 1, 2026

US-Iran War

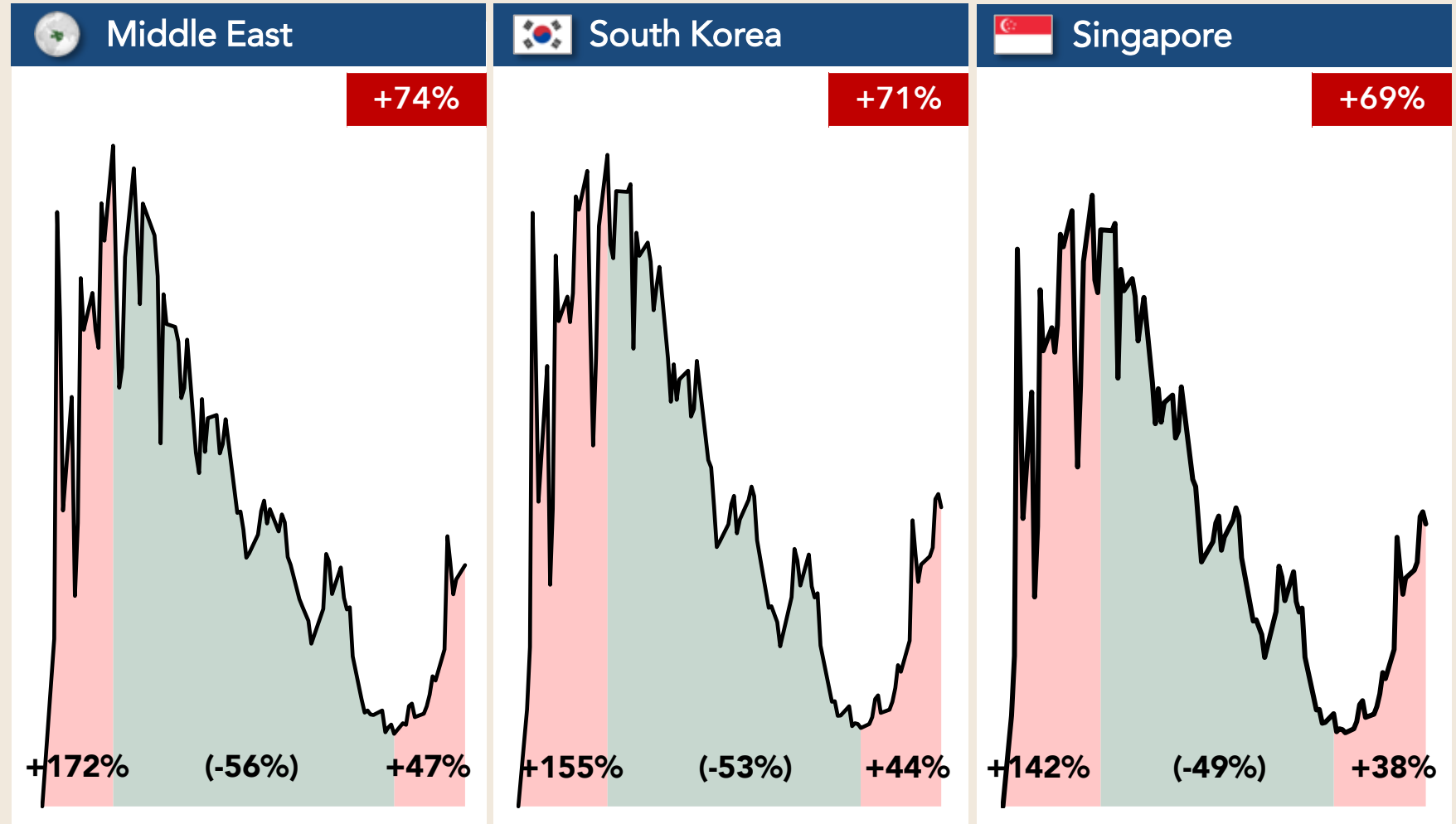


Source: (1) Bloomberg. Data as of July 24, 2026.

Global Jet Fuel Supply Shock



Jet fuel (March-July 2026)

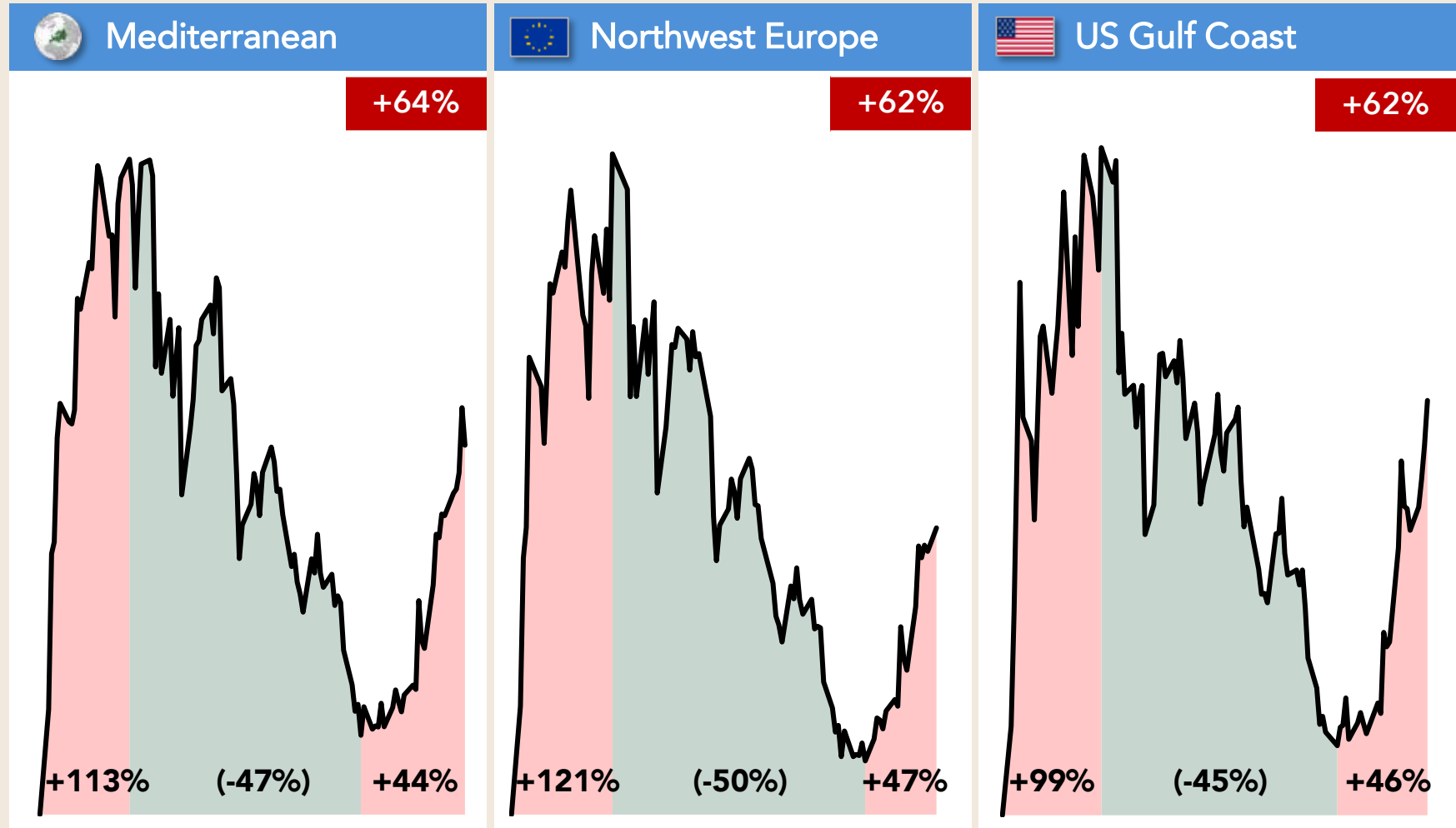


Source: (1-3) Bloomberg. Data is since February 27, 2026 and as of July 24, 2026. Middle East (Fujairah), South Korea, & Singapore jet fuel are FOB cargoes.

Global Jet Fuel Supply Shock



Jet fuel (March-July 2026)

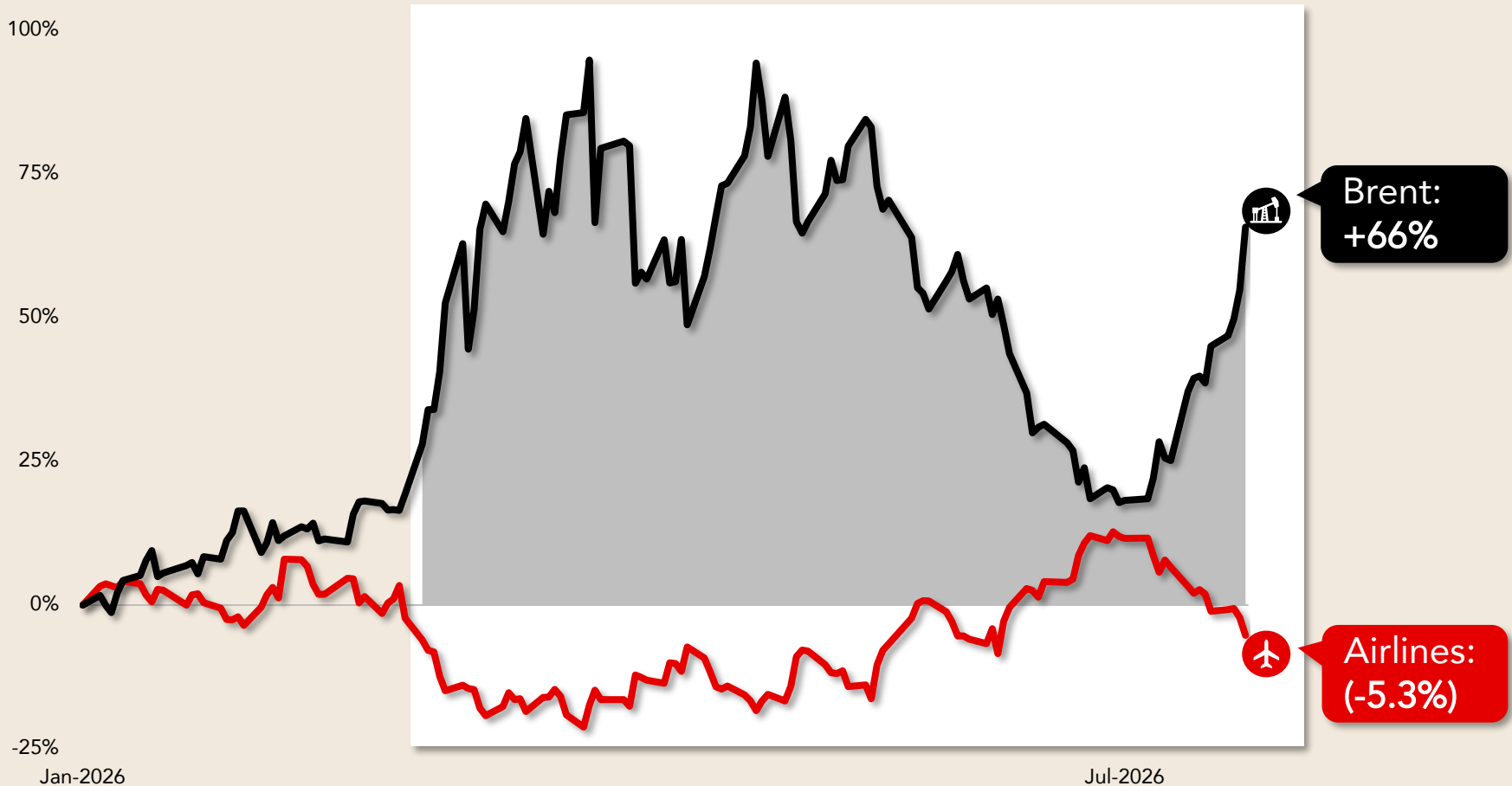


Source: (1-3) Bloomberg. Data is since February 27, 2026 and as of July 24, 2026. Mediterranean is FOB cargoes fair value balance of month. NWE is CIF cargoes. US Gulf Coast is 54 Colonial Pasadena MOC.

Energy Shock Impact on Airline Stocks

NYSE Arca global airline index performance vs. Brent

US-Iran War



Source: (1) Bloomberg. Data as of July 24, 2026. NYSE Arca airline index

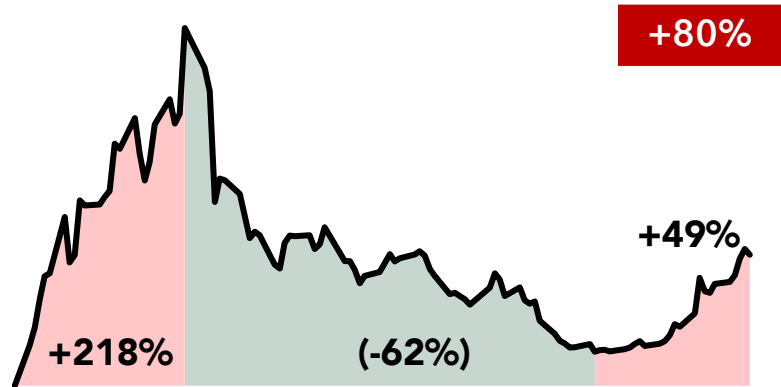
Diesel & Gasoline Supply Shock



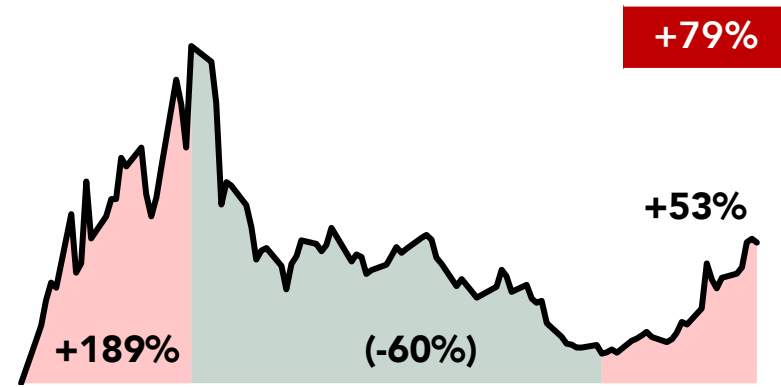
Automobile gas & diesel (March-July 2026)



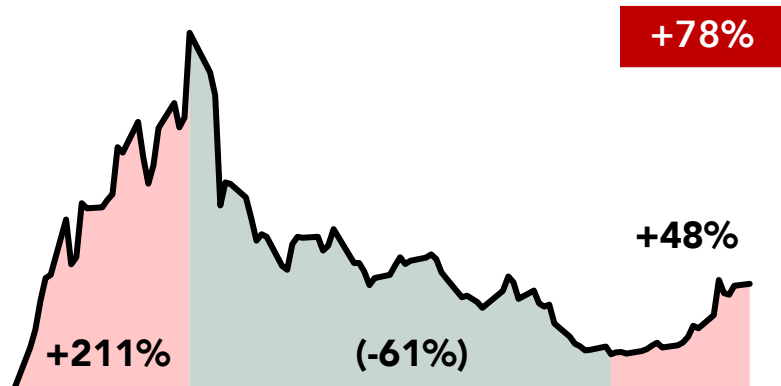
South Korea diesel



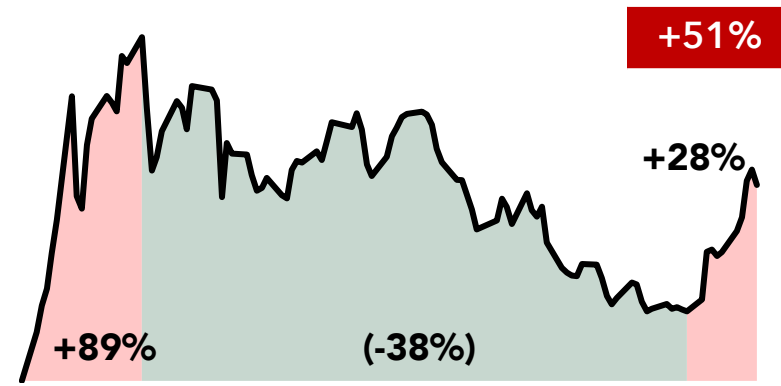
Middle East diesel



Singapore diesel



Japan gasoline



Source: (1-4) Bloomberg. Data since February 27, 2026 and as of July 24, 2026. South Korea, Singapore, and Middle East (Fujairah) diesel are 10 ppm gasoil FOB cargoes. Japan gasoline is 92 RON CIF cargoes.

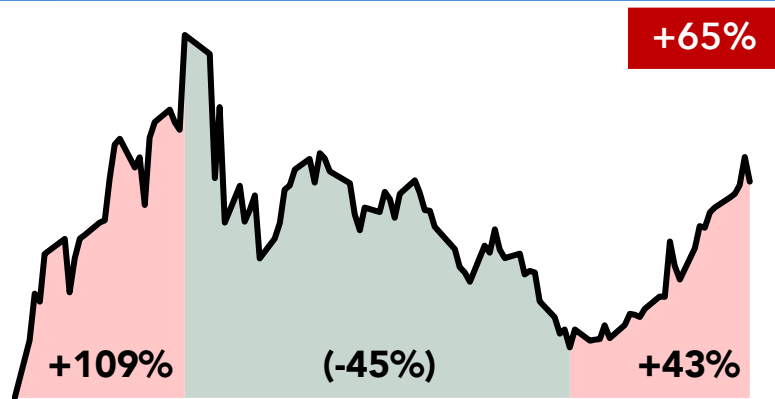
Diesel & Gasoline Supply Shock



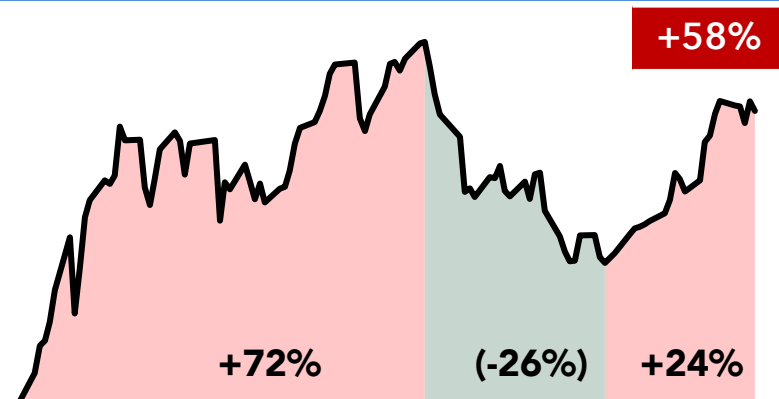
Automobile gas & diesel (March-July 2026)



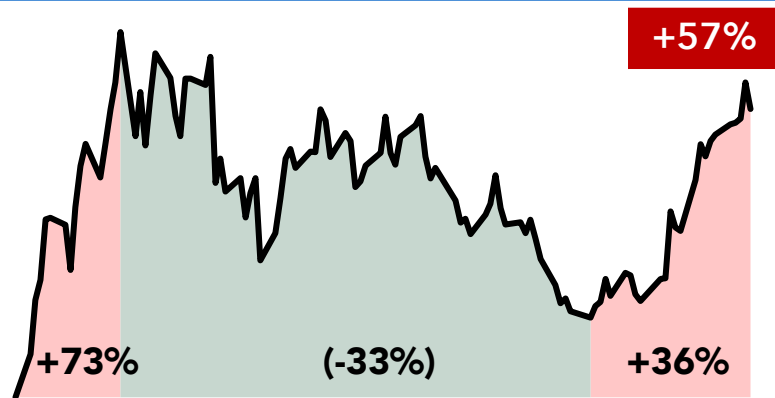
Mediterranean diesel



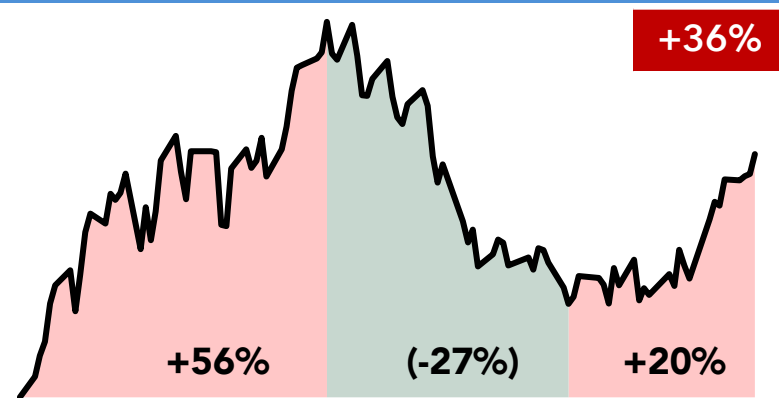
Europe gasoline



US diesel



US Los Angeles gasoline



Source: (1-4) Bloomberg. Data since February 27, 2026 and as of July 24, 2026. Mediterranean diesel is 0.1% gasoil CIF cargoes. US diesel is NY Harbor ULSD. NW Europe gasoline is Eurobob non-oxy FOB barges. US LA gasoline is CARBOB Kinder Morgan.

3



Mitigating Factors in 2026 Oil Price Shock

Well diversified & oversupplied global oil markets

IEA SPR drawdowns

China policy pivot to reduce crude dependency

Modest demand destruction, rationing

(i.e., refinery closures, flight cancellations)

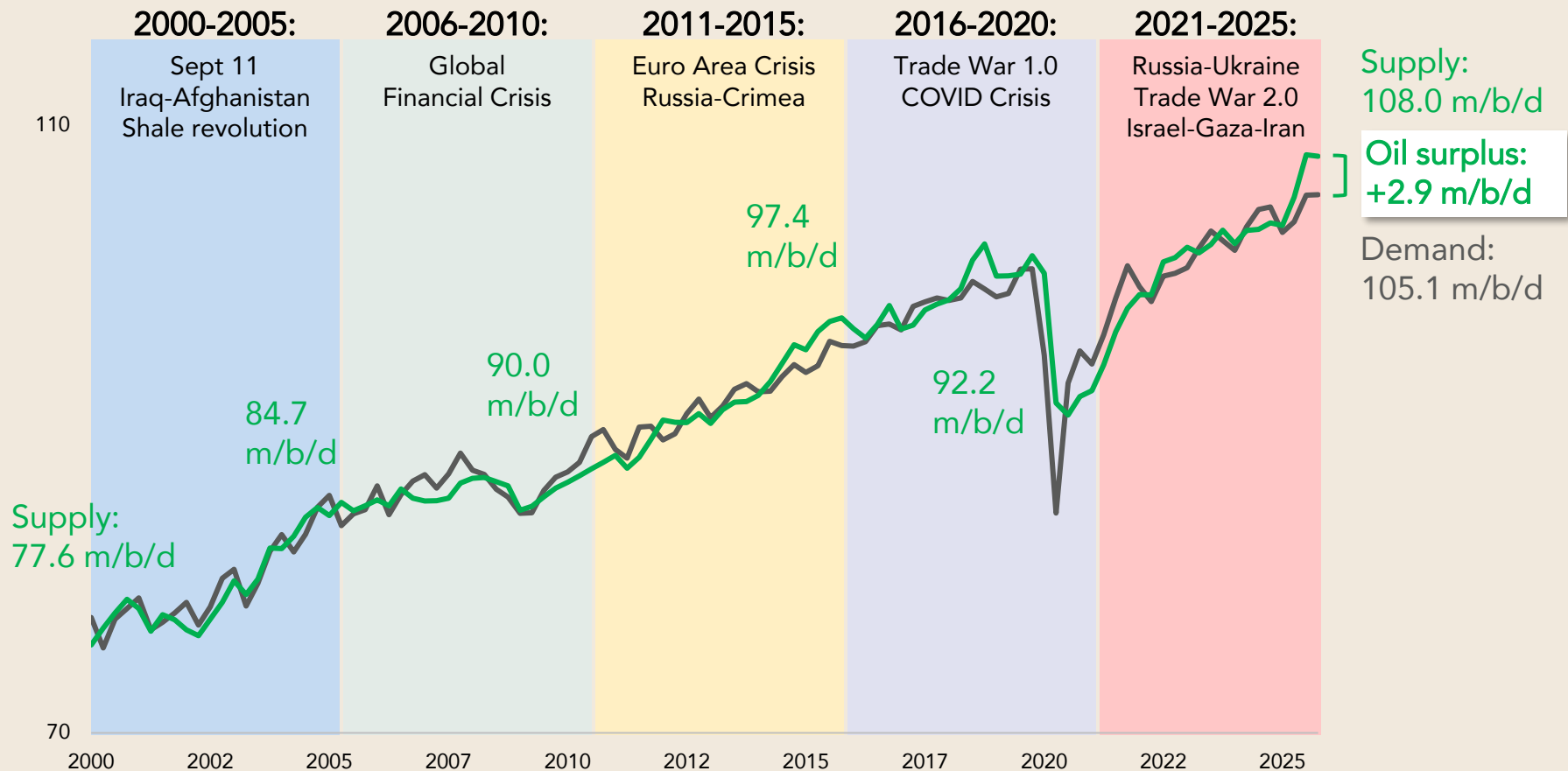
Shift to alternatives

(renewables, EVs, nat gas)

Enter the Crisis with a Strong Surplus



Global oil supply, million barrels per day



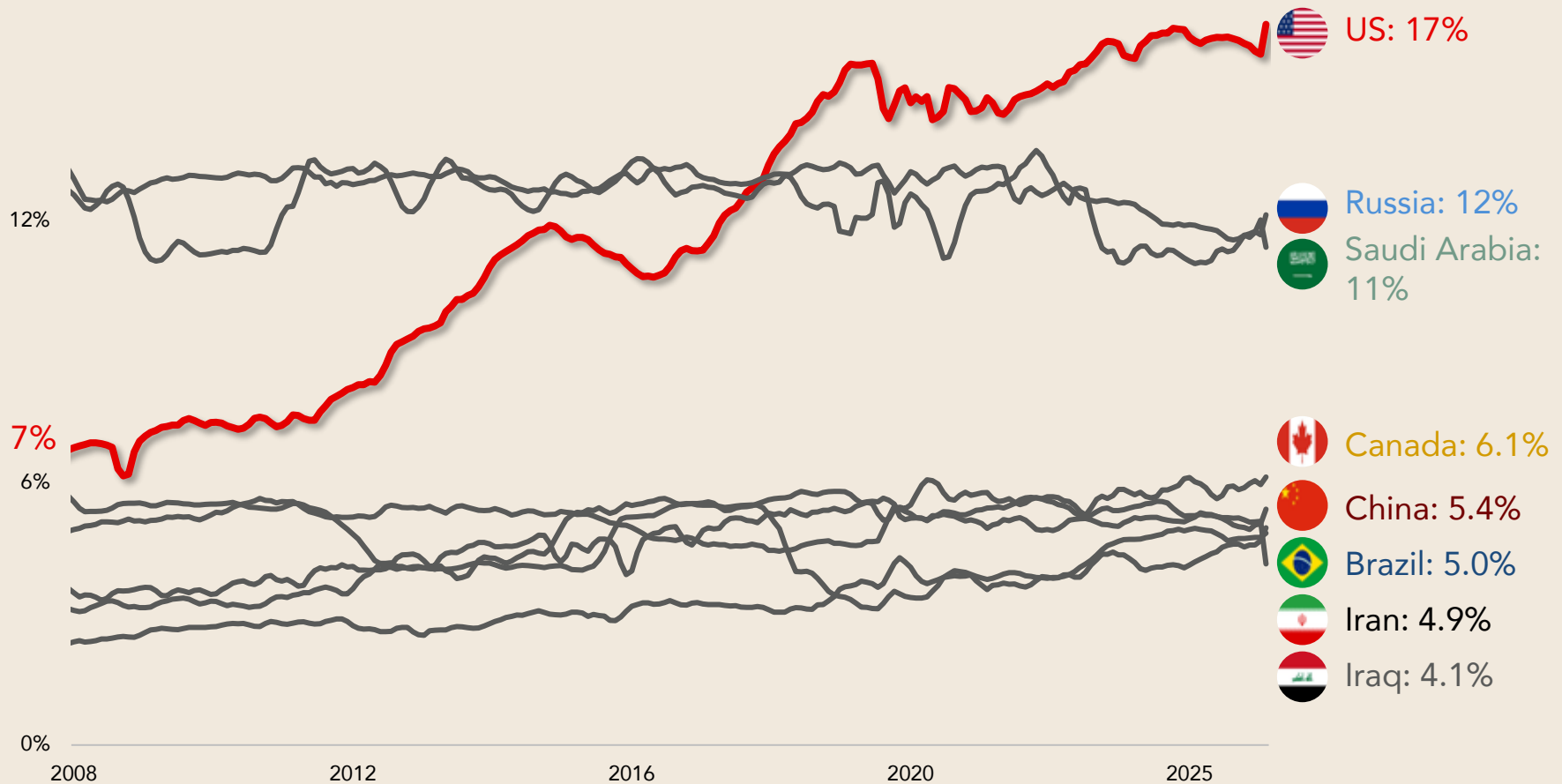
Source: (1) Bloomberg. Data through Q4 2025.

Well Diversified Global Oil Markets



Oil production as % of world total

18%

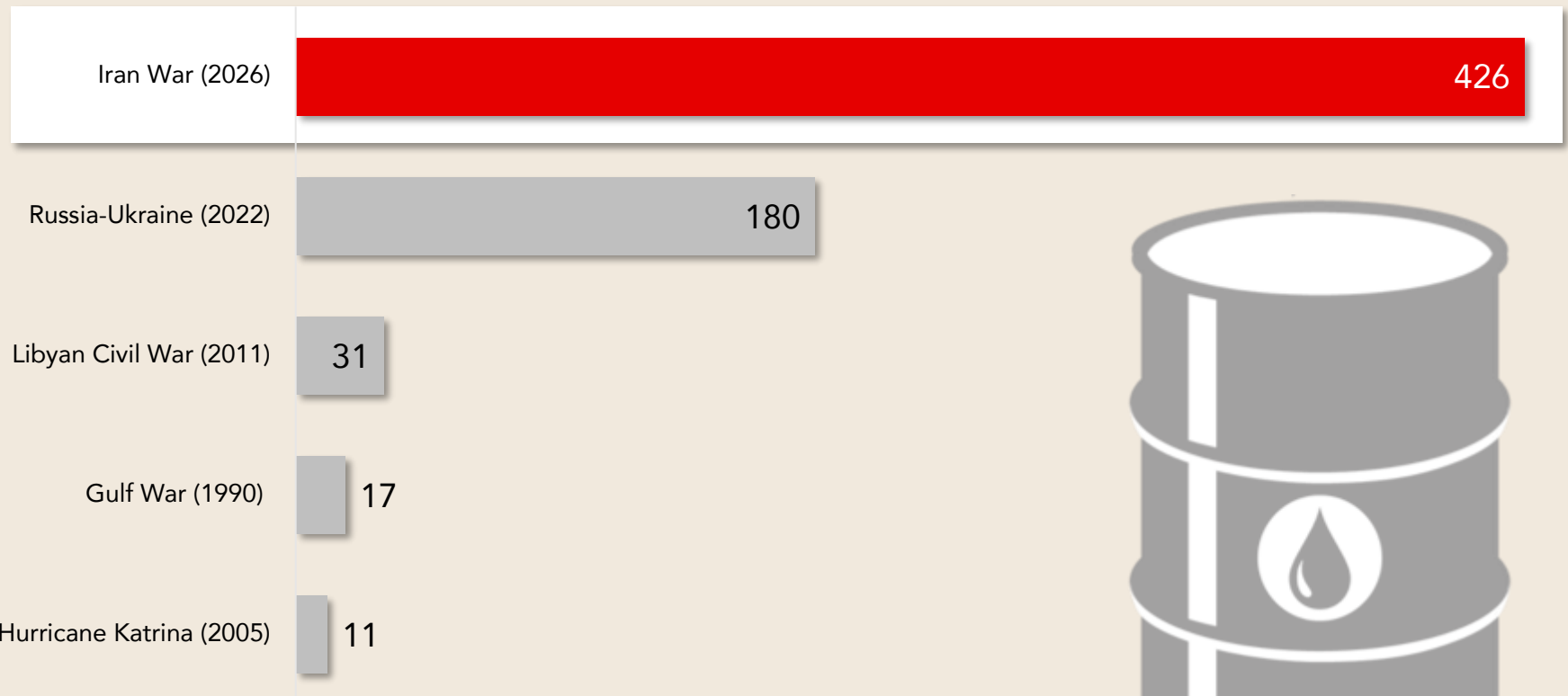


Source: (1) Bloomberg. Data through March 2026. EIA. 3 month moving average.

Historic Drawdown of Oil Reserves

The current 2026 Iran War has led to **the largest drawdown of strategic petroleum reserves in history**. The IEA authorized over 400 million barrels, with the US contributing 40% of the total commitment (172 barrels). In contrast to prior drawdowns, this release includes a significant portion of refined products (gasoline and diesel) to help prevent immediate fuel shortages. China chose not to participate.

Global Strategic Petroleum Reserve (SPR) drawdowns, millions of barrels

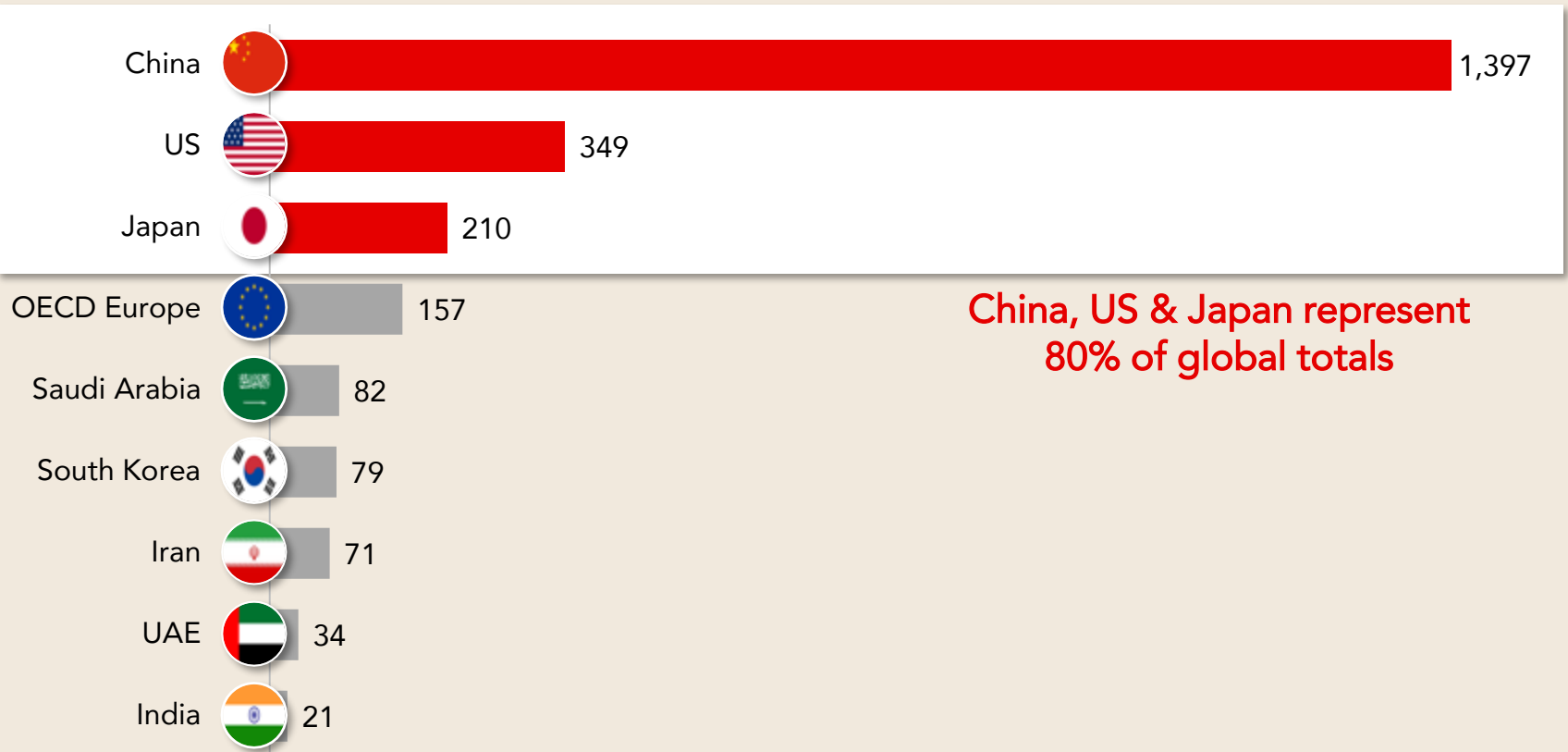


Source: (1) IEA. Energy.Gov. Iran War in 2026 is total authorized, not yet released.

Highly Concentrated Strategic Oil Reserves

Global strategic oil reserves are currently estimated above 2.5 billion barrels, with China, the US and Japan dominating strategic stockpiles. Post the Iran war, **US SPR balances currently stand at a four-decade low**, while China's position remains comparatively robust.

Estimated strategic crude oil inventories, million barrels (June 2026)



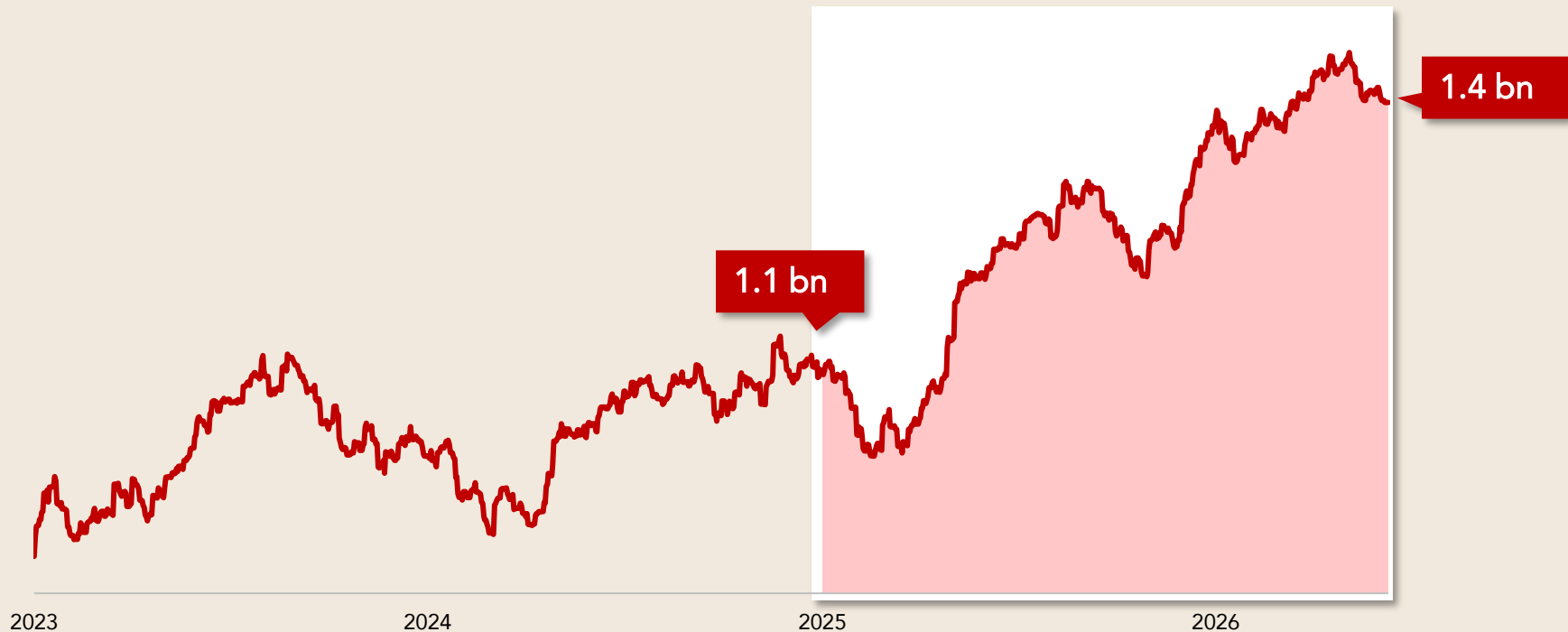
Source: (1) US EIA. Japan official government reserves reflects METI's Phase 1 release of roughly 53 million barrels. OECD Europe committed 32.7 million barrels from state owned national reserves, ~20-22 million released. No drawdowns from Saudi Arabia, South Korea, Iran, UAE or India.

China's Large & Resilient Strategic Oil Reserves



Despite being an energy deficit country, China is strategically **"built for a global energy shock"** in a manner in which most countries are not. China's 1.4 billion reserves, by far the world's largest, are a **model-driven estimate** and not disclosed. **Actual balances may be meaningfully larger.** During the recent US-Iran war, China avoided the large drawdowns of the US and IEA nations, while simultaneously employing a wide range of concurrent strategies to reduce its Middle East energy dependency.

China's crude inventories, bn barrels



Source: (1) Bloomberg, "China Taps Commercial Oil Stocks to Help Weather Gulf Shock". Kpler. Data includes estimates of China's underground petroleum reserves. Data as of June 10, 2026.

China's Strategic Approach to Energy Supply



China's resilient energy diversification strategies following the US-Iran war

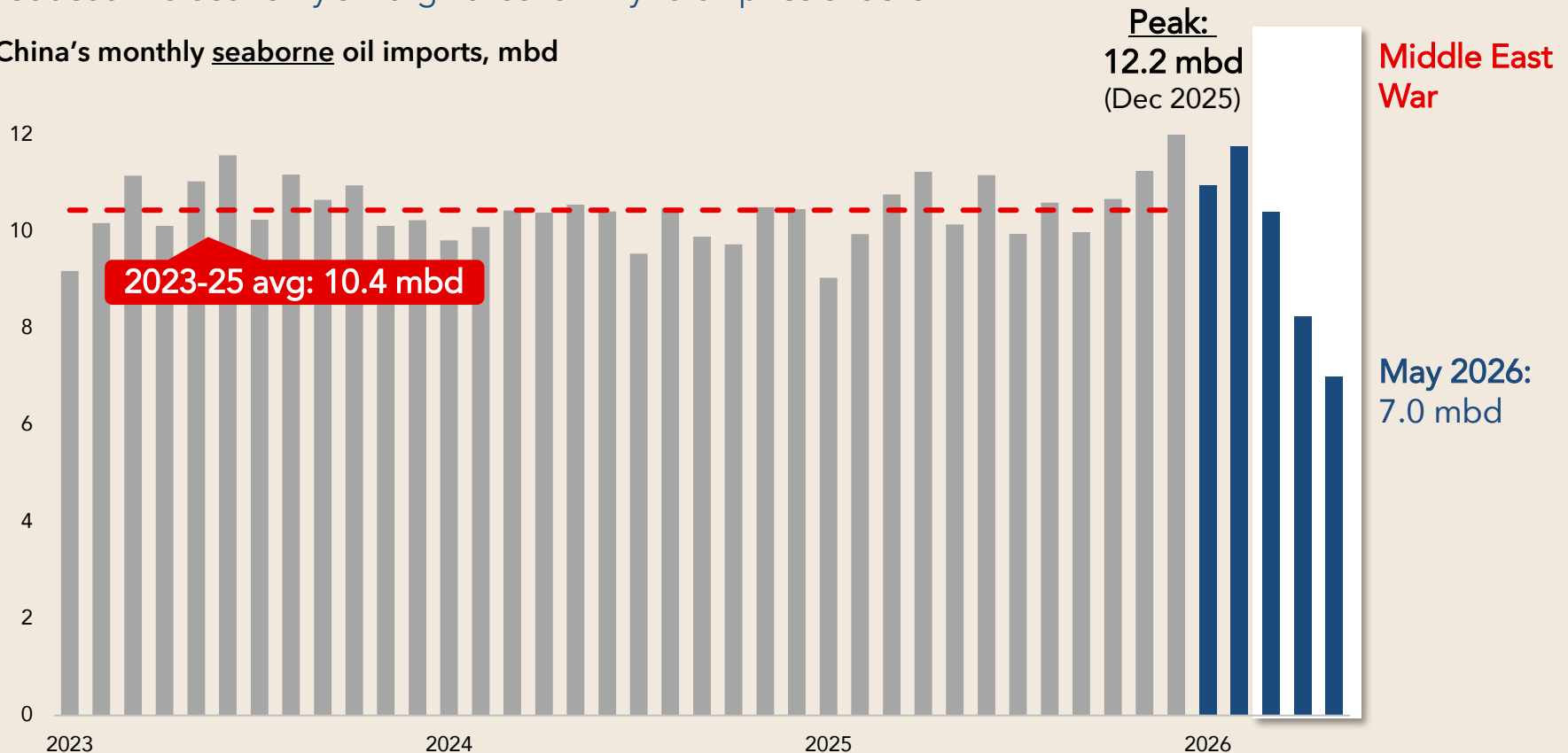
- 1 Refusal to participate in large-scale **IEA SPR drawdowns**
- 2 Selected demand destruction, **rationing**
- 3 Halting refined product **exports**
- 4 Leaned into **land-based inflows** immune to maritime chokepoints (i.e., Central Asia)
- 5 Increasing purchases of **sanctioned crude** (i.e., Russia)
- 6 Robust expansion of complex **renewables sector**
- 7 **Coal-to-liquid conversions** for chemicals & industrial sectors

China's Strategic Policy Pivot to Structurally Reduce its Sensitivity to Oil Price Shocks



Following the US-Iran war, China pulled back sharply on its crude oil imports, a policy pivot that was **less demand shock** and more of a **deliberate and strategic policy pivot to insulate and diversify** China's energy needs from the supply-side crisis. More so than most countries, China has structurally reduced the economy's marginal sensitivity to oil price shocks

China's monthly seaborne oil imports, mbd

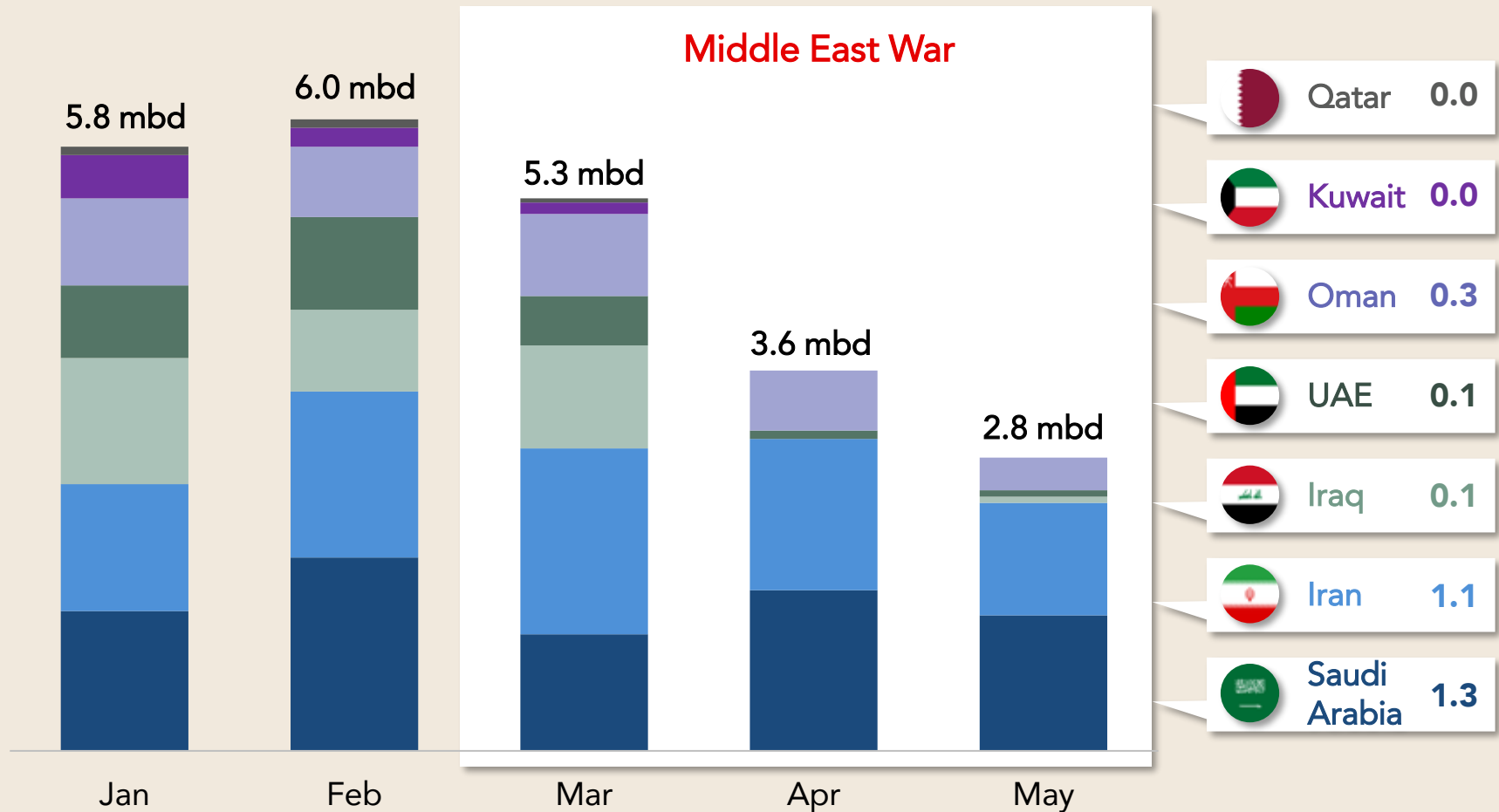


Source: (1) WSJ, "China is Propping Up the World Economy by Importing a Lot Less Oil". Vortexa.

China Reduces Middle East Dependencies



China's oil imports from Middle East countries in 2026, mbd



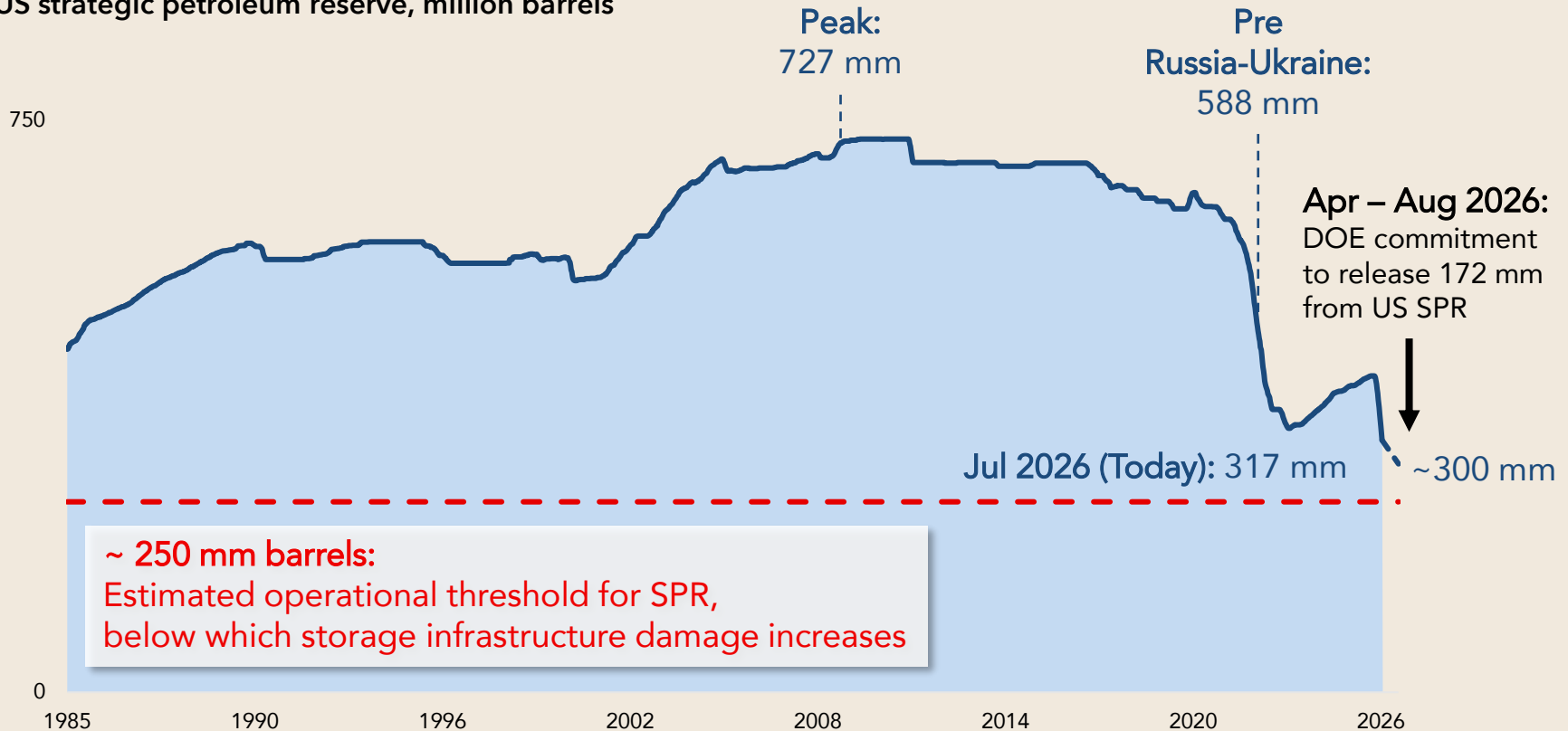
Source: (1) WSJ, "China is Propping Up the World Economy by Importing a Lot Less Oil". Vortexa.

US Strategic Reserves at Four-Decade Low



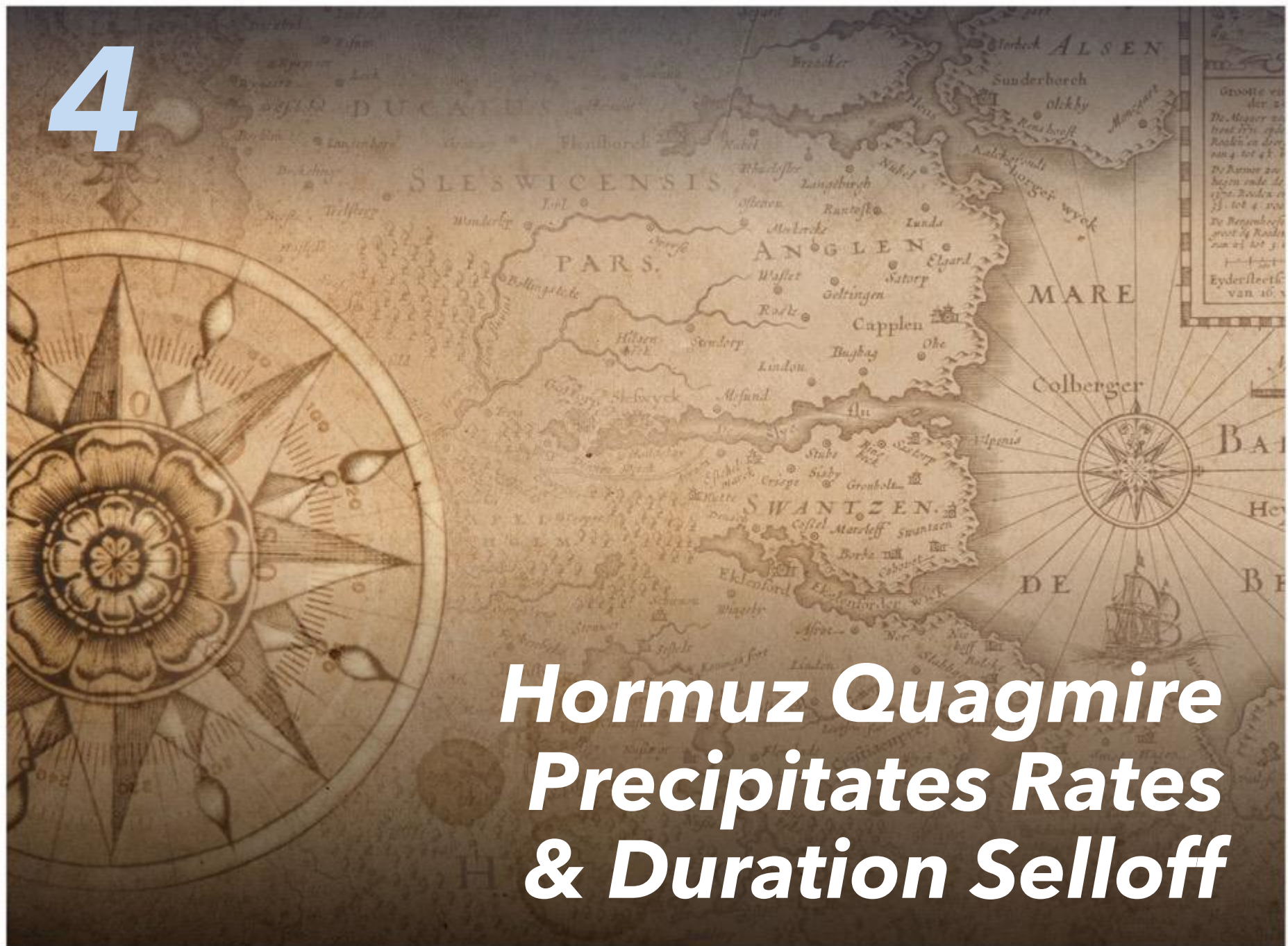
Down sharply from authorized capacity of 714 million barrels, multiple US administrations had **drawn down US strategic reserves to finance US deficits**. Following the strategic miscalculations of the current US-Iran war, the US has since taken its SPR reserves down to 317 million barrels as of mid-July, a four-decade low. US strategic reserves are **fast approaching the roughly 250 million barrel minimum** to operationally maintain US infrastructure.

US strategic petroleum reserve, million barrels



Source: (1) US EIA. Data as of July 24, 2026. Amount is the ending stock of crude oil.

4



Global Supply Side Inflation Shock



The war in the Middle East and closure of the Strait of Hormuz has created **a global supply-side inflation shock** that is impacting energy markets, food, manufacturing and trade. This poses a policy dilemma for global central banks as inflation re-accelerates at a time when rate cuts were priced in for 2026.

Supply side inflation shock



Energy price shock



Food & fertilizer price shock



Manufacturing & trade price shock

Macroeconomic impact



Higher global inflation



Lower global growth

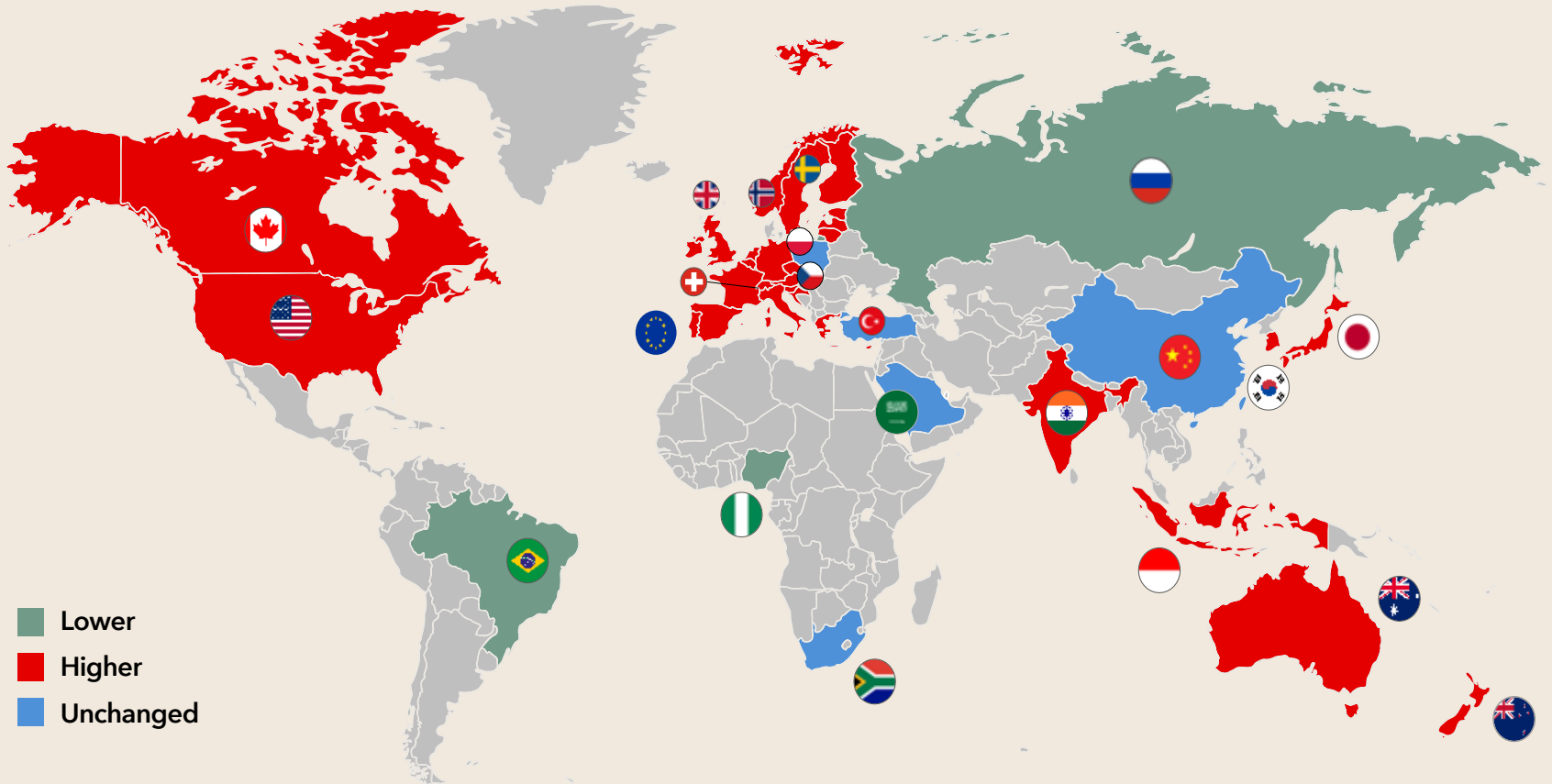


Central bank policy dilemma

Asynchronous Defensive Pivot Toward Policy Tightening

Just six months ago, more than 70 central banks had been actively engaged in synchronized global policy easing, with only Australia and Japan expected to modestly increase rates in 2026.

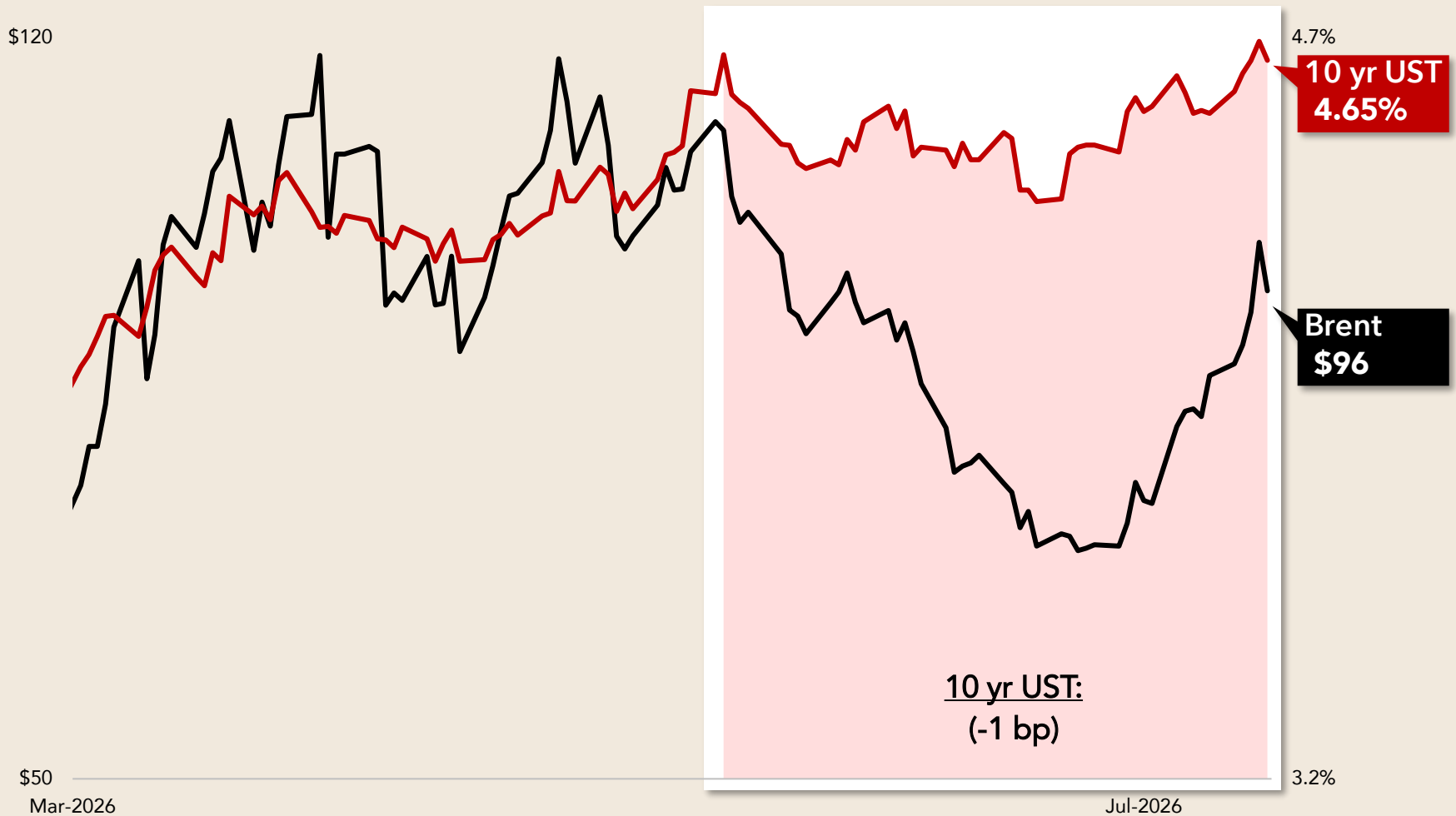
Expectations for YE 2026 central bank policy rates



Source: (1) Bloomberg. Data is based on economic forecasts, market-implied rates, and global central banks. Data as of July 2026.

Rates Decouple from Oil

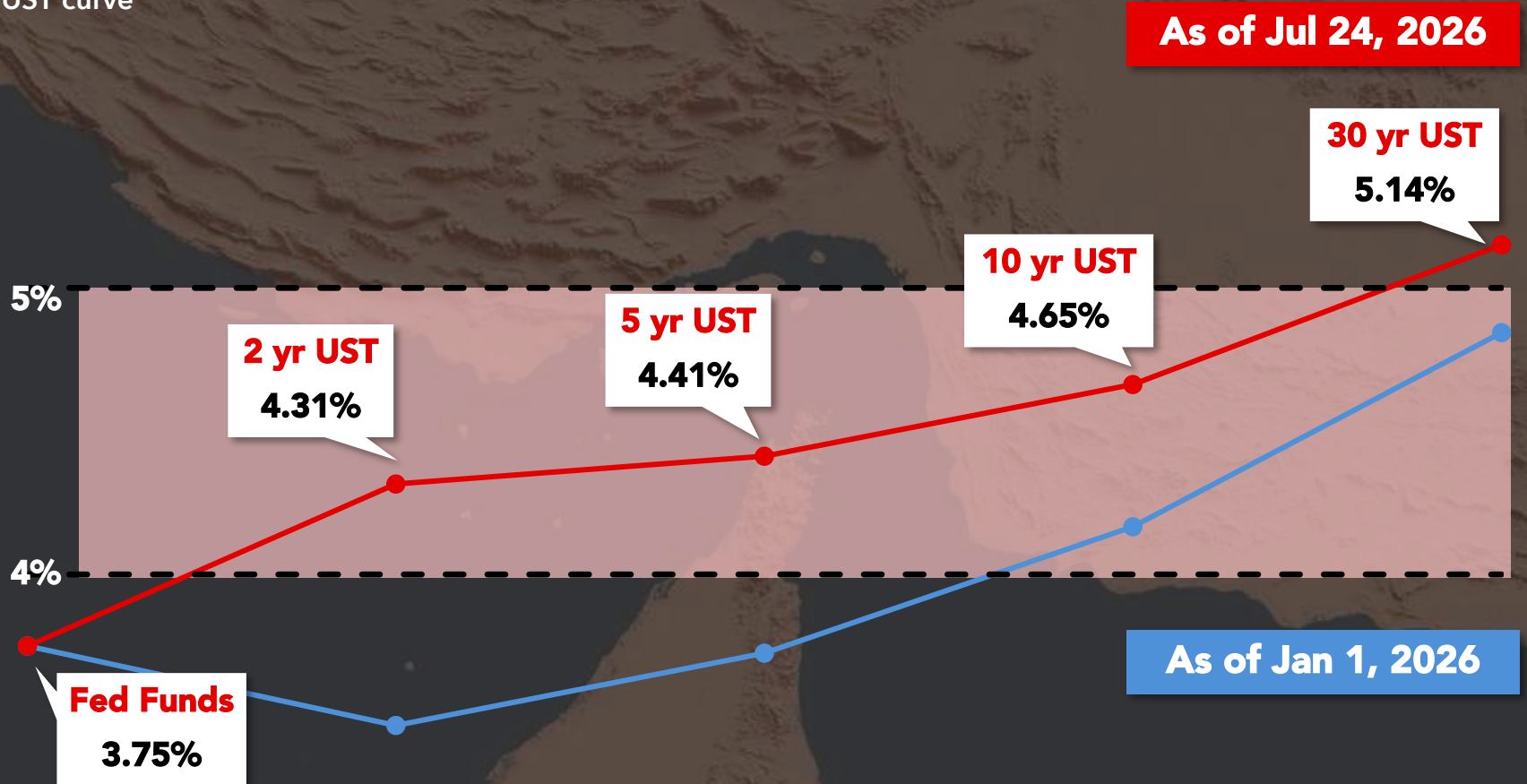
Brent (LHS) vs. 10 yr UST (RHS)



Source: (1) Bloomberg. Data as of July 24, 2026.

UST Curve Repriced Higher

UST curve

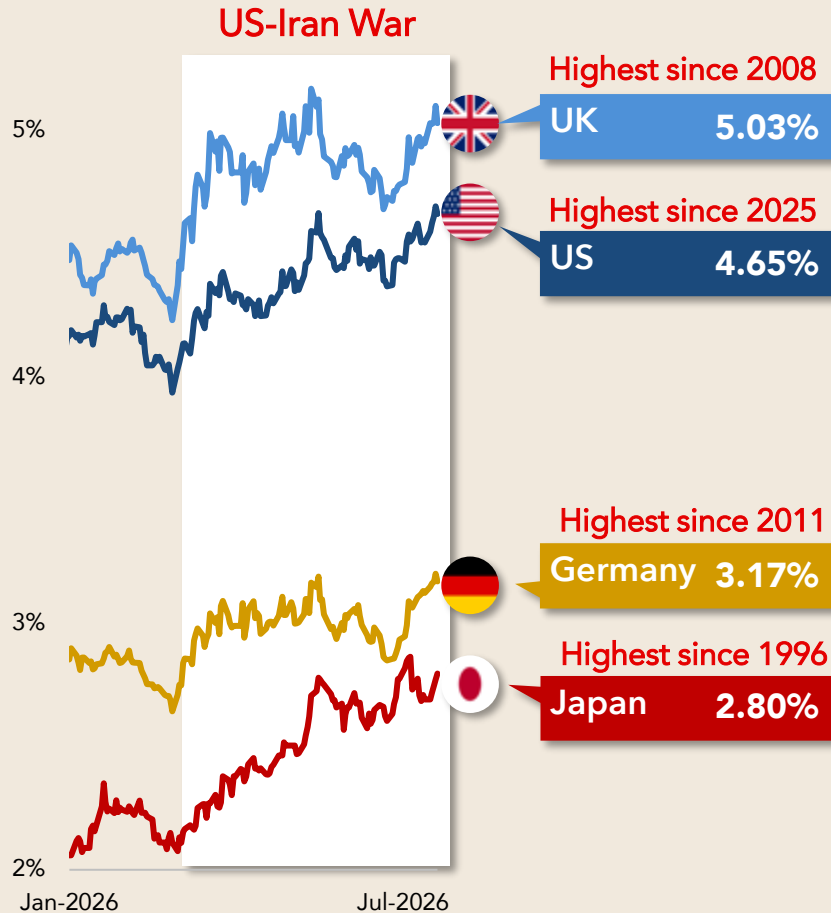


Source: (1) Bloomberg. Data as of July 24, 2026. Fed funds is upper bound.

Global Markets Repriced Duration Risk



10 yr global government bond yields



30 yr global government bond yields



Source: (1) Bloomberg. Data as of July 24, 2026.

5

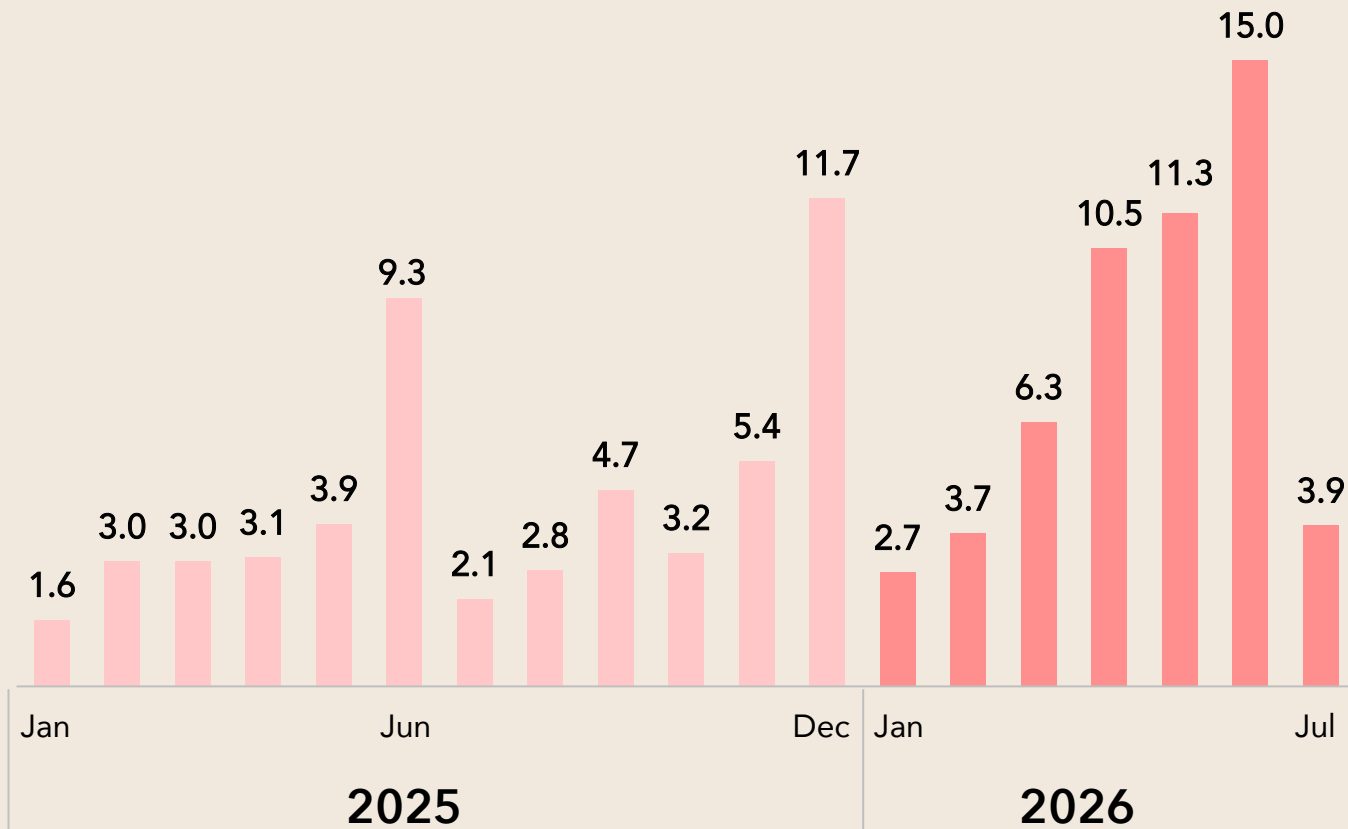


***The Trade War
is Still Alive***

New Tariffs Announced Every 4-5 Days



Average # of days between changes in President Trump tariff policy
(includes new threats and announcements)



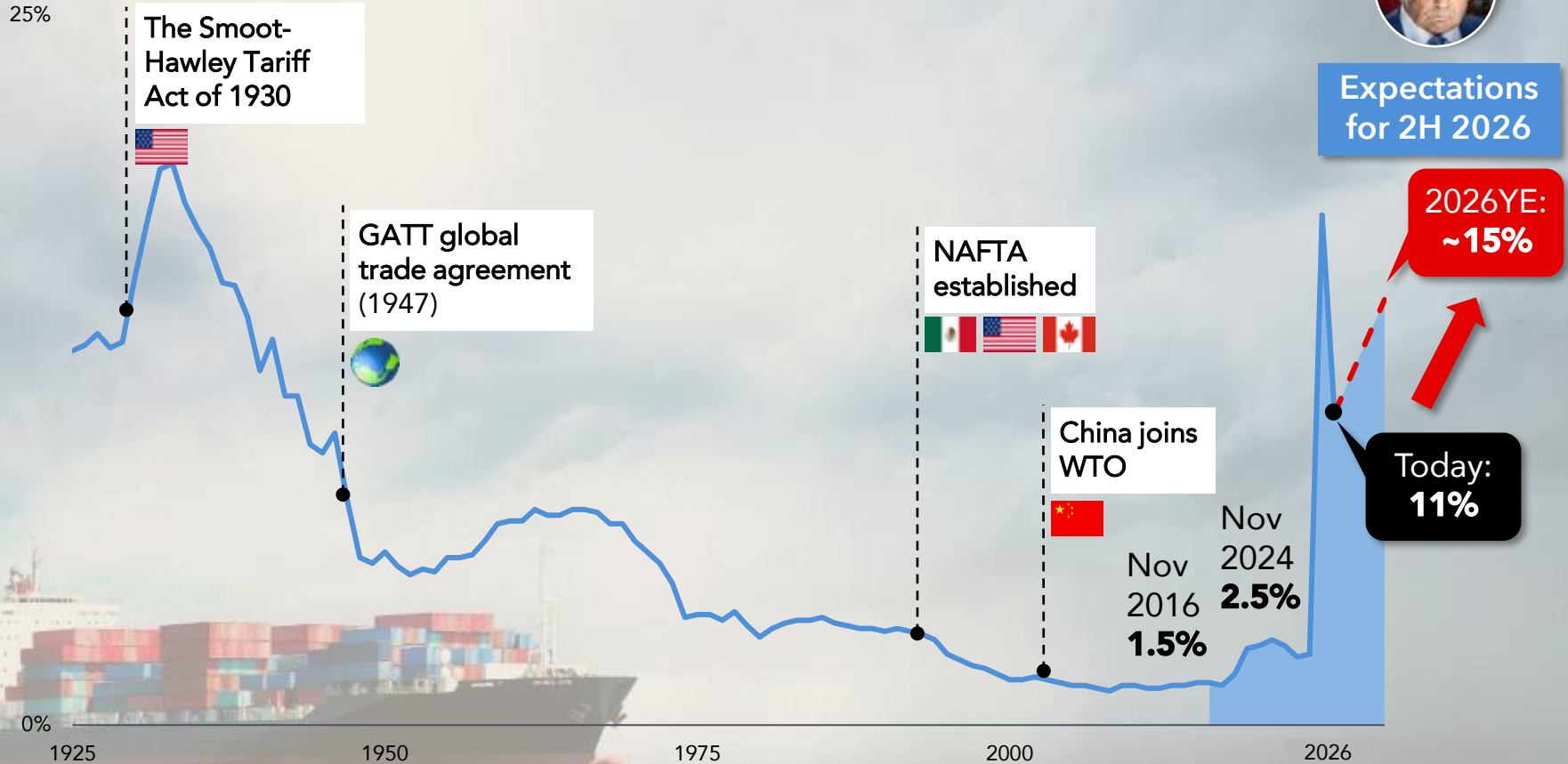
4 days

Median

Source: (1) Various News Sources. January 2025 is Jan 20-31. July 2026 is Jul 1-24.

US Tariffs Will Be Higher in 2H 2026

Average tariff rate on all imports



Source: (1) US International Trade Commission, "US Imports for Consumption, Duties Collected, and Ratio of Duties to Value." Table 1. US Census Bureau. The Tax Foundation, "Trump Tariffs: Tracking the Economic Impact of the Trump Trade War." 2026 rate is an estimate from Yale Budget Lab, Capital Econ & Oxford as of July 2026.

Active or Completed Section 232 Investigations

The Trump administration has initiated over a dozen Section 232 investigations across a range of sectors since Feb 2025, with 7 of those concluded investigations resulting in tariffs.

Section 232 investigations

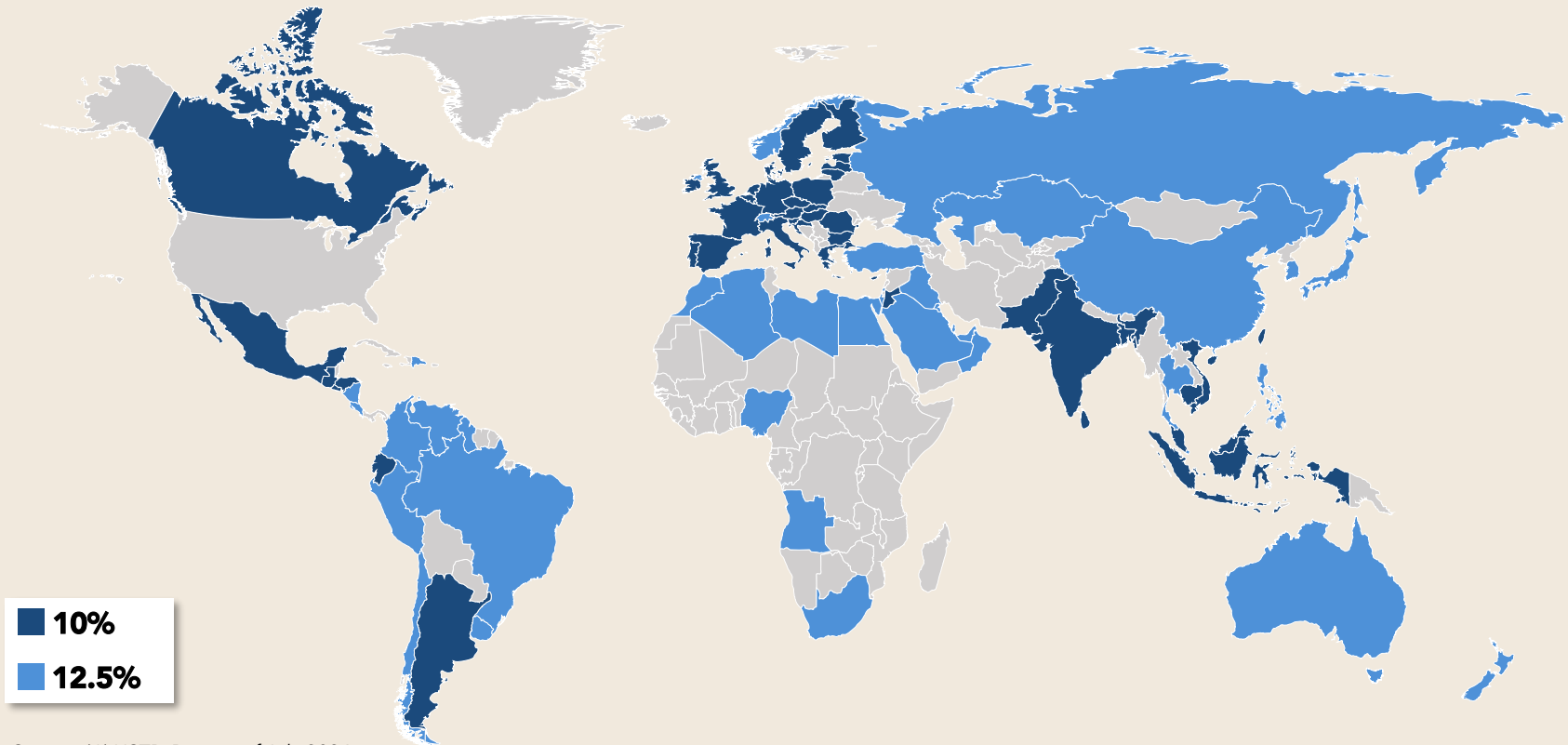
Sector	Announcement of action	Tariff rate
 Auto & auto parts	Effective Apr 2025	25%
 Steel & aluminum	Effective Jun 2025; MAY 2026 expansion	50%
 Copper	Effective Aug 2025; Apr 2026 expansion	50%
 Timber & lumber	Effective Oct 2025	10%
 Heavy-duty vehicles & parts	Effective Nov 2025	25%
 Semiconductors	Effective Jan 2026	25%
 Pharmaceuticals	Effective Jul 2026 (large firms); Sep 2026 (small)	100%
 Commercial aircraft & jet engines	<i>Jul 9: Deferred tariff action in favor of targeted trade negotiations</i>	
 Polysilicon	<i>Decision pending</i>	TBD
 Drones & unmanned aerial vehicles	<i>Decision pending</i>	TBD
 Wind turbines & parts	<i>No later than late Aug 2026</i>	TBD
 Pers. protective & medical equip.	<i>No later than mid-Sep 2026</i>	TBD
 Robotics & industrial machinery	<i>No later than mid-Sep 2026</i>	TBD

Source: (1) US Commerce Department. Various News Sources. Covington, "Current and Forthcoming Section 232 Actions by the Trump Administration." As of July 2026.

Section 301 Forced Labor Tariffs

The USTR concluded its Section 301 forced labor investigation, resulting in a tiered-tariff system of 10% and 12.5% that went into effect on July 24, 2026. These measures replace the temporary 150-day Section 122 tariffs that were enacted earlier this year and stand on a more durable, legally defensible trade framework. The administration's primary trade focus turns to its ongoing Section 301 probe into industrial overcapacity, targeting 16 major economies and could trigger additional tariffs later in the year.

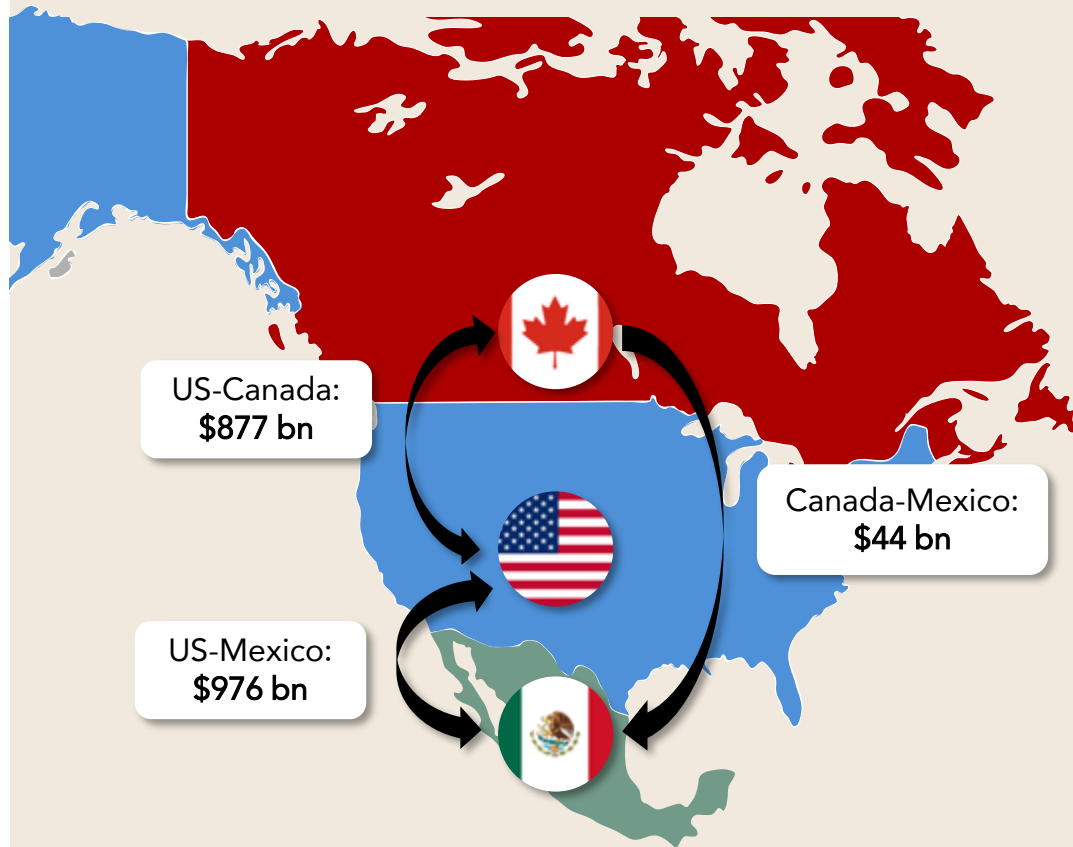
Section 301 forced labor tariffs



Source: (1) USTR. Data as of July 2026.

Threatening to Withdraw from “Irrelevant” USMCA in 2026

Trade in goods and services (2024)



Notable issues:

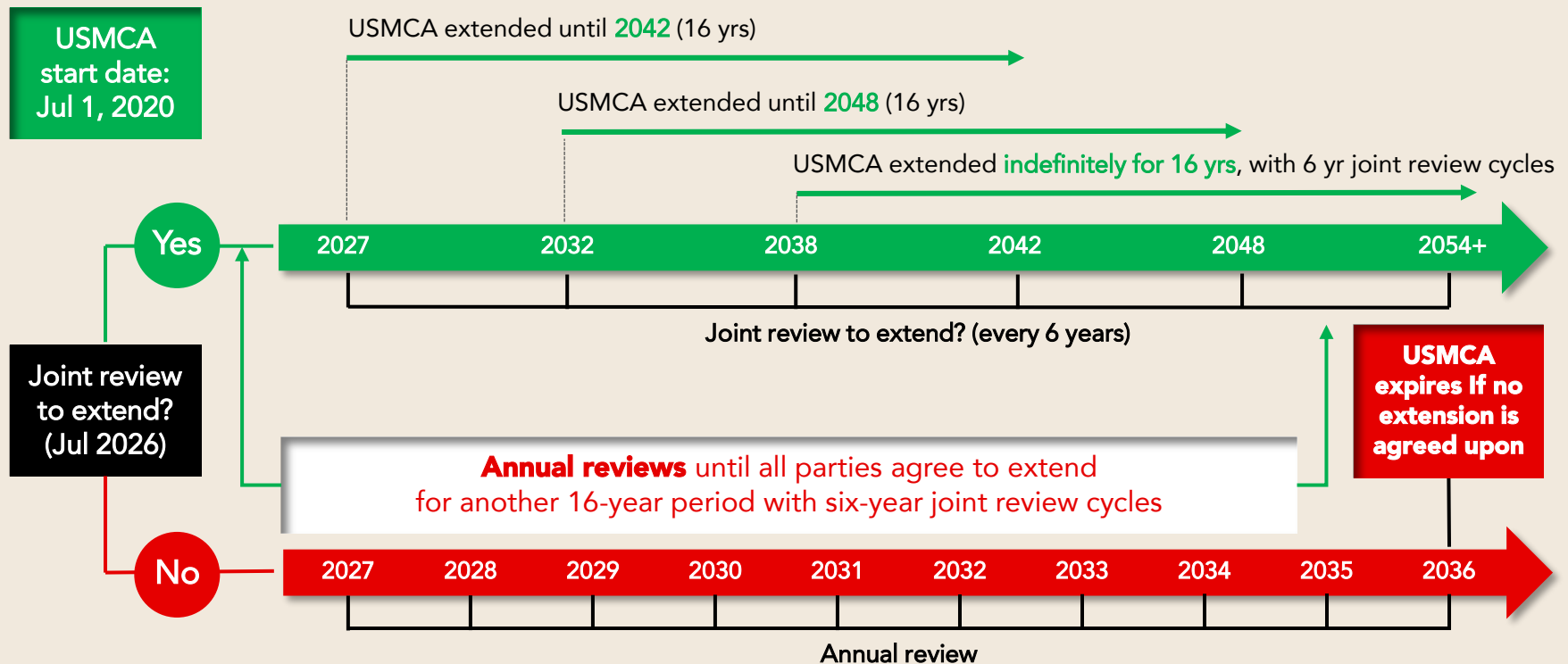
- Auto rules of origin
- Labor enforcement
- Market access (agriculture)
- China backdoor nearshoring
- Dispute resolution compliance
- Digital trade & taxes; AI
- Energy policy friction
- Critical minerals, steel & aluminum
- Non-trade issues (i.e., border, fentanyl)

Source: U.S. Bureau of Economic Analysis. UN Comtrade. Statistics Canada. Canada-Mexico trade is goods only. Data is latest through 2025.

USMCA Transitions to Annual Reviews & Heightened Termination Risk

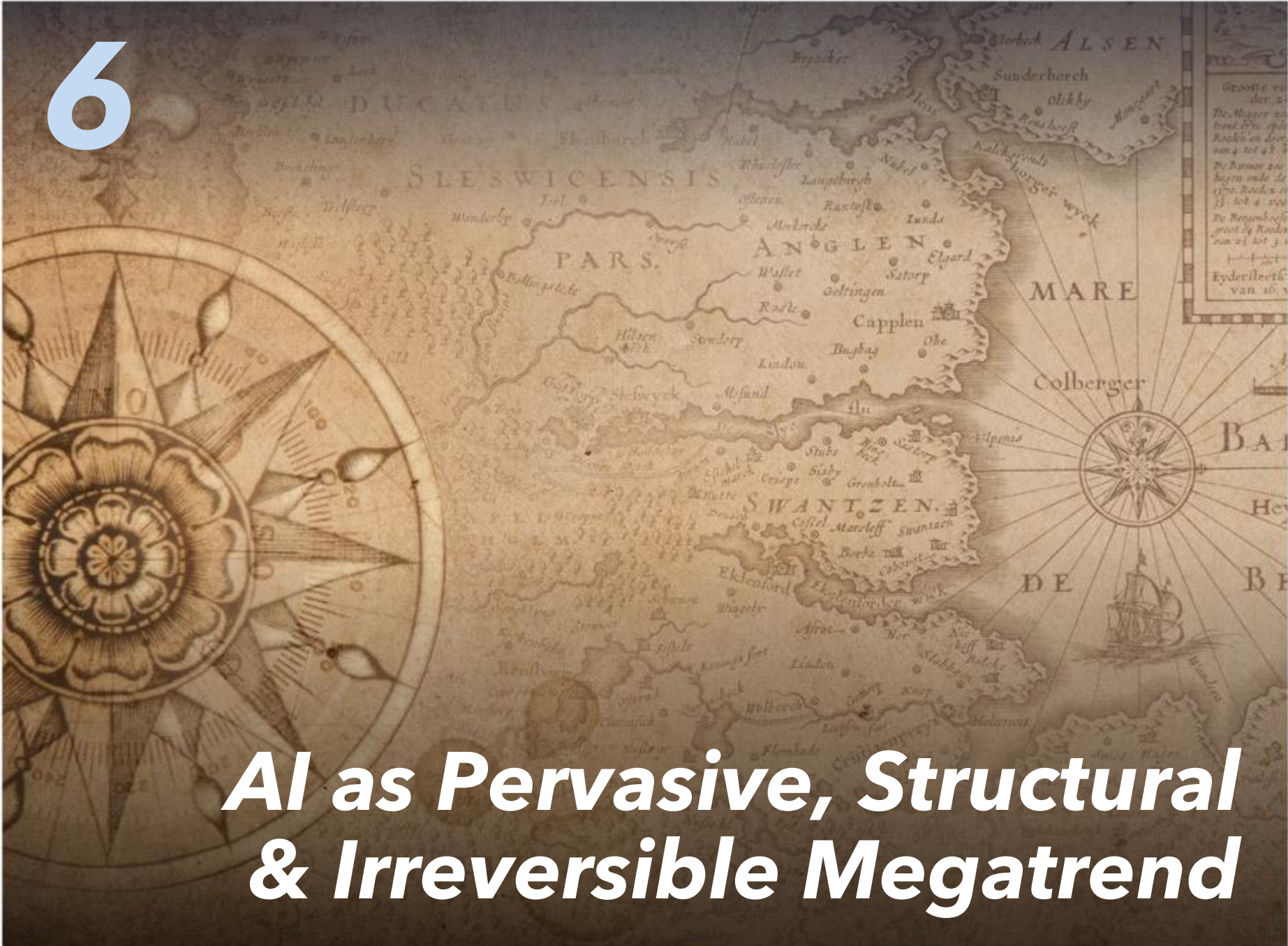
On July 1, President Trump chose not to renew the USMCA, a comprehensive trade agreement that he had re-negotiated just six years ago. Failure to renew the USMCA triggered a new annual review requirement and a 2036 sunset path. This development also raises concerns about potential US withdrawal (after the midterm elections), with a required six-month notice period, in favor of two non-binding bilateral deals with Canada and Mexico.

USMCA review timeline (2026-2054+)



Source: CSIC, "USMCA Review 2026: Six Scenarios for North America's Future." Diego Marroquin and Juan Carlos Baker using FTC and CSIS data,

6

A detailed historical map of the Sleswicensis Pars Anglen Swantzen region, featuring two large compass roses and a decorative border. The map is rendered in a sepia tone with intricate line work and text. The title 'SLESWICENSIS PARS. ANGLENI SWANTZEN.' is prominently displayed in the center. The map includes various geographical features, cities, and a decorative border. A large compass rose is on the left, and a smaller one is on the right. The text 'MARE' and 'DE' are visible on the right side. A small inset box in the top right corner contains additional text.

***AI as Pervasive, Structural
& Irreversible Megatrend***

Global Market Math

**AI
Tailwinds**



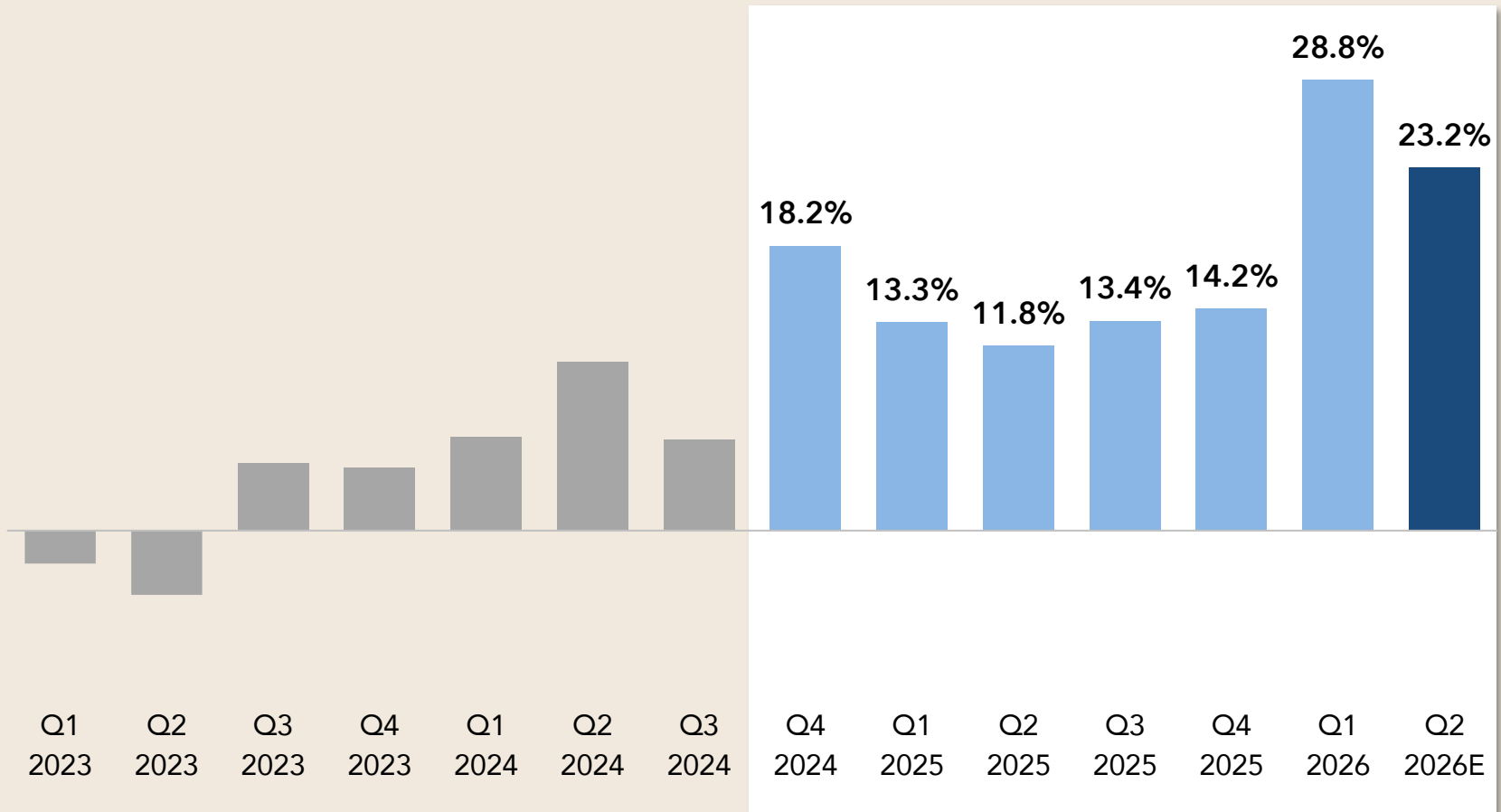
**Iran War
&
Trade War
Headwinds**

If oil < \$120

Exceptional Q1 2026 Earnings Growth

S&P 500 quarterly earnings growth, y/y

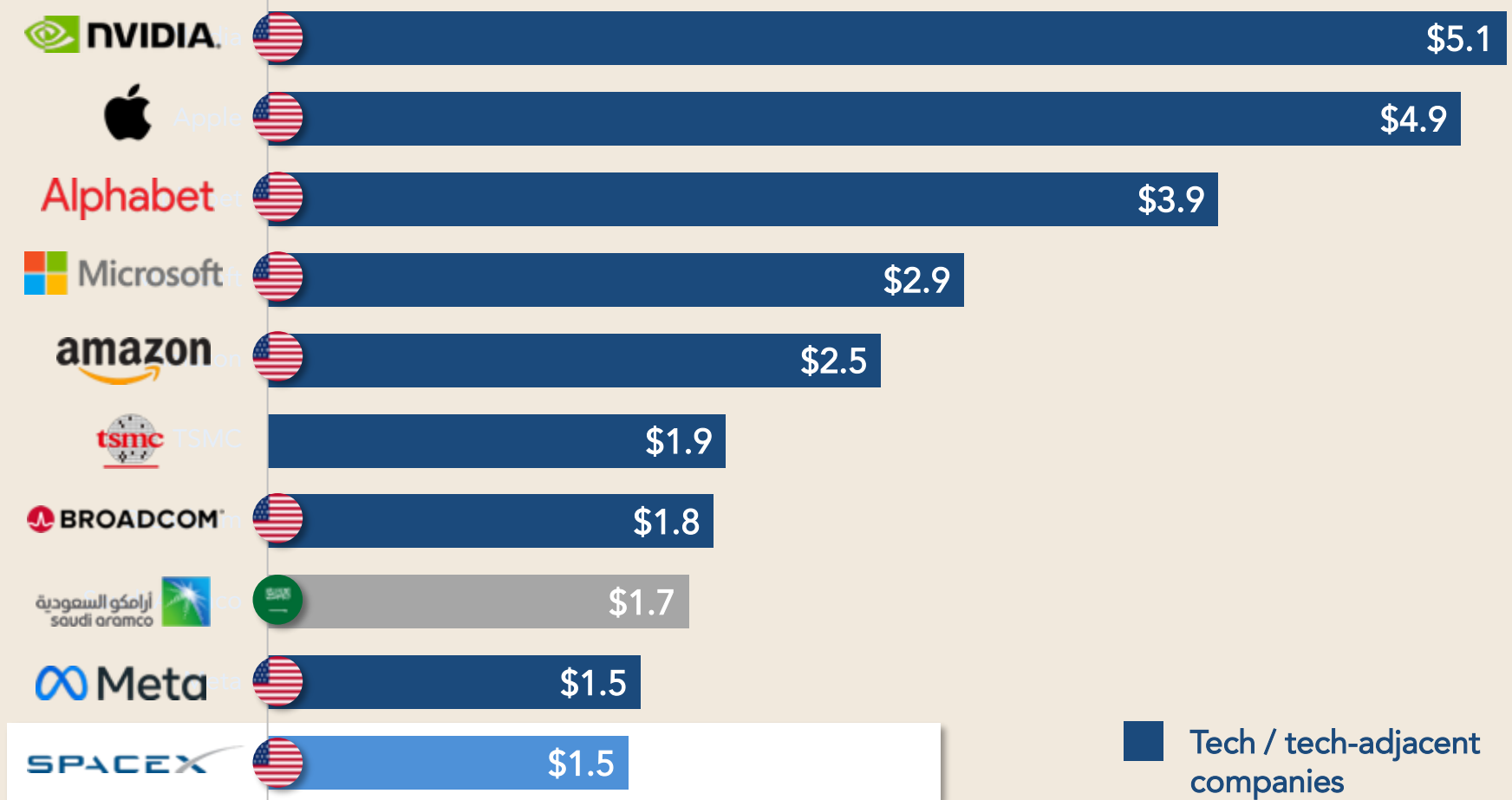
7 consecutive quarters of double-digit earnings growth



Source: (1) FactSet, Earnings Insight Report (June 17, 2026). Q2 2026 earnings growth is estimated rate for S&P 500 for Q2 2026 as of June 30, 2026.

AI Redefines Market Valuations

World's largest companies by market cap, USD tn

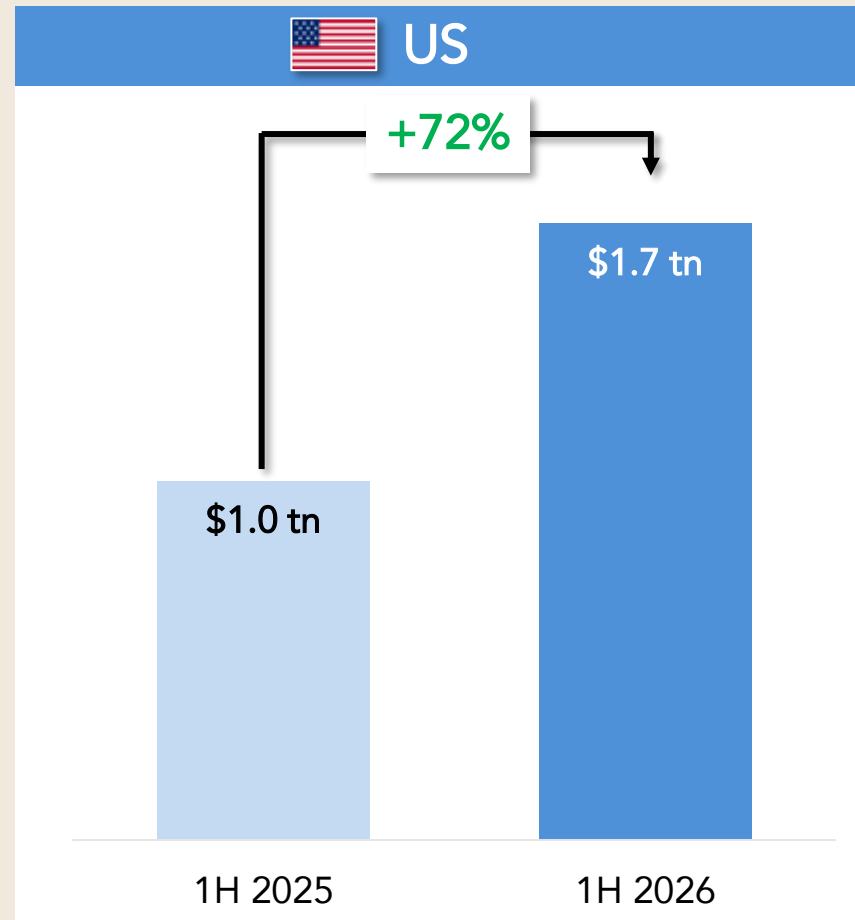
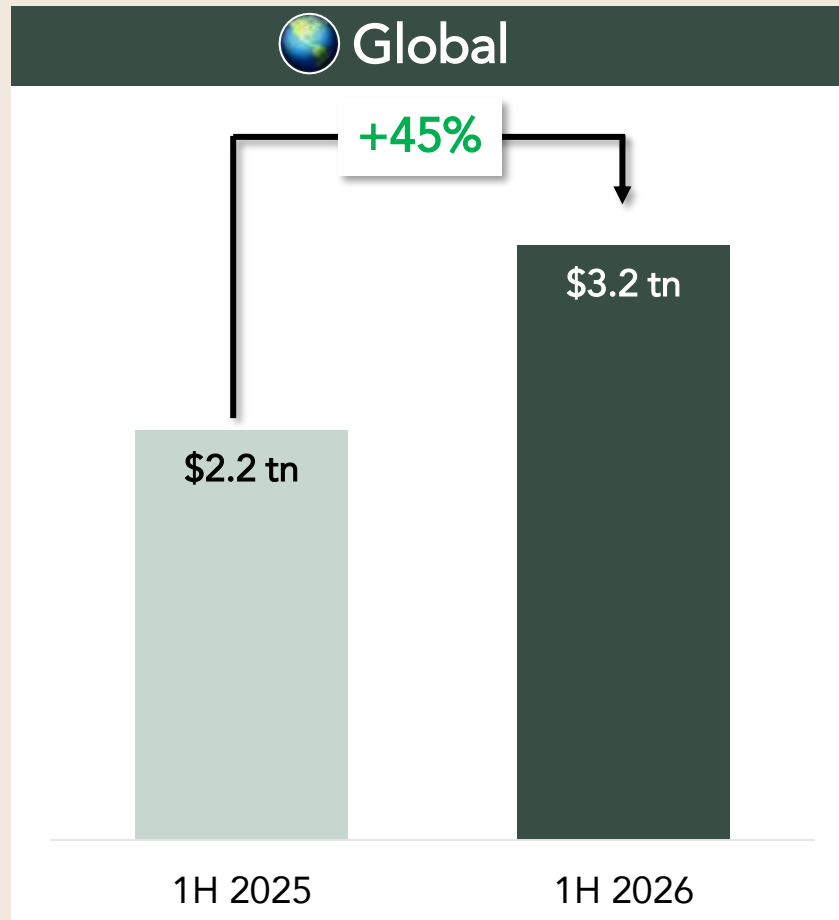


Source: (1) Bloomberg. Data as of July 24, 2026.

Largest 1H for Global M&A on Record



M&A volumes in 1H 2025 vs. 1H 2026 (USD)

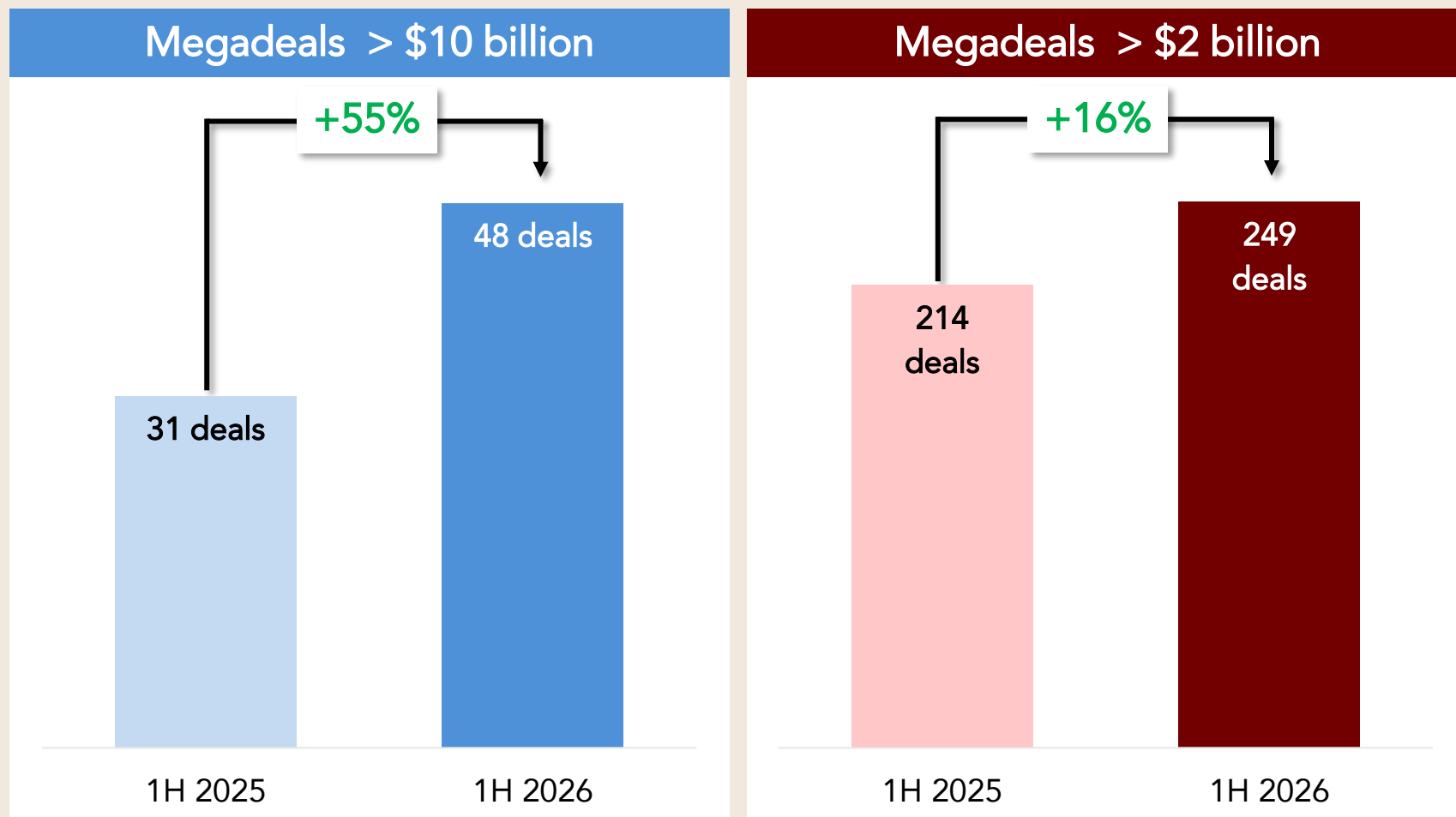


Source: Dealogic. Cortex. Data through June 30, 2026, accessed on July 7, 2026. Region is by target.

Megadeals Drove Resurgent Deal Activity



Global M&A Megadeals 1H 2025 vs. 1H 2026 (# of deals)

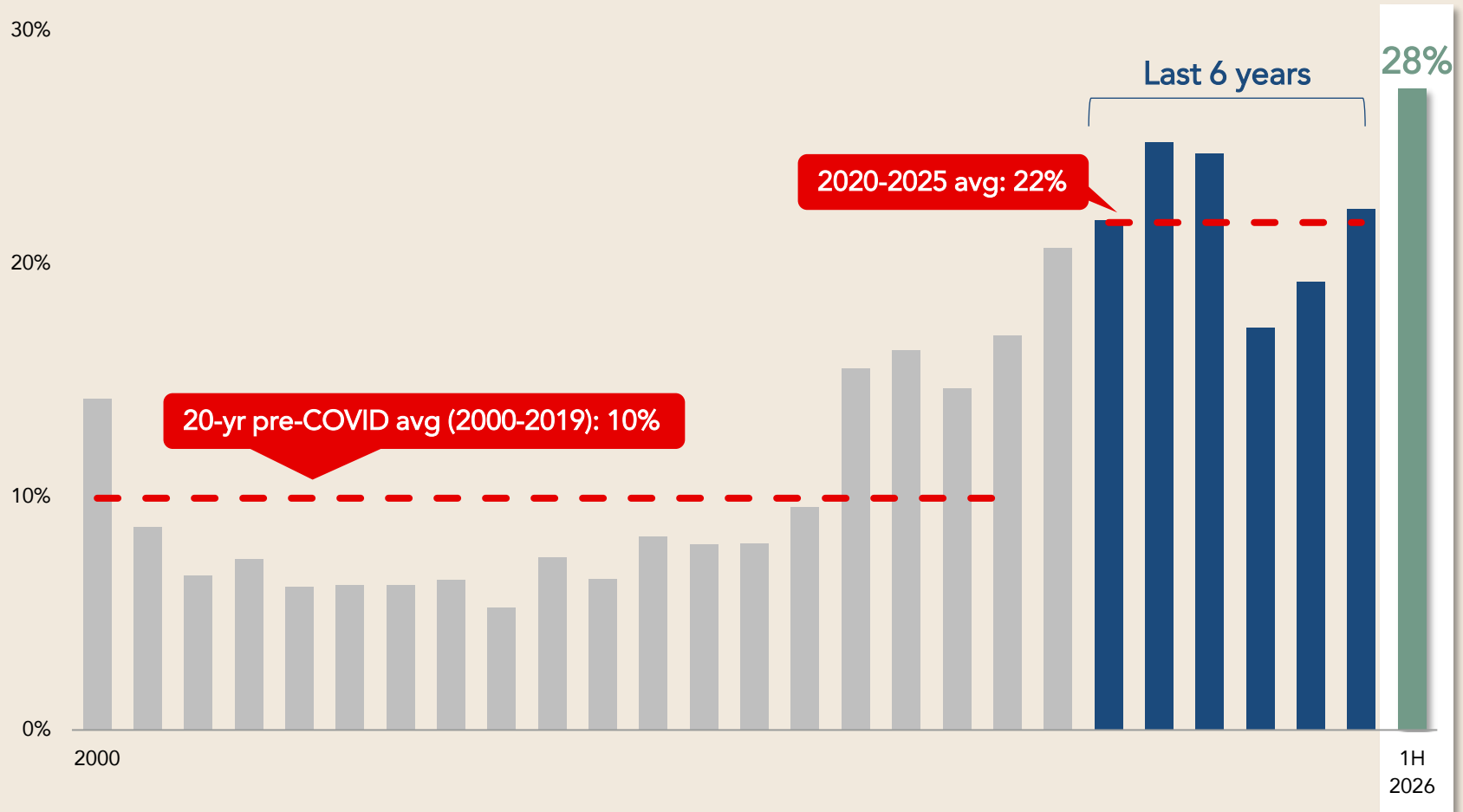


Source: Dealogic. Cortex. Data through June 30, 2026, accessed on July 7, 2026. Region is by target. Greater than or equal to \$2bn and \$10bn.

Technology Was a Pervasive M&A Driver



Tech as a % of global M&A

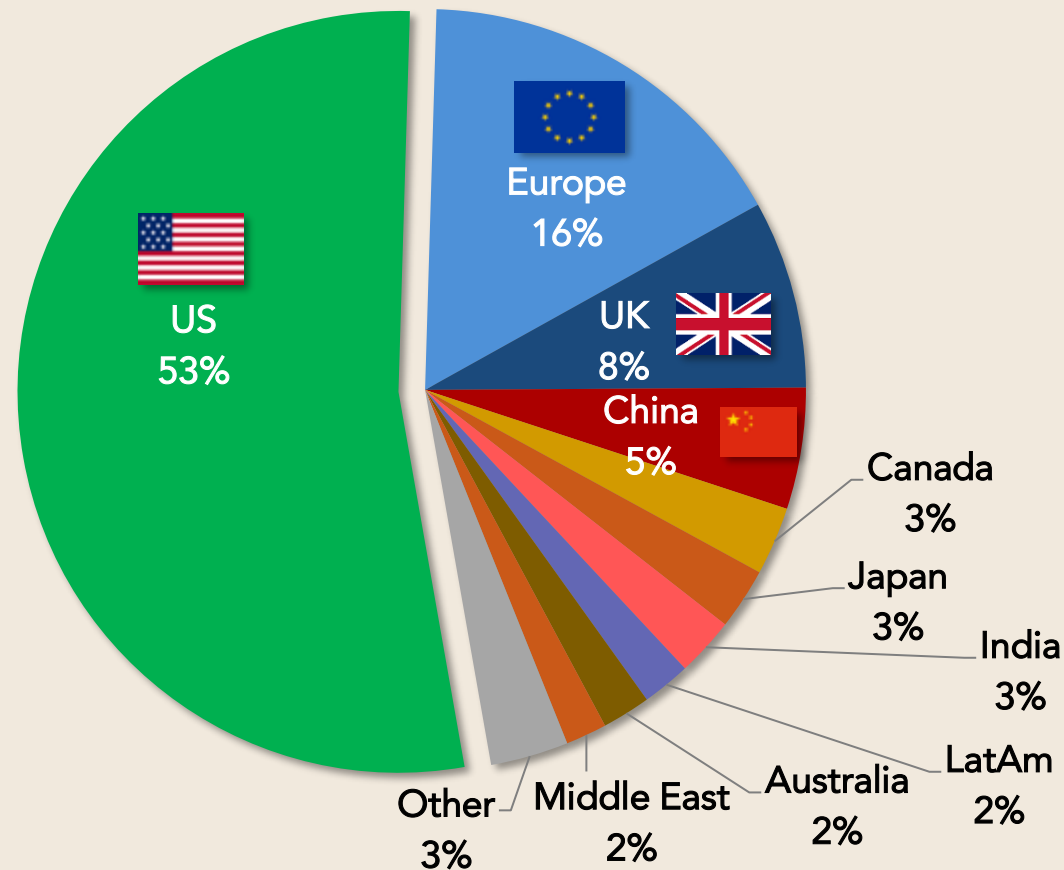


Source: (1) Cortex. Dealogic. Data is through June 30, 2026. Data accessed July 7, 2026. Includes rank eligible, M&A deals. Technology is computers and electronics as target sector.

US Over 50% of YTD Deal Activity



Global M&A activity, by region (1H 2026)

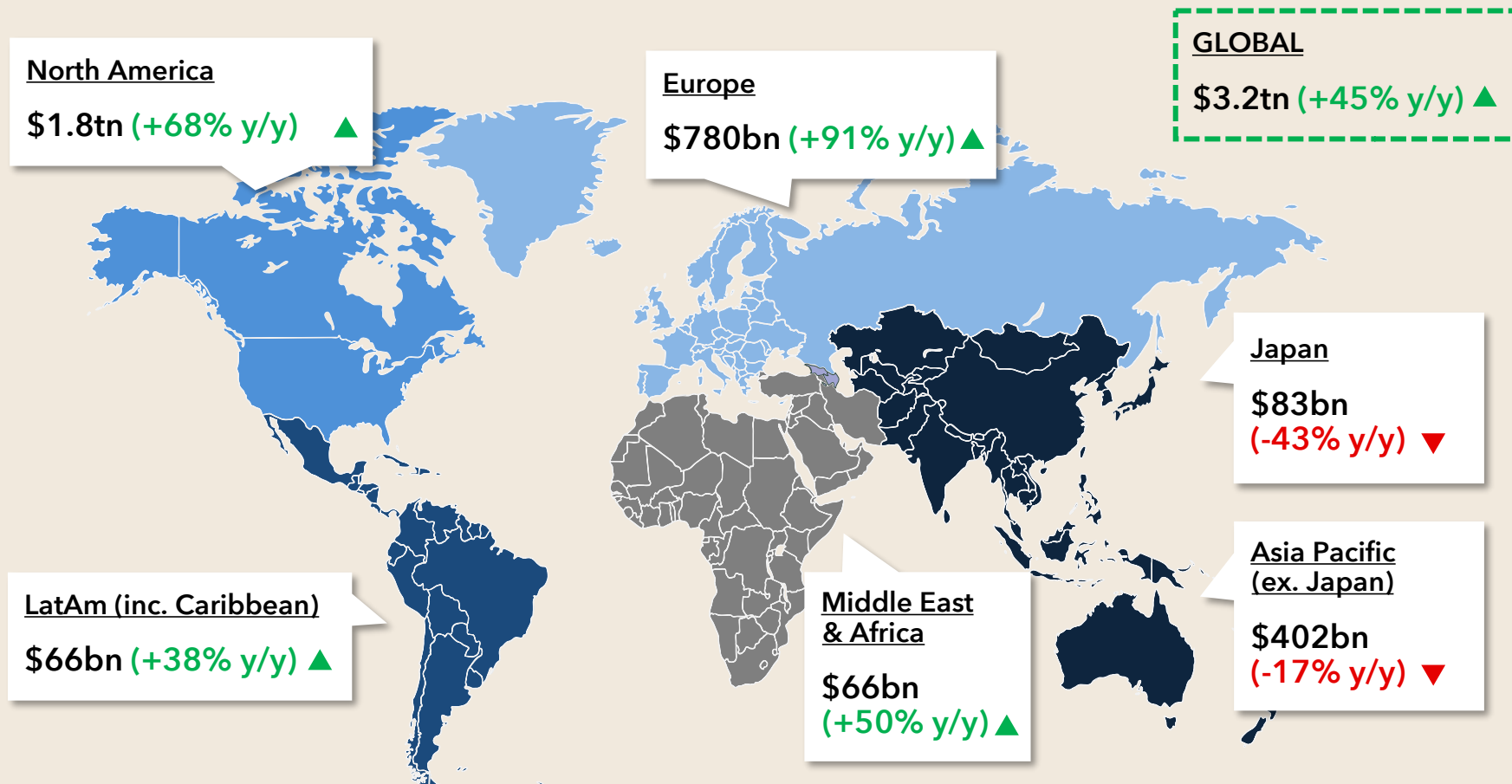


Source: (1) Cortex. Dealogic. Data through June 30, 2026. Data accessed July 7, 2026. Includes rank eligible, M&A deals. China includes HK. LatAm includes Caribbean. By target region.

1H 2026 Global M&A Activity by Region



M&A volumes in 1H 2026 vs. 1H 2025 and y/y increase (based on target region)

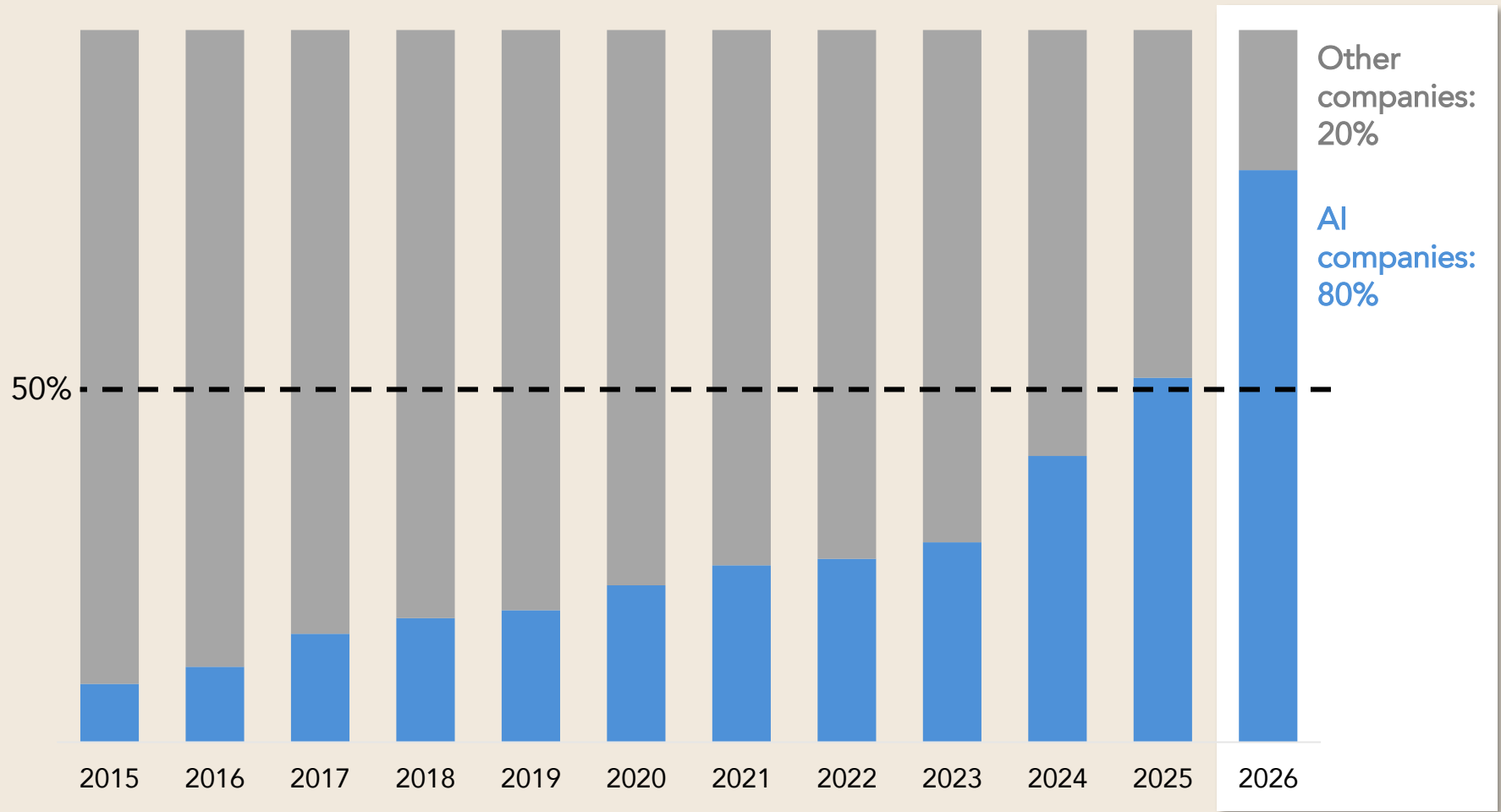


Source: (1) Dealogic. Cortex. Data through June 30, 2026, accessed on July 7, 2026. Region is by target.

80% of Global VC Activity is Now AI



Share of global VC deal value, by company type

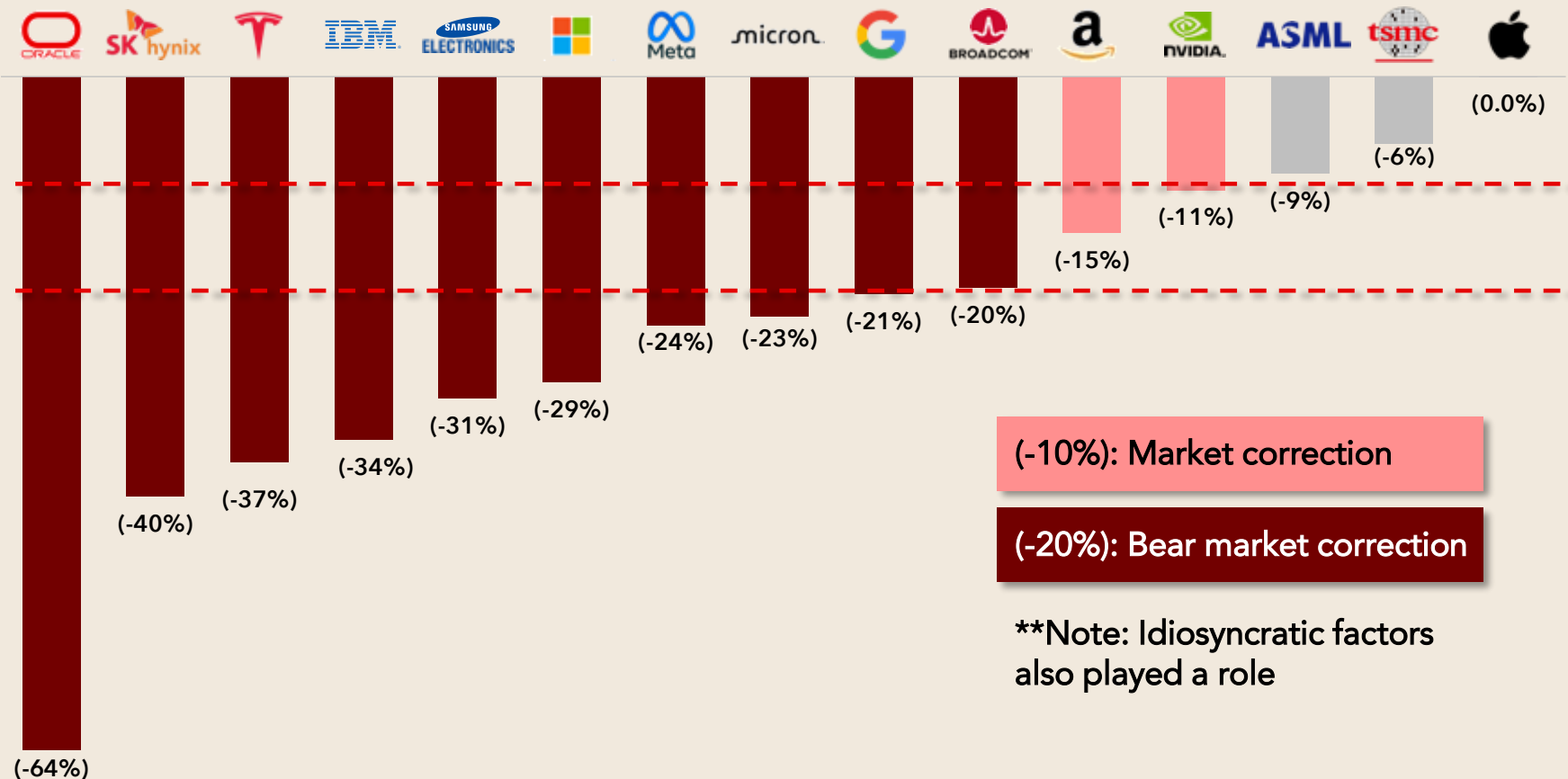


Source: (1) Pitchbook, "Q1 2026 Global VC First Look." Data through March 31, 2026.

Big Tech Stocks Enter Correction Territory

Big tech and AI hyperscalers have rolled into a textbook correction, one that looks **less like a macro scare and more like a position / valuation reset** after a parabolic AI run. By historical standards, a 10-20% selloff after a multi-year melt-up is **neither unusual nor, by itself, thesis-breaking**.

Tech stock performance since 52-week high



Source: (1) Bloomberg. Data as of July 24, 2026.

7



***“Chip supply chains
will shape geopolitics
more than oil over
the next 50 years.”***

Pat Gelsinger,
Former CEO of Intel (January 2023)



Evolving Bottlenecks to Scaling AI



2023 – 2024: GPUs (AI microchips)

2025 – 2026: Memory chips (DRAM, NAND)

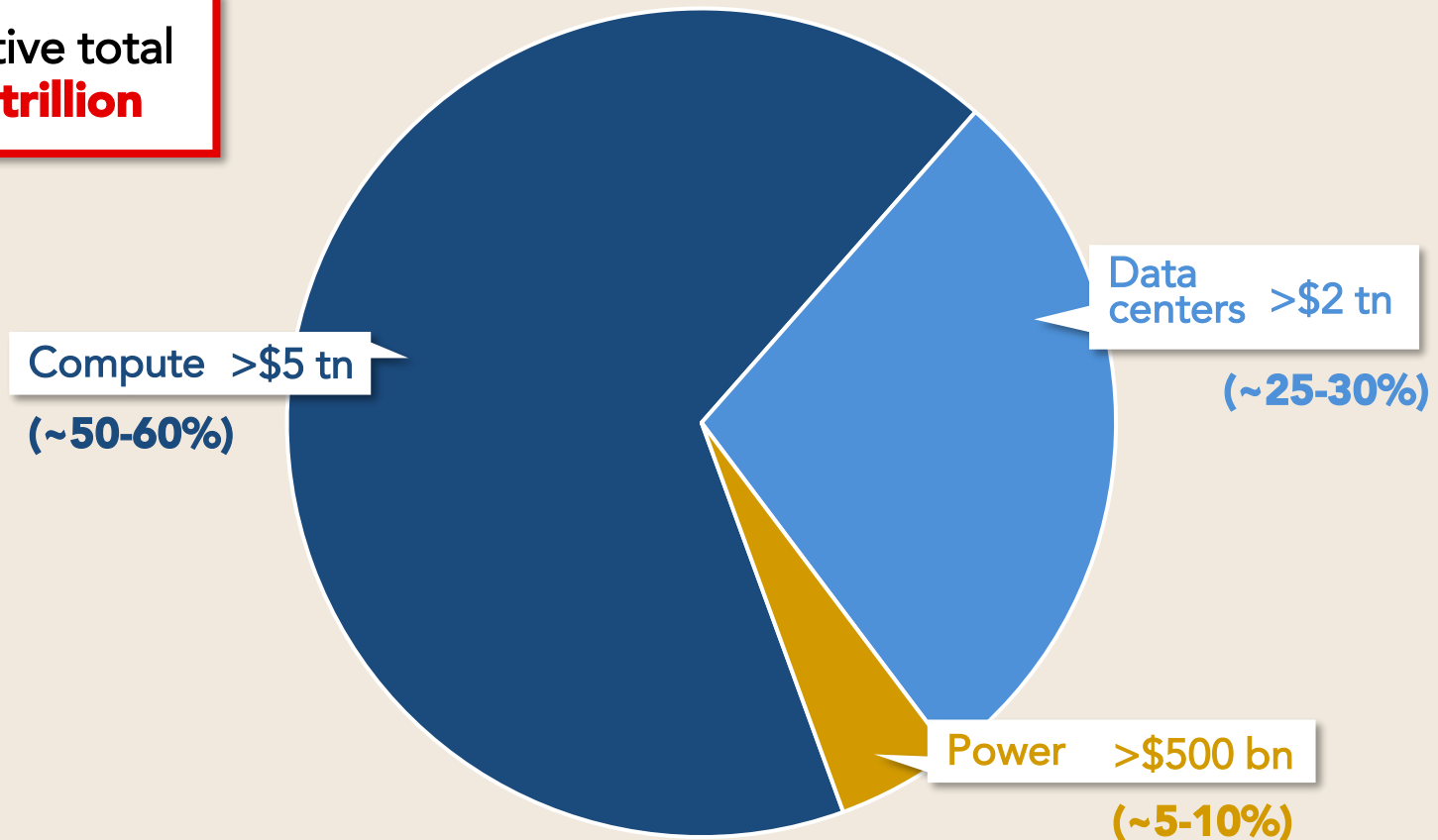
2027 – 2028: Energy & power grid

2023 – Onward: Access to scale capital

Largest Tech & Capex Supercycle in History

Baseline aggregate AI capex estimates, USD tn (2026-2031)

Cumulative total
~\$8 trillion

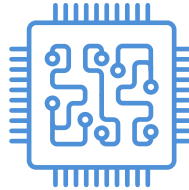


Source: (1) Goldman Sachs, "Tracking Trillions: The Assumptions Shaping the Scale of AI Build-Out" (April 2026). Forecasts and expectations based on GS assumptions. Assumptions: Nvidia accounts for 75% of total compute spend in each period. 5% y/y compute growth past 2031. Vera Rubin chip as the baseline spec (\$80.5k per GPU (including node costs), 3,000 W per package). 1.2 PUE, \$15mn per MW for data centers, and \$2,500 per kW for new power. 15% of required data center space is brownfield (i.e. excluded from calculation) in 2026, growing to 30% in 2031. Totals may not sum due to rounding.

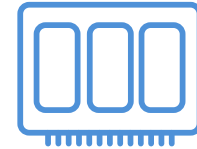
Highly Integrated Global Semiconductor Supply Chain



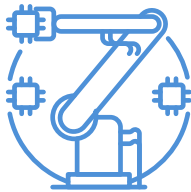
**EDA software
design tools**



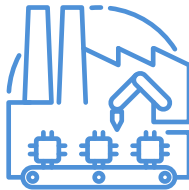
**Fabless
chip design**



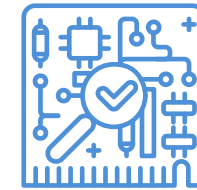
**Memory chip
IDMs**



**Capital
equipment**



**Foundries
(manufacturing)**



**Assembly,
packaging & test**

China's Dominance of the Rare Earth Value Chain

China's dominance of the complete rare earths value chain – from reserves to refining – and the 10+ year lead to the West in this regard, is one of the most consequential and underappreciated structural stories in the global economy and geopolitics. Further, as evidenced by policy decisions in 2025, China has demonstrated a willingness to use this leverage.

China's global share in the rare earth value chain



Reserves

~49%



Mining / production

~70%



Refining

~90%



Permanent Magnets

~90-94%



Heavy Rare Earths

> 99%

Source: Reserves is US Geological Survey data as of 2025. Mining / production is IEA 2025 data. Refining is CSIS 2025. Permanent magnets is IEA / CFR 2026. Heavy rare earths is IEA data.

Inflection Point for AI Expansion Has Shifted to Energy & Infrastructure

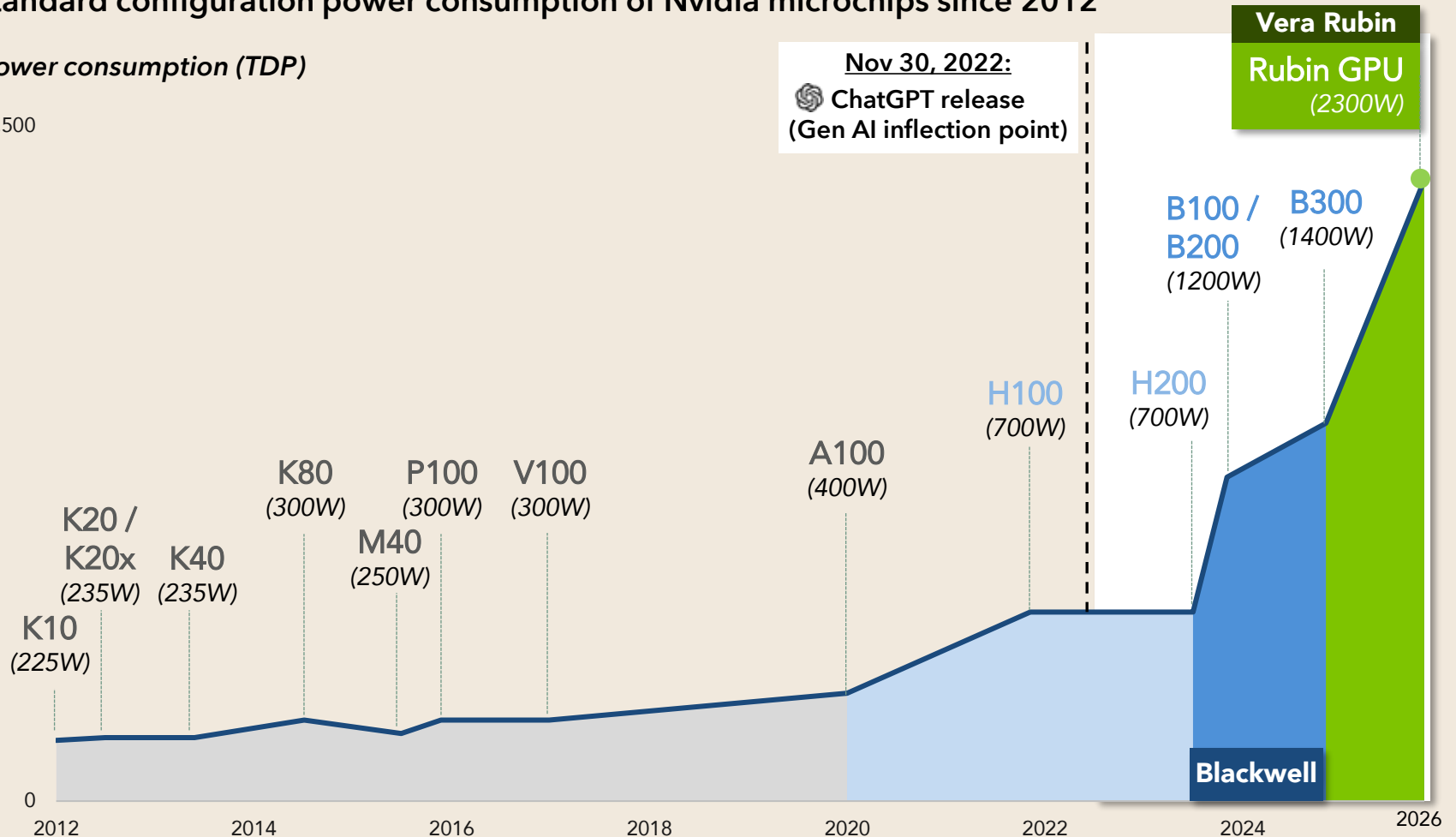


Standard configuration power consumption of Nvidia microchips since 2012

Power consumption (TDP)

2,500

Nov 30, 2022:
 ChatGPT release
(Gen AI inflection point)

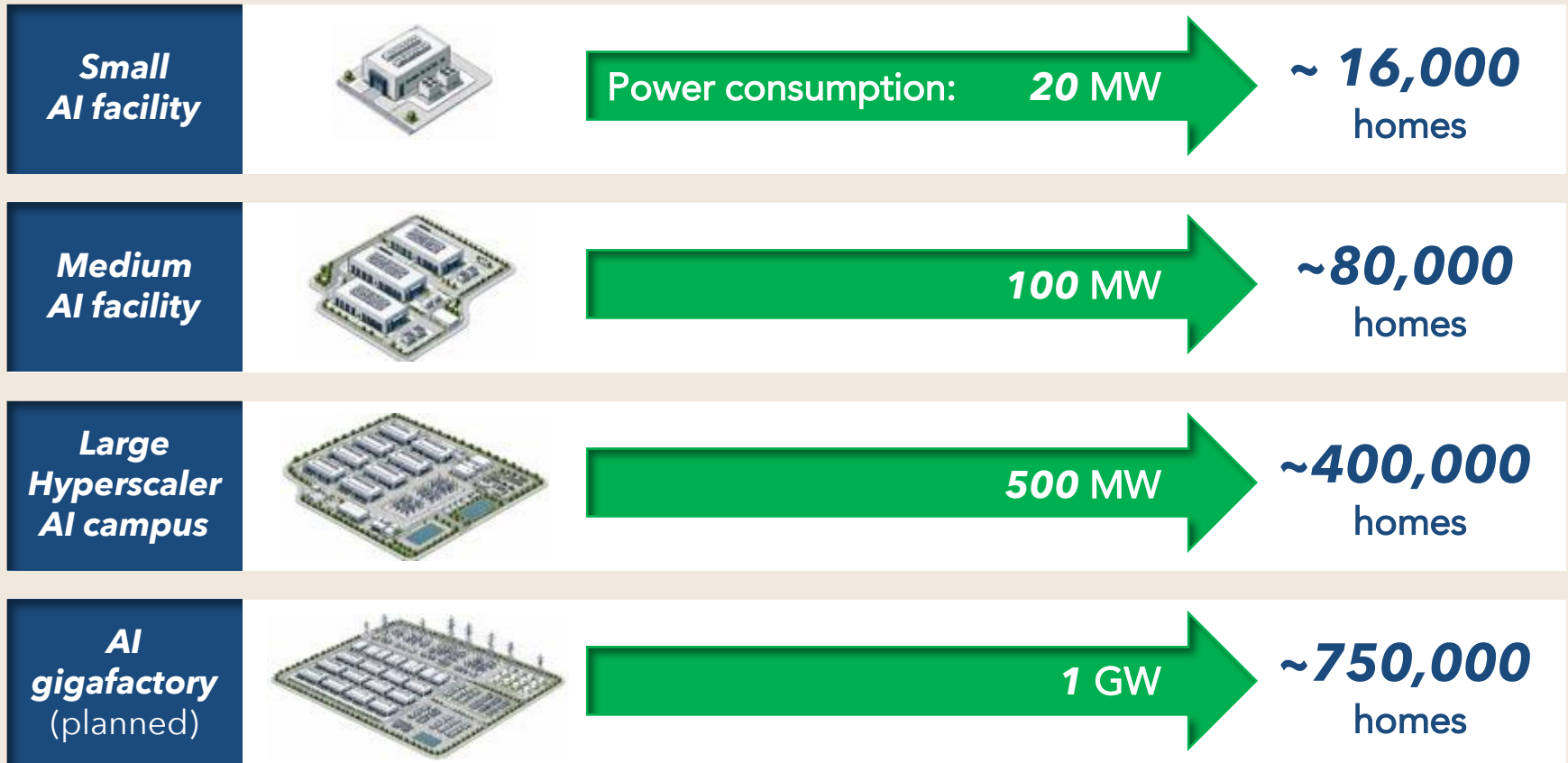


Source: (1) Nvidia. Various news sources.

Energy Demands of New AI Data Centers

According to data from the US Energy Information Agency, a new gigawatt-sized data center at 85% peak capacity will consume as much energy in a year as approximately 750,000 households or nearly 2 million people.

How much power does an AI data center use?



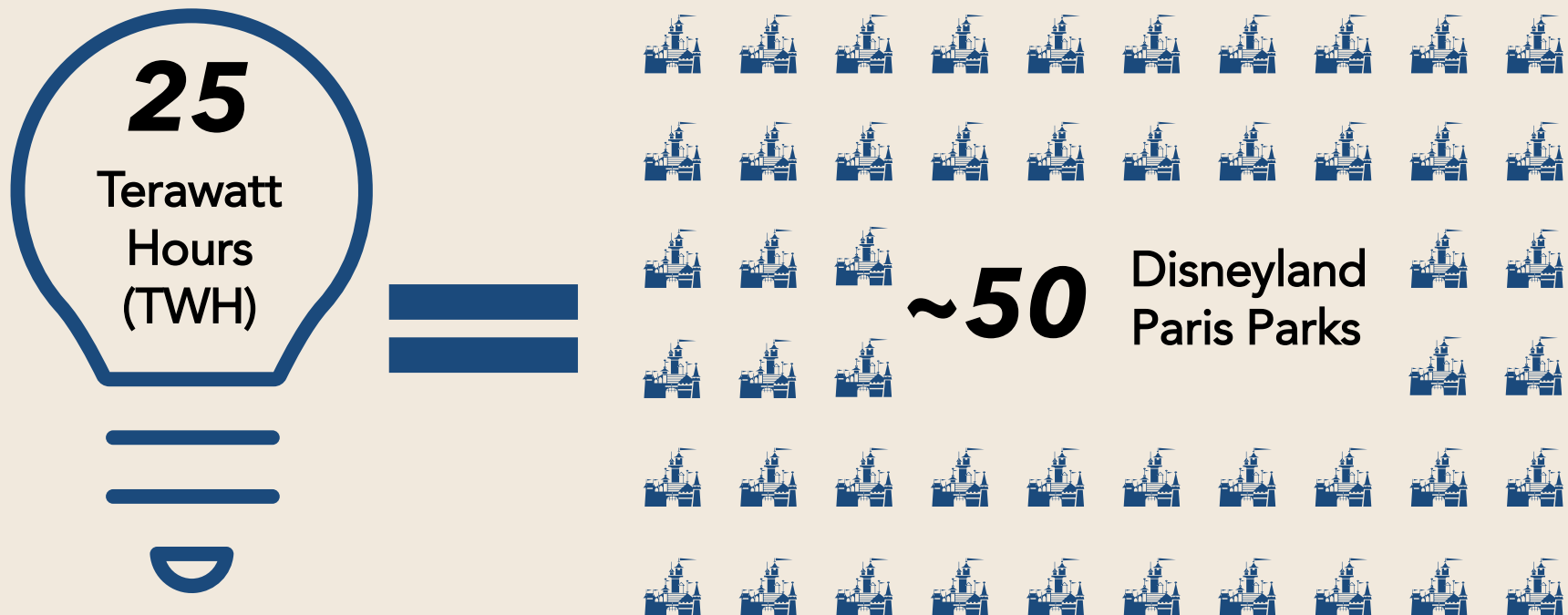
Source: (1) IEA, "Energy and AI" (April 2025). Federal Energy Regulatory Commission, "Interconnection of Large Loads to the Interstate Transmission System". Introl, "Nuclear Power for AI: Inside the Data Center Energy Deals".

Alphabet's Annual Energy Use

Alphabet

Alphabet's annual energy use alone is equivalent to ~2.5 million households, or nearly 50 Disneyland Paris parks for an entire year.

Alphabet's annual energy consumption



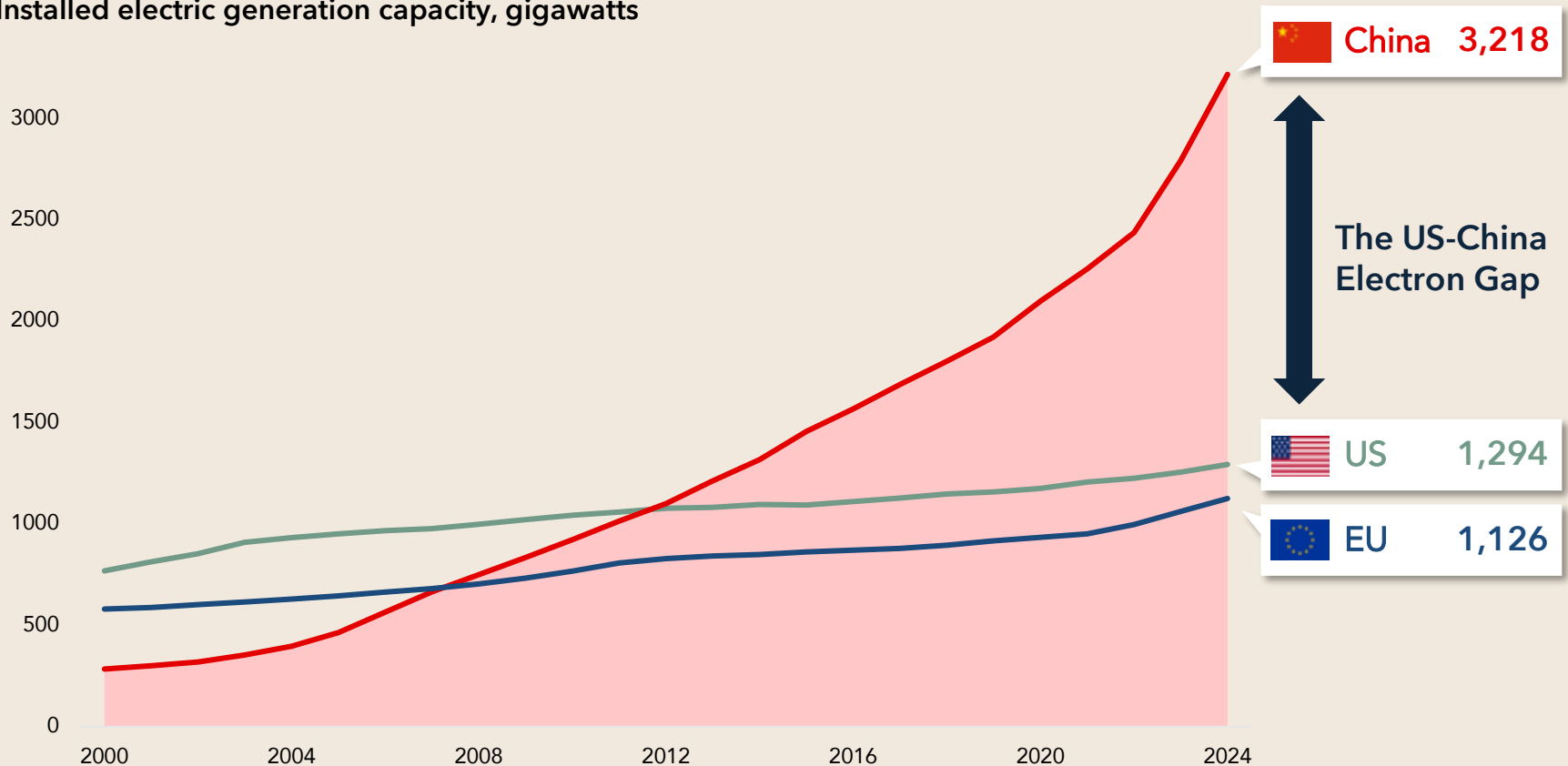
Source: IMD, "Big AI's dirty secret: The environmental cost of generative AI" (March 2025). Alphabet, "2023 Environmental Report".

The World's Largest Power Grid



Power and electricity has become a **core competitive advantage** for China in the AI arms race. Over the last 15 years, **China increased its power production more than the rest of the world combined**, and currently boasts **the world's largest power grid**. Last year, China generated **more than twice as much electricity as the US**. Looking ahead, China is expected to invest **more than \$500 billion on power grid projects through 2030**.

Installed electric generation capacity, gigawatts

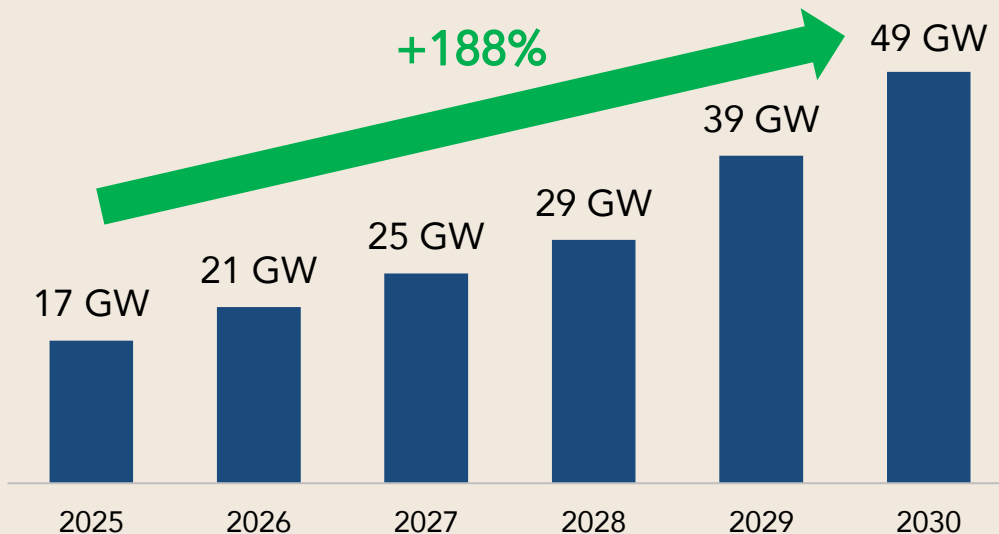


Source: (1) WSJ, "China's AI Power Play: Cheap Electricity from World's Biggest Grid." EIA (US), National Bureau of Statistics (China). IEA. Federal Reserve.

Moving Off-The-Grid: “Behind-the-Meter” (BTM) Power Capacity

Large AI operators are increasingly viewing power as a **strategic input rather than a pass-through utility cost** with added transmission constraints, connection delays and regulatory friction. Many hyperscalers are instead moving off-the-grid, building **dedicated on-site or adjacent power generation that is physically and commercially tied to a specific data center**, with the grid used only as a backup or off-peak balancing source. To be sure, access to reliable and efficient energy has quickly become as important to AI’s buildout as the availability of low cost, scale capital and high-performing semiconductors.

Cumulative “behind-the-meter” US power capacity growth estimates



Sources of BTM
• Nat gas engines & turbines
• Hydrogen & nat gas fuel cells
• Small modular reactors (SMR)
• Battery energy storage systems (BESS)
• Solar photovoltaic (PV)
• On-site wind
• Geothermal energy
• Coal-mine methane

By 2030, about 50% of incremental power capacity in the US will be BTM

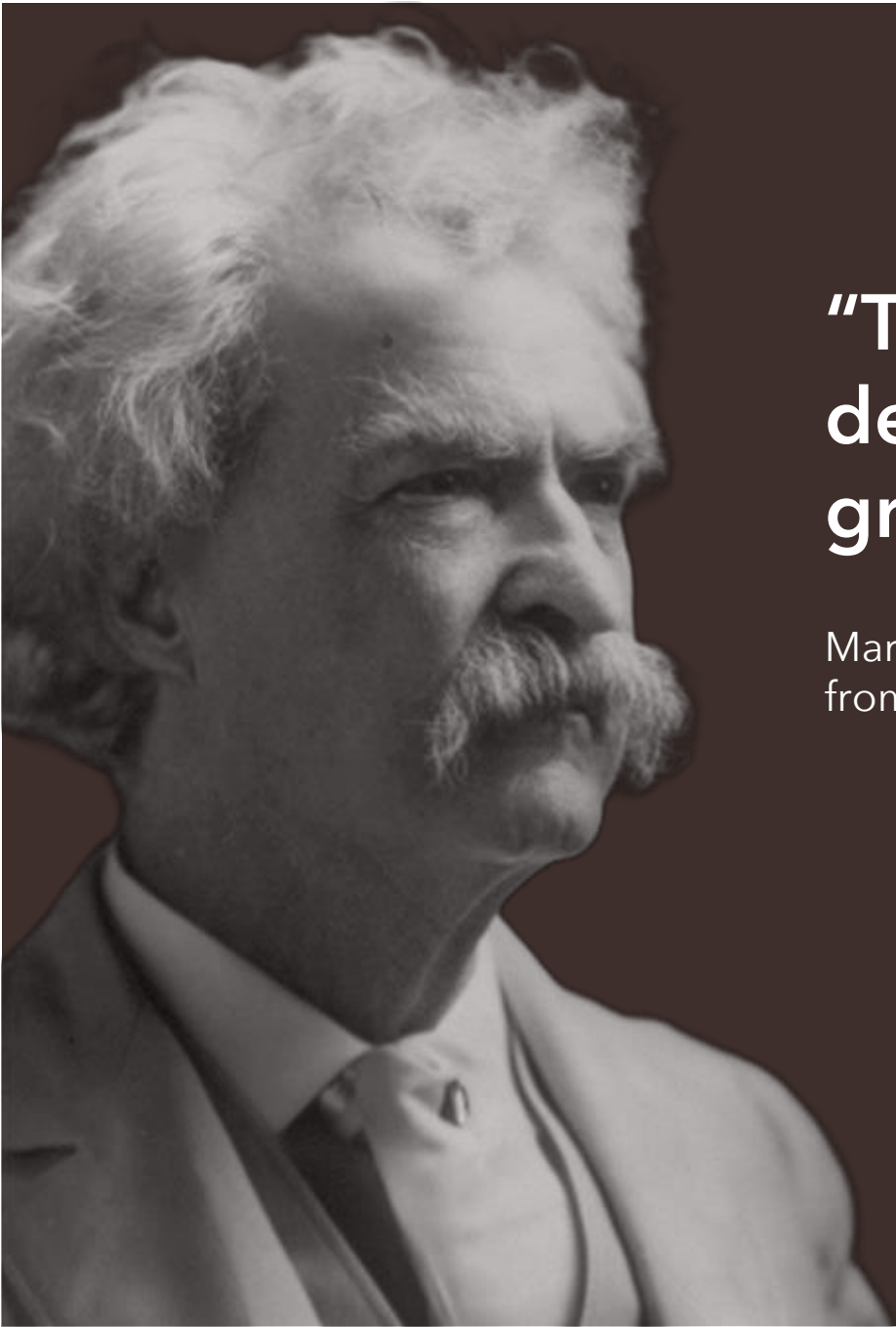
Source: (1) RAND, “How Much More Power Can the U.S. Grid Provide for AI?”

8



A detailed historical map of the Sleswicensis Pars Anglen Swantzen region, featuring two large compass roses and a decorative border. The map is rendered in a sepia tone with intricate line work and text. The title 'SLESWICENSIS PARS. ANGLENI SWANTZEN.' is prominently displayed in the center. The map includes various geographical features, cities, and a small inset map in the top right corner. The compass roses are ornate, with one on the left and one on the right, both showing cardinal and intercardinal directions. The map is framed by a decorative border with a repeating pattern.

AI Resets Global Geostrategic Landscape

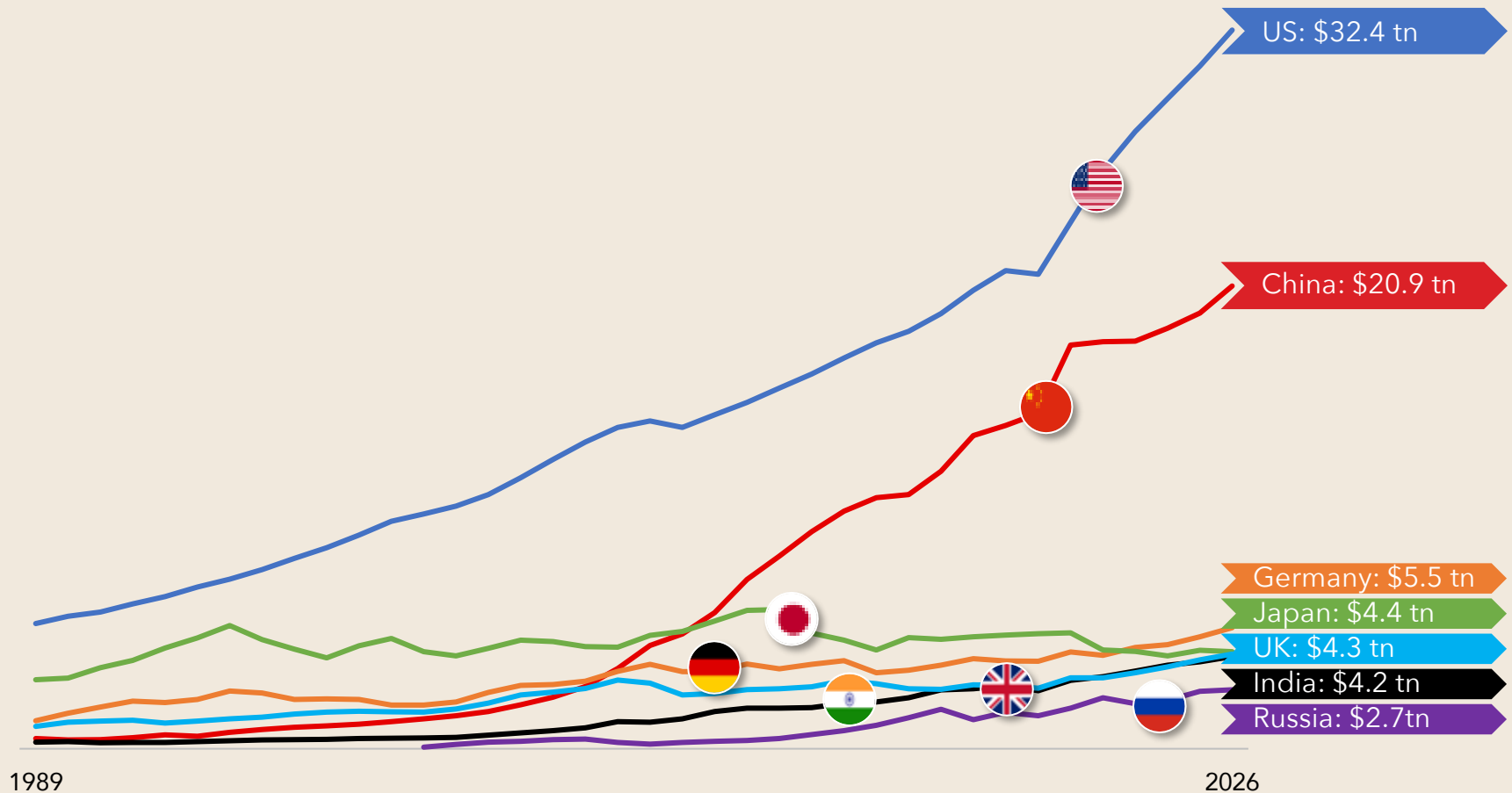
A black and white portrait of Mark Twain, showing him from the chest up, facing slightly to the right. He has a large, white, curly mustache and white hair. He is wearing a dark suit jacket over a light-colored shirt and a dark tie. The background is dark and out of focus.

**"The rumors of my
death have been
greatly exaggerated."**

Mark Twain, acclaimed American novelist,
from London in 1897

AI & Innovation Driving Outsized GDP Growth

Nominal GDP, current USD



Source: (1) IMF. Data as of July 2026. 2026 GDP is an estimate.

The Evolution of Global AI LM Rankings



Historical ranking of top 5 AI language models

Jul 2026	Jul 2025	Jul 2024	Jul 2023
Rank Language model	Rank Language model	Rank Language model	Rank Language model
1.  Claude Fable 5	1.  Gemini 2.5 Pro	1.  Chat GPT 4o	1.  Chat GPT 4
2.  Claude Opus 4.6 (Thinking)	2.  Gemini 2.5 Pro Preview	2.  Chat GPT 4o Mini	2.  Claude v1
3.  Claude Opus 4.7 (Thinking)	3.  Grok 4	3.  Claude 3.5 Sonnet	3.  Claude Instant v1
4.  Claude Opus 4.6	4.  Chat GPT o3	4.  Gemini Advanced	4.  Chat GPT 3.5 Turbo
5.  Muse Spark 1.1	5.  ChatGPT 4o Latest	5.  Meta Llama 3.1 405b-Instruct	5.  Guanaco-33B

Source: (1-4) Arena.AI. Data as of July 23, 2026. 2023 ranking is from LMSYS and HuggingFace. Ranking is based on user-submitted prompts and relative performance of language models. Based on over 250 million real conversations and over 3.5 million head-to-head votes.

Duopoly in Leading Global AI LM Rankins



ArenaAI global ranking of top 40 AI language models

Rank	Language model
1.	 Claude Fable 5
2.	 Claude Opus 4.6 (Thinking)
3.	 Claude Opus 4.7 (Thinking)
4.	 Claude Opus 4.6
5.	 Muse Spark 1.1
6.	 Claude Opus 4.7
7.	 Muse Spark
8.	 Gemini 3.1 Pro Preview
9.	 Gemini 3 Pro
10.	 Kimi k3
11.	 Chat GPT 5.6 Sol xHigh
12.	 Gemini 3.6 Flash
13.	 Claude Opus 4.8 (Thinking)
14.	 Chat GPT 5.5 High
15.	 Chat GPT 5.4 High
16.	 Chat GPT 5.5
17.	 Gemini 3.5 Flash High
18.	 Chat GPT 5.2 Chat Latest
19.	 Qwen 3.7 Max Preview
20.	 Grok 4.20 Beta1

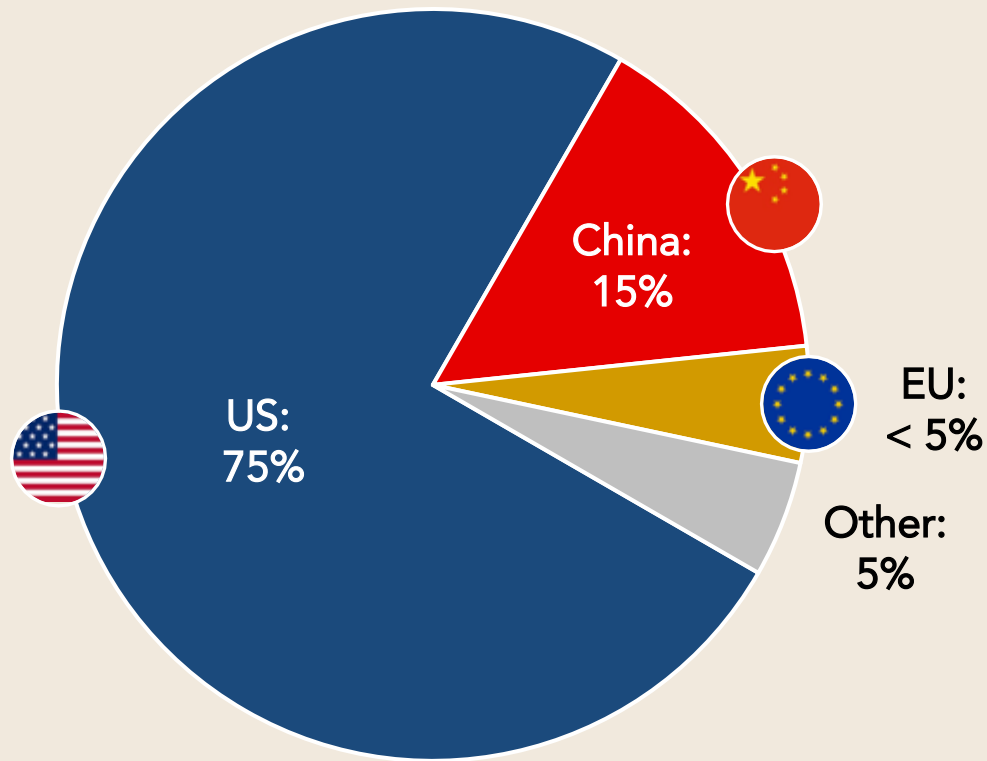
Rank	Language model
21.	 Gemini 3.5 Flash Medium
22.	 Claude Opus 4.8
23.	 Chat GPT 5.5 Instant
24.	 Grok 4.20 Beta Reasoning
25.	 Gemini 3 Flash
26.	 Claude Opus 4.5 (Thinking)
27.	 Claude Sonnet 4.6
28.	 Grok 4.20 Multi-agent Beta
29.	 GLM 5.1
30.	 GLM 5.2 (Max)
31.	 Claude Opus 4.5
32.	 Ernie 5.1
33.	 Grok 4.5
34.	 Mimo v2.5 Pro
35.	 Chat GPT 5.4
36.	 Grok 4.1 (Thinking)
37.	 Qwen 3.5 Max Preview
38.	 Claude Sonnet 5 High
39.	 Kimi k2.6
40.	 Qwen 3.6 Max Preview

Source: (1) Arena.AI. Data as of July 24, 2026. Ranking is based on user-submitted prompts and relative performance of language models. Based on over 250 million real conversations and over 3.5 million head-to-head votes.

Relative AI Computational Power

The United States currently controls about 75% of global frontier AI compute, a core competitive advantage in the global AI arms race. US innovation, led by the integration of advanced software and microchip hardware, has given it control of large GPU clusters and high-end AI supercomputing capacity.

Estimated AI computing power, by country



Source: (1) Epoch AI. Federal Reserve. Data shows 2025-26 estimates.

Top 10 Countries by Data Centers

Global data centers

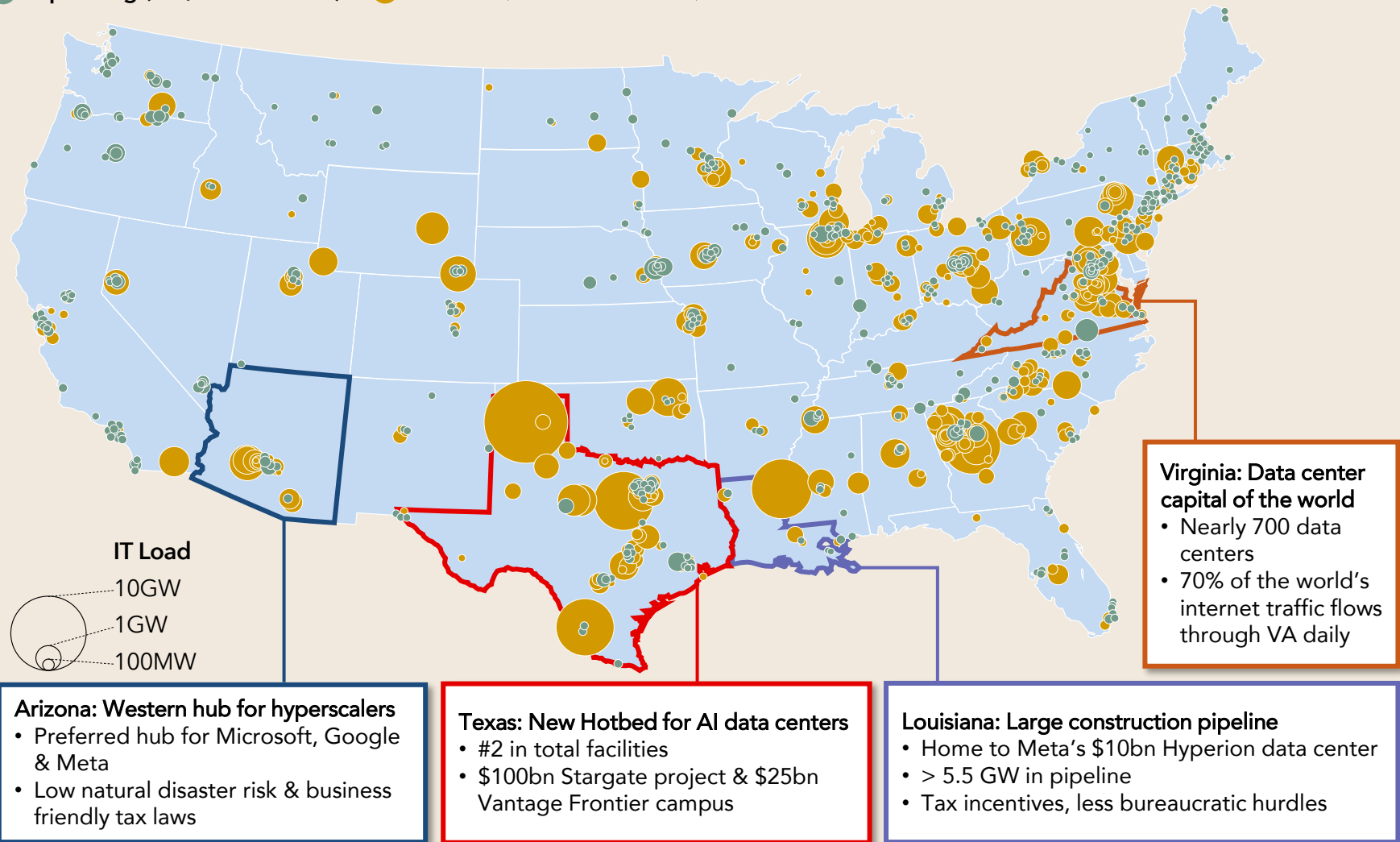


Source: Cloudscene. Data as of July 2026. China includes Hong Kong.

Operating & Planned US Data Center Sites



● Operating (< 5,000 locations) ● Planned (< 3,000 locations)



Source: DC Byte. CMRA. FT, "The Power Crunch Threatening AI's Ambitions."

Meta's Hyperion Data Center

Meta's Hyperion Data Center in Louisiana (superimposed over Manhattan)

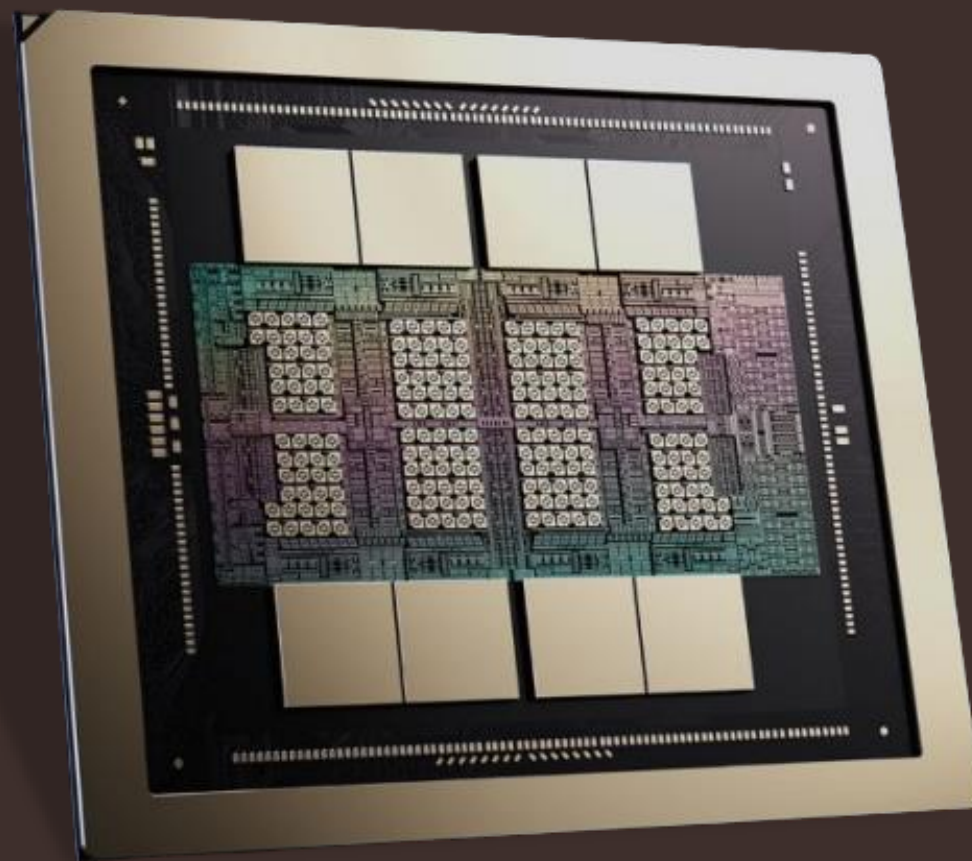
- 3,650 acres
(> 4x Central Park)
- 5 GWh of compute power
(mid-size American city)
- 30% increase to Louisiana
energy demand
- Millions of GPUs
(2030 compute power >
RoW in 2020)



World's Most Complex Piece of Hardware

NVIDIA's Rubin GPU

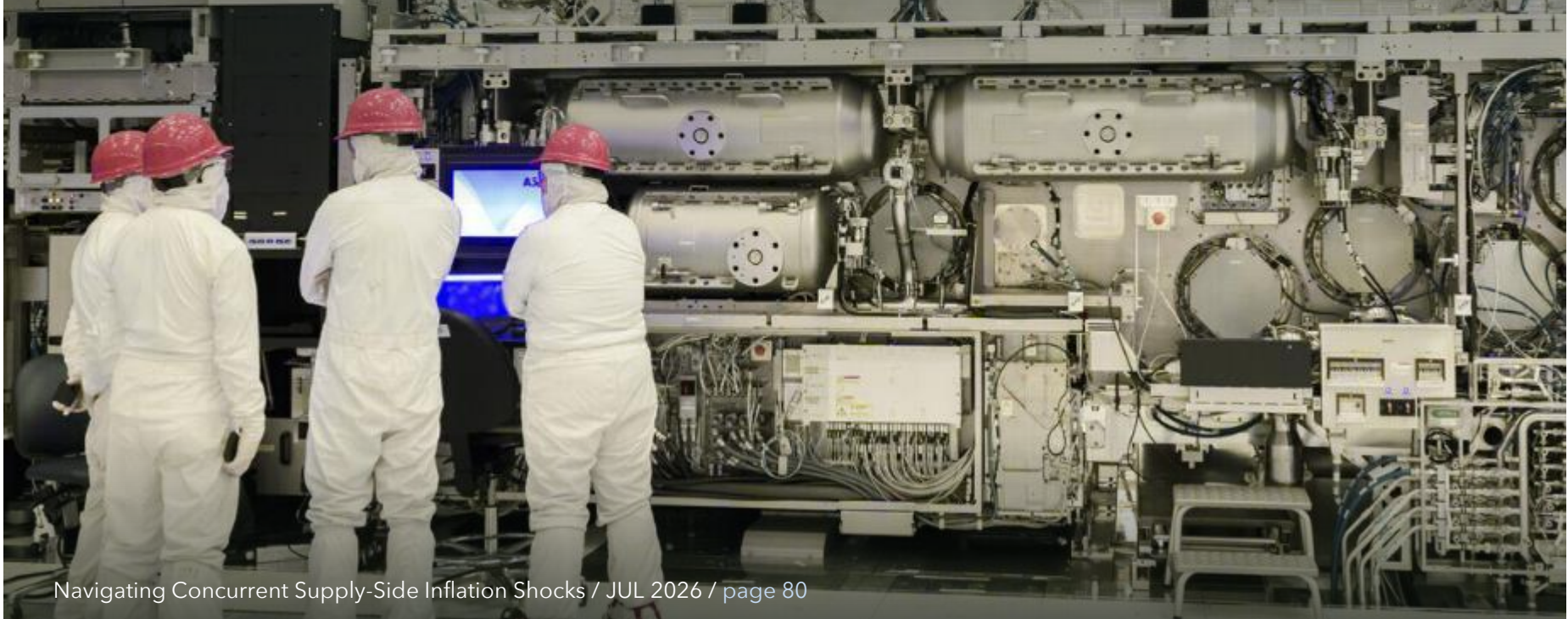
- 336 billion transistors per GPU
- 5x the AI performance of the previous Blackwell generation at 10x lower cost per token
- Nearly triple memory bandwidth compared to Blackwell (22 TB/s)
- NVL72 rack scale system - full rack of 72 Rubin GPUs delivers 3.6 EFLOPS of AI compute (5x more than Blackwell generation)
- 2,300 watts of power consumption
- Key dates:
 - Announced: Jan 2026
 - Shipments: 2H 2026



World's Most Complex Piece of Equipment

ASML's High-NA TWINSCAN EXE:5200B

- Over 700,000 parts per machine
- 165 tons per machine
- No defect precision at 0.7 nm with atomic level stability
- > \$400 million sale price per machine

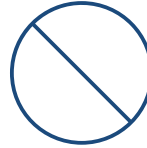


US Government Semiconductor Policy Restrictions



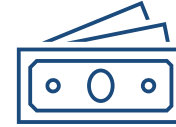
Export Restrictions

Commerce Dept. Entity List



Foreign Direct Product Rule (FDPR)

Follows the “technology lineage” of goods, including all advanced chip production in China



Outbound Investment Restrictions

Restricts US capital inside China



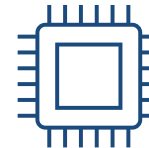
Multilateral Coordination

Netherlands, Japan, S. Korea



Sanctions & Financial Restrictions

OFAC / Treasury

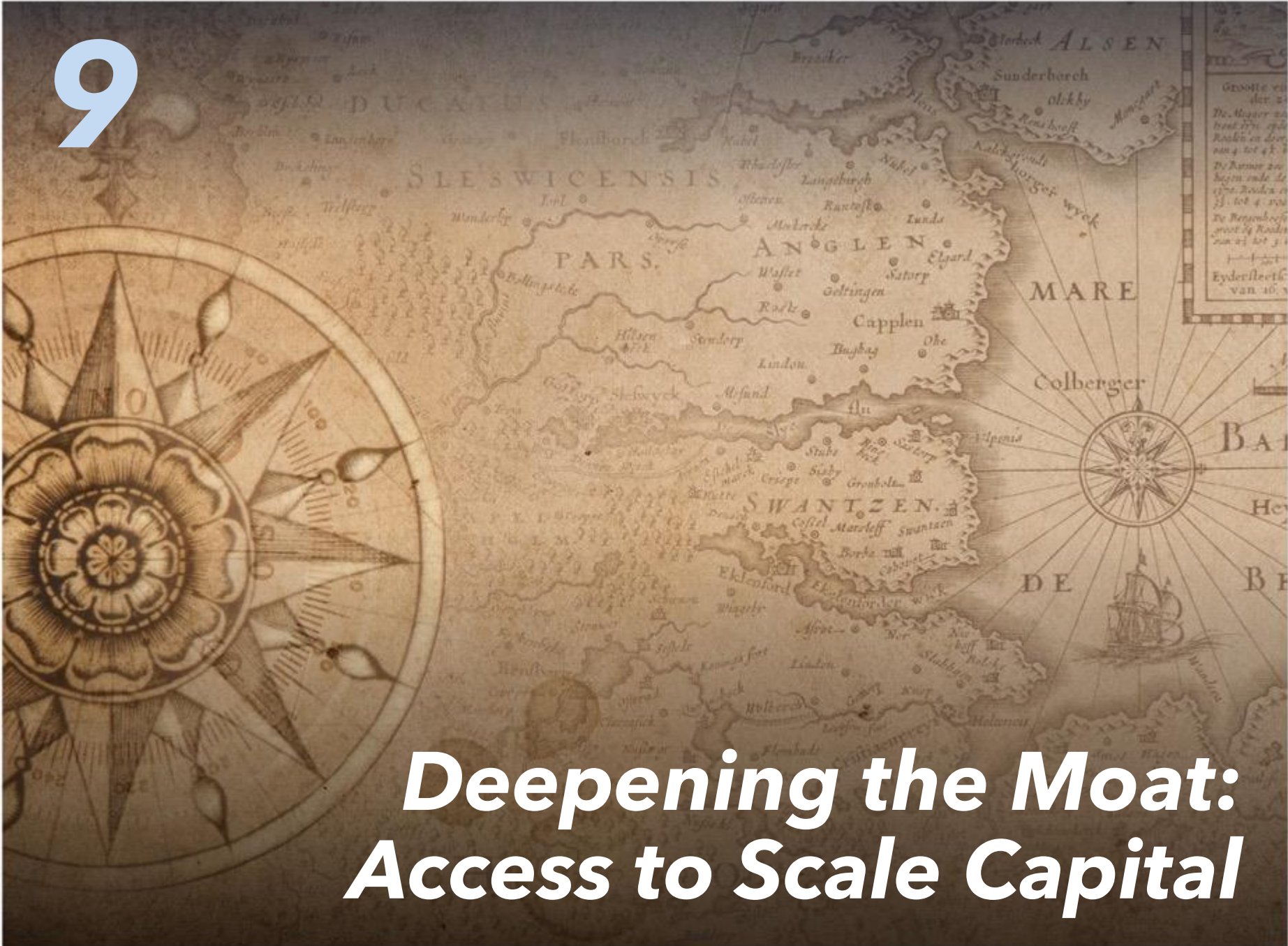


Tariffs & Trade Remedies

25% advanced semiconductors

Source: (1) Center for Strategic and International Studies. Congress.Gov. Various News Sources.

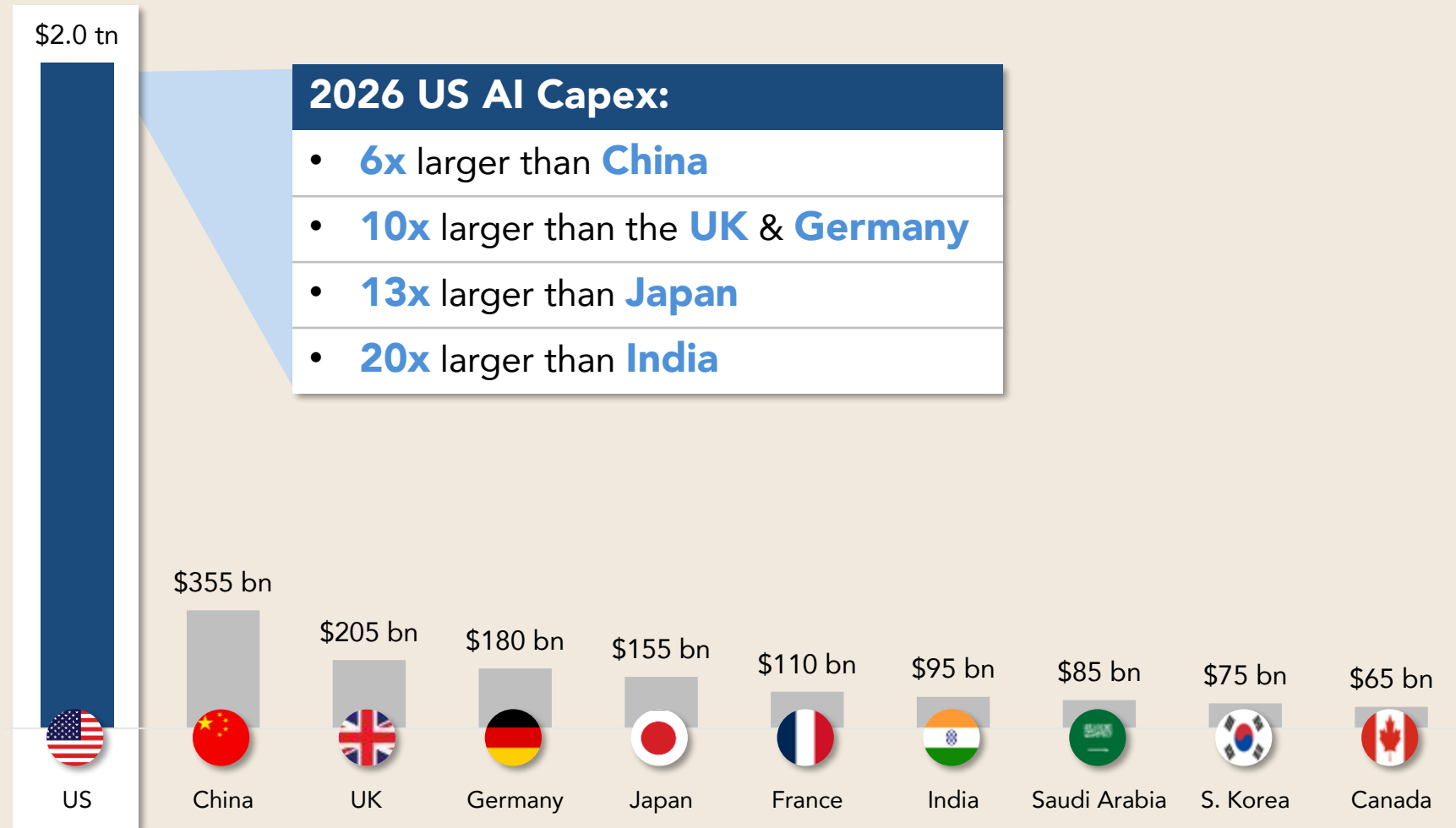
9

A historical map of the Sleswicensis Pars Anglen Swantzen region, featuring two large compass roses. The map is titled 'SLESWICENSIS PARS. ANGLENI SWANTZEN.' and shows various towns and geographical features. The compass roses are ornate, with the left one being larger and more detailed. The map is in a sepia tone with black ink for text and lines.

Deepening the Moat: Access to Scale Capital

US Leadership in Global AI Capex Spend

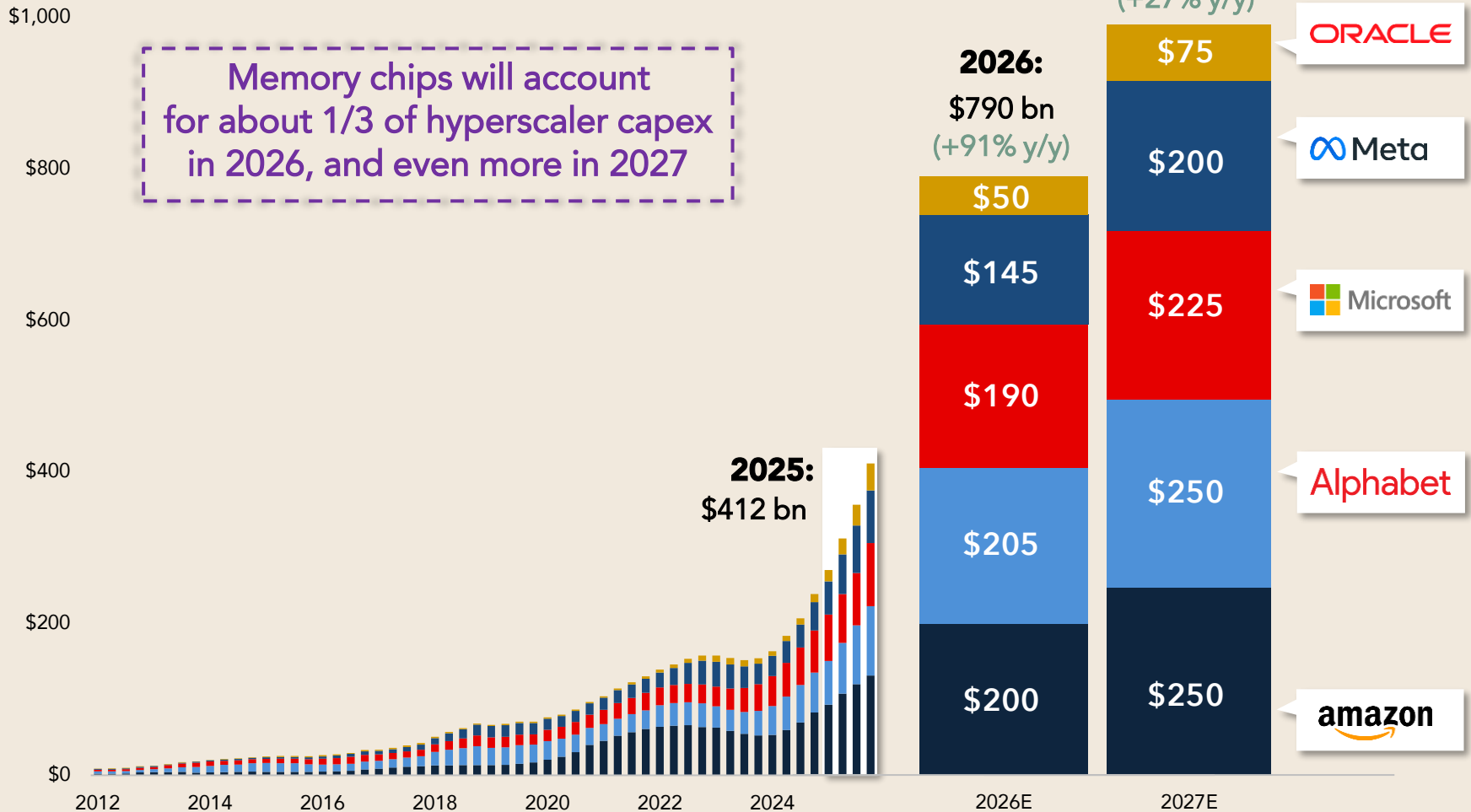
2026 projected AI investment by region (infrastructure, software & services)



Source: (1) IDC. Gartner. Futurum Group. Wall Street tech sector research. US Dollars.

Hyperscalers' Capex > \$1 Trillion in 2027

Top 5 hyperscalers capex, USD bn

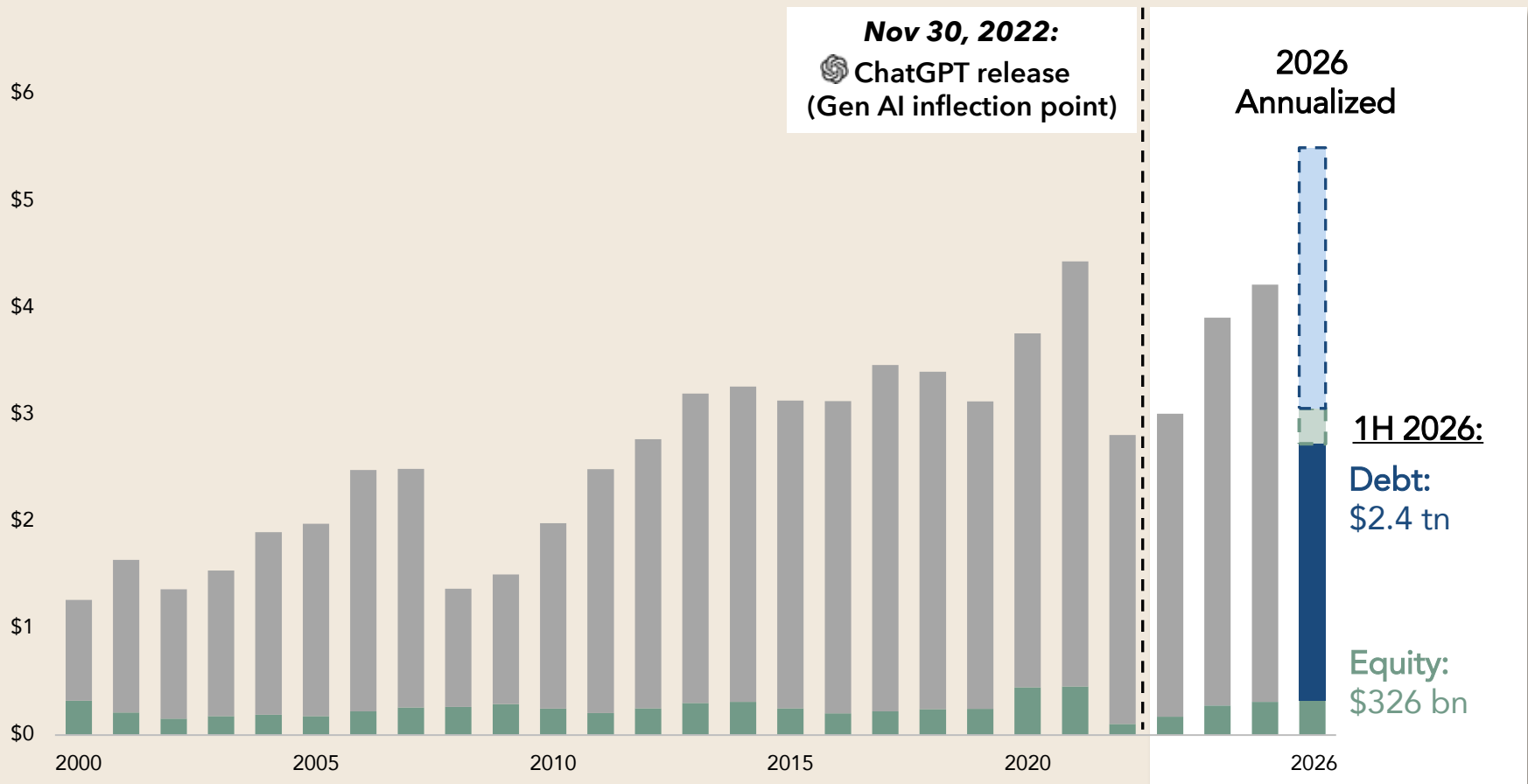


Source: (1) Bloomberg, "The AI Spending Boom Is Huge But Not Unprecedented". Data trailing 12 months. Oracle's quarters end a month earlier than the other companies. 2026E data is based on company announcements, including Q2. Oracle estimate for FY 2026. Alphabet 2026 and 2027 projections based on high-end of analyst estimates.

Inflection Point for Global Capital Markets



Total annual debt & equity issuance, USD tn

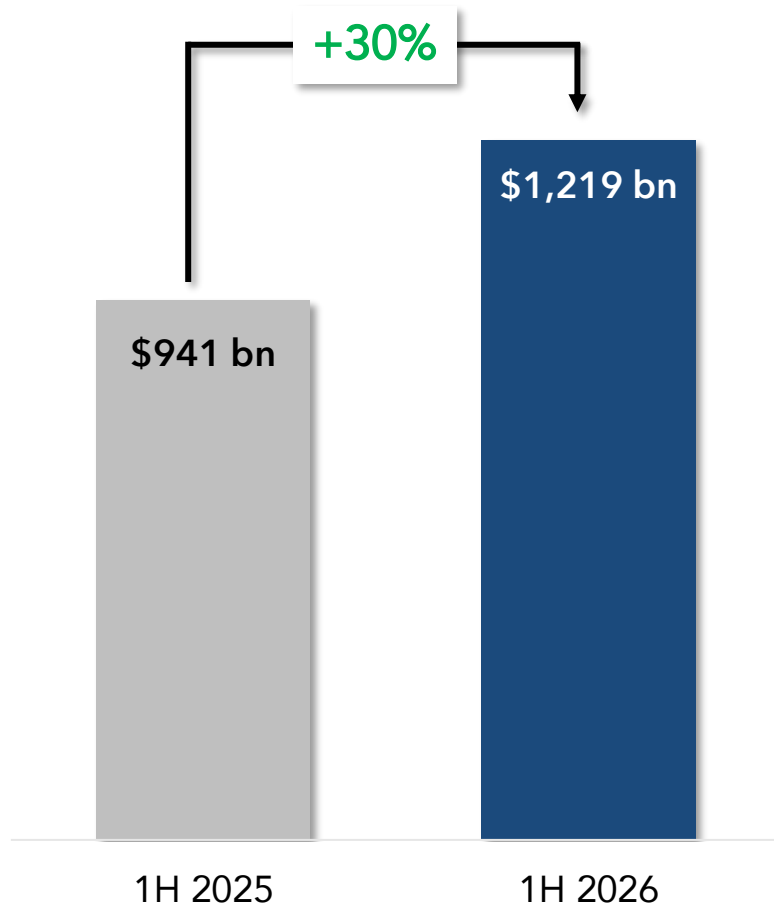


Source: (1) Equity issuance is Dealogic. Data as of June 30, 2026. Includes IPOs, follow-ons, and convertibles. Debt issuance is sum of IG & HY bonds, leveraged loans, and IG loans. IG & HY bond data are CFR. IG loan is LSEG. Data as of June 30, 2026. Leveraged loan is LCD. Data as of June 30, 2026.

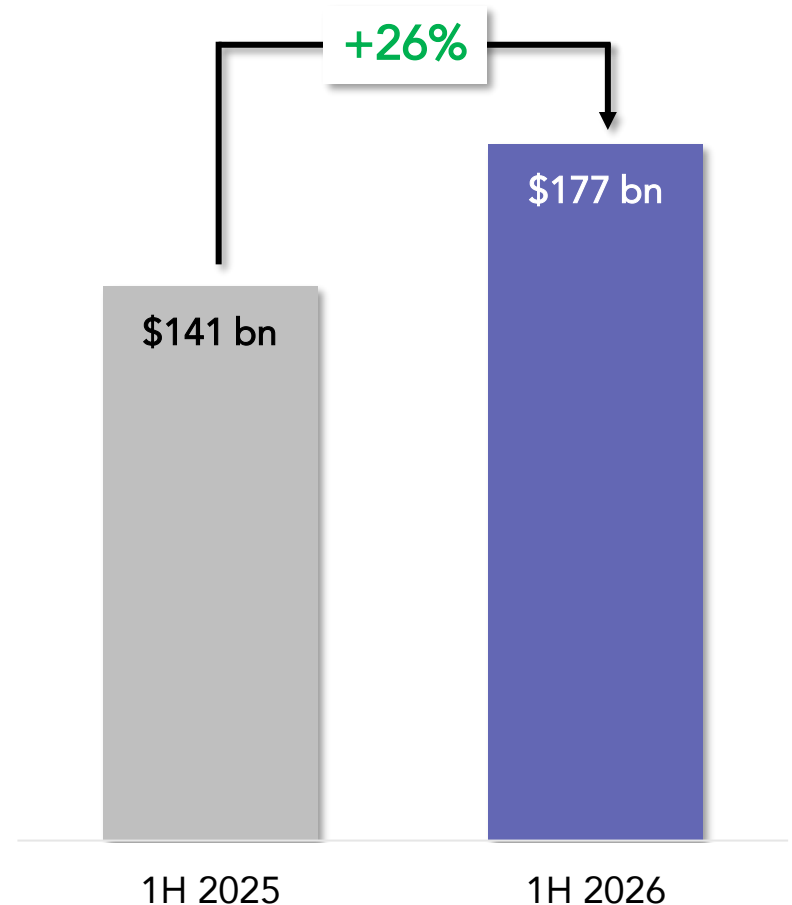
Largest 1H for USD Bond Issuance on Record



1H 2026 IG deal volume, USD bn



1H 2026 HY deal volume, USD bn



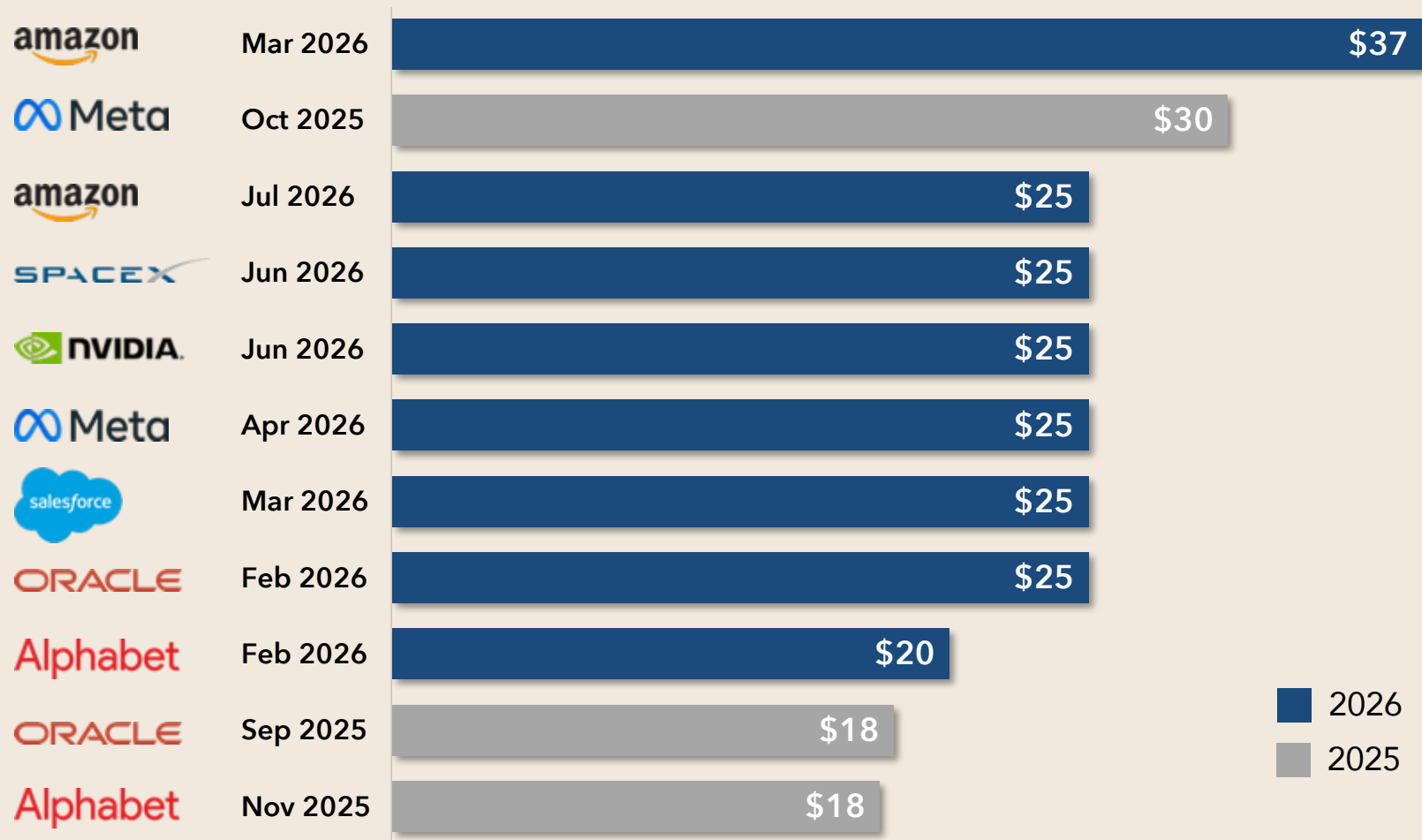
Source: (1-2) IG and HY bond data are CFR. Data as of June 30, 2026.

Observations on AI Debt Financed Scale Capital

- 1 **Megadeal sizes redefined** from \$10bn to \$30-40bn
- 2 **Longer tenor curves**, aligning long duration infrastructure economics
- 3 **Robust technical dynamics**, as evidenced by spreads, new issue premia and over-subscription levels
- 4 Tech as **core index pillar** and structural driver of credit cycles
- 5 **Blended execution strategies** across multiple markets & currencies, public & private
- 6 10 year UST yields becoming **the de facto discount rate** on future AI revenue

Big Tech Issued USD Bonds in Unprecedented Size

Largest USD IG tech deals since Jan 2025, bn



Source: (1) CFR. Data as of July 24, 2026.

Big Tech Leadership in EUR & GBP Issuance



EUR Market

amazon

Mar 2026

Largest on record

€ 14.5 billion

4th largest on record

Alphabet

May 2026

€ 9.0 billion



GBP Market

Alphabet

Feb 2026

Largest on record

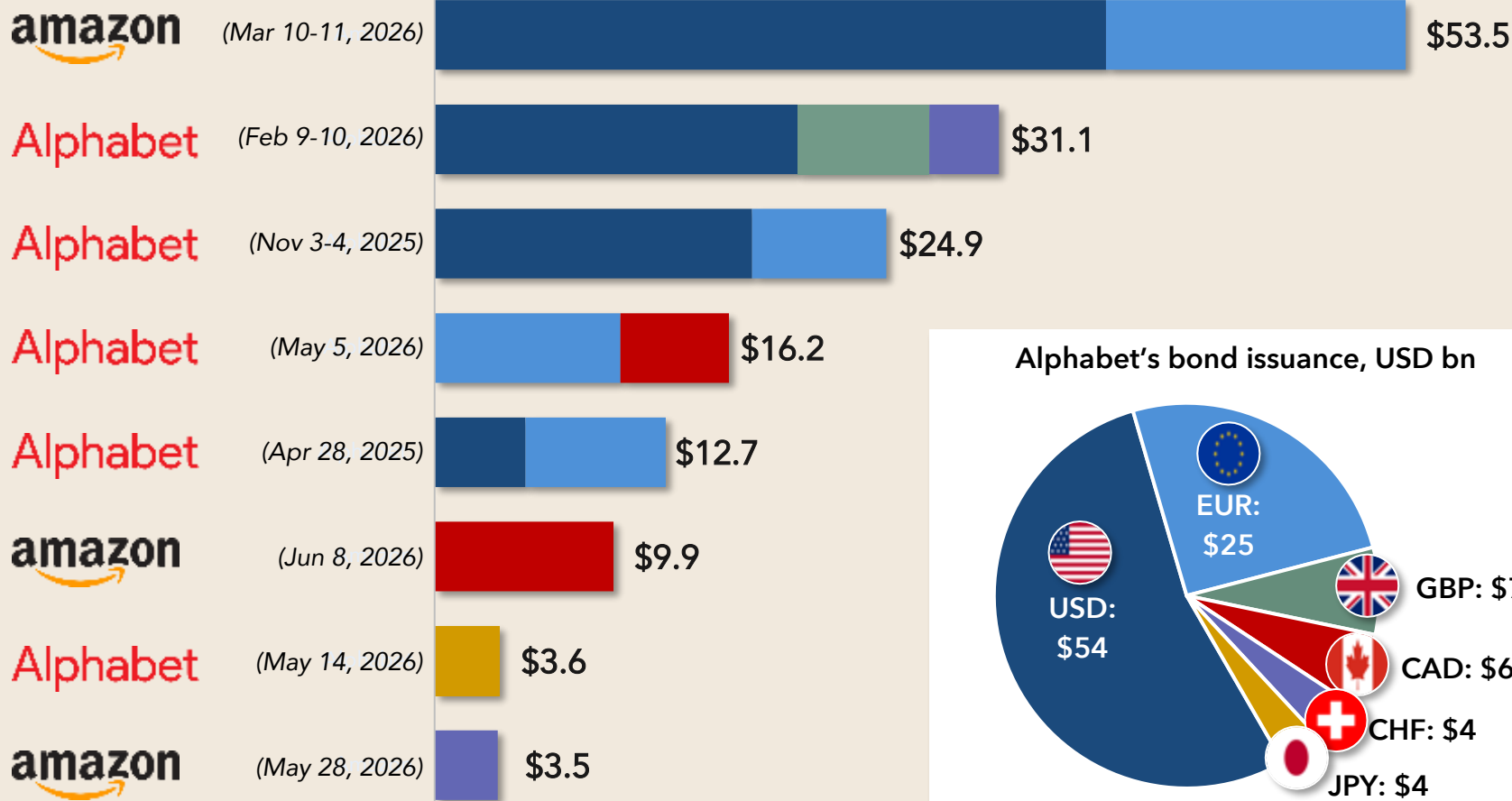
£5.5 billion

Source: (1-2) Bloomberg. Data as of July 24, 2026.

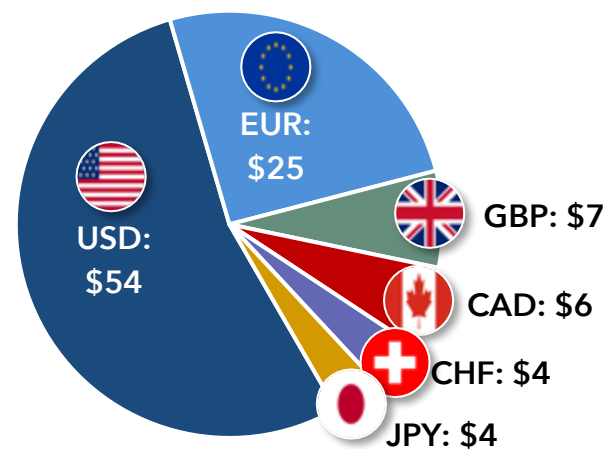
Big Tech Tapped Multiple Currencies to Achieve Scale



Selected multi-currency IG deals since January 2025, USD bn



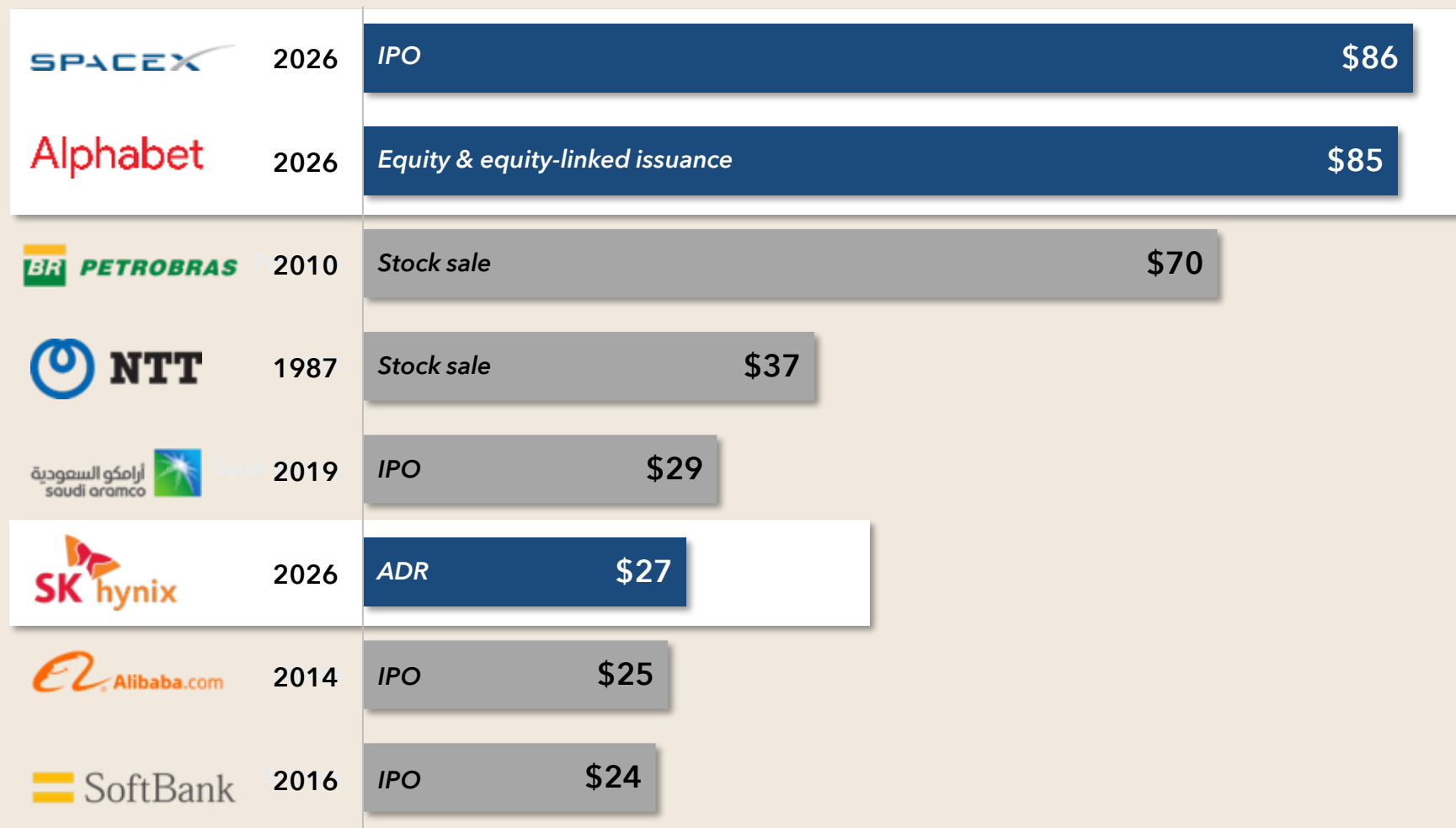
Alphabet's bond issuance, USD bn



Source: (1) CFR. Data as of July 24, 2026. Total size calculated using current USD exchange rates.

Big Tech Redefined Scale of Equity Financing

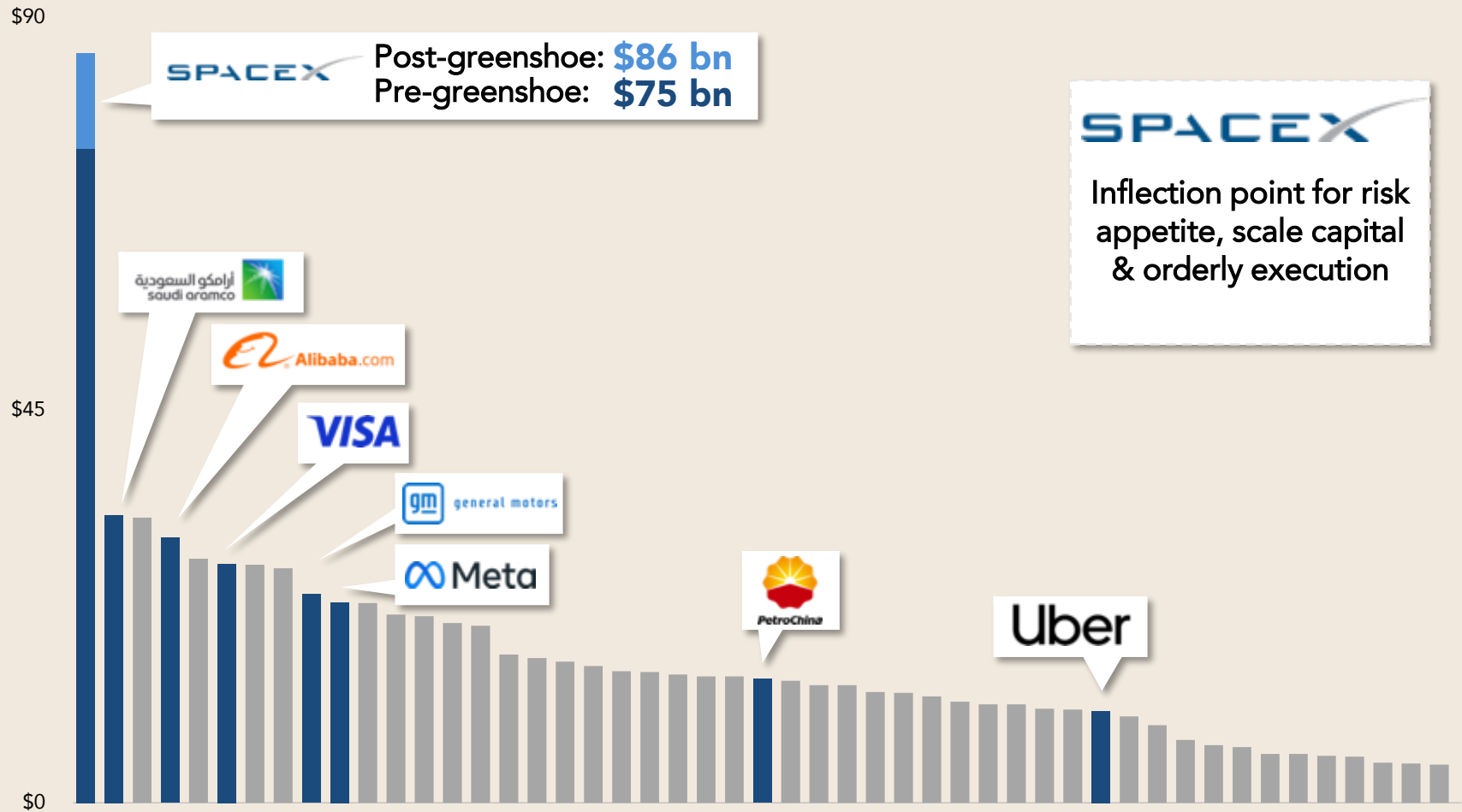
All-time largest equity financings, USD bn



Source: (1) Company filings. All IPO offerings include greenshoe option.

SpaceX Reset the Upper Bound for IPOs

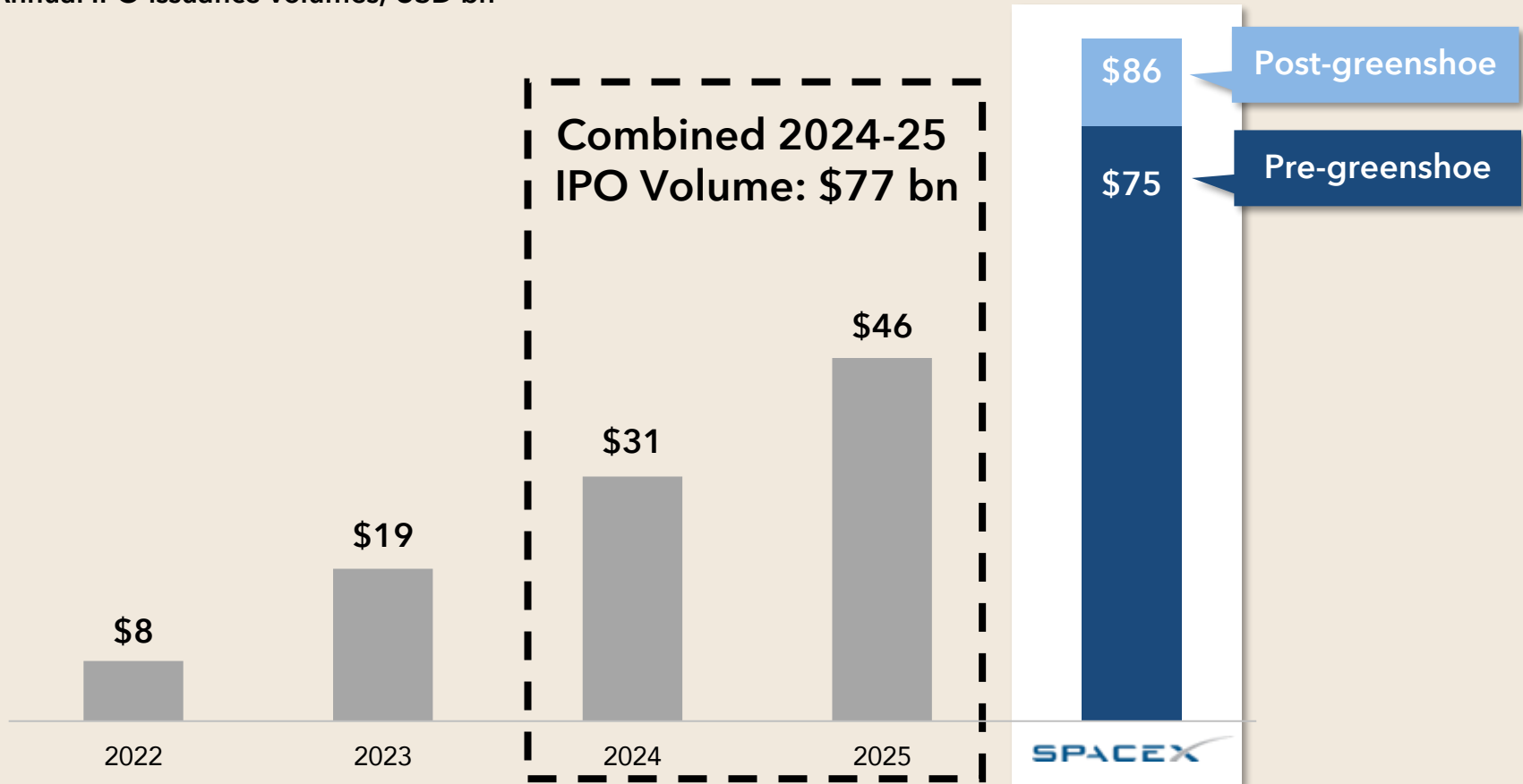
50 largest IPOs in history by offer size, USD bn



Source: (1) Company filings. Offer size is 2026 US dollars. Data as of June 2026.

SpaceX IPO Eclipsed Prior Full Year IPO Volumes

Annual IPO issuance volumes, USD bn

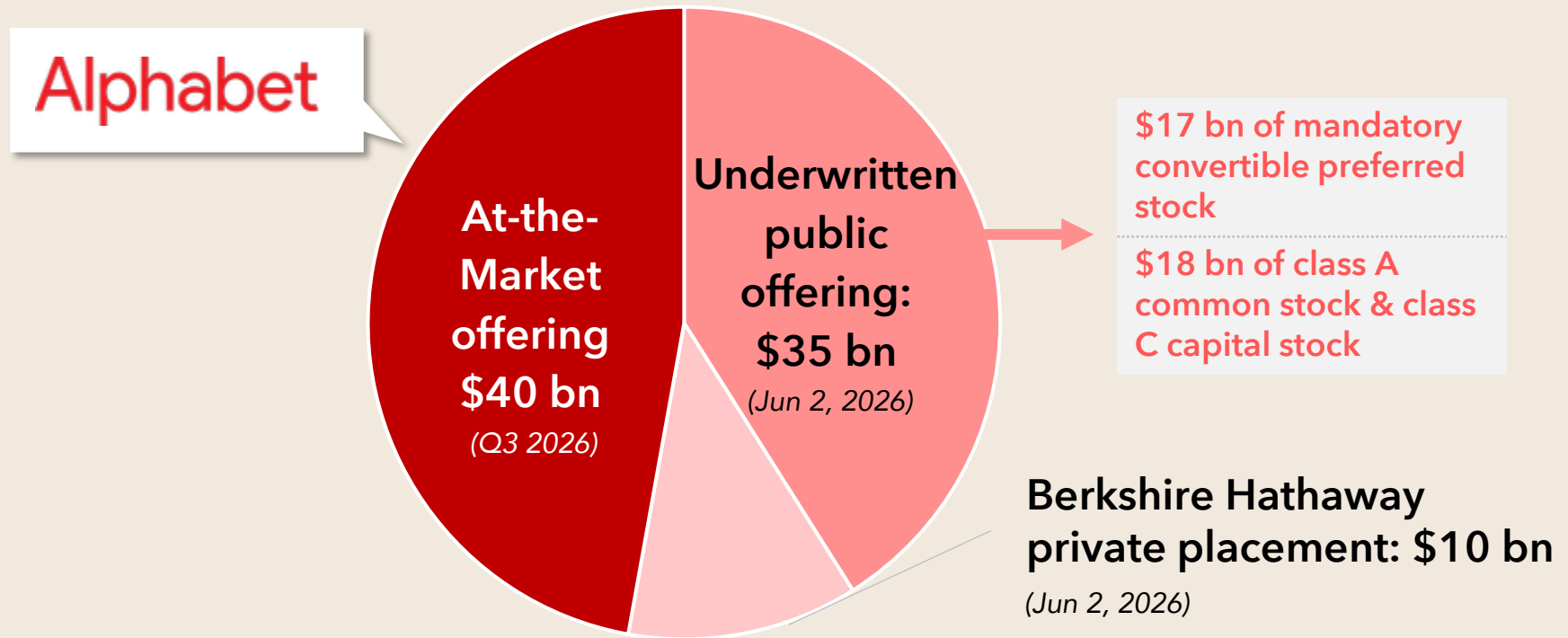


By virtue of its unprecedented size and pioneering execution strategy, SpaceX's IPO demonstrated how AI-linked platforms can dominate capital formation cycles.

Source: (1) Dealogic. Data as of June 2026.

Alphabet's Historic \$85 Bn Equity Capital Raise

Breakdown of Alphabet's equity capital raise



Source: (1) Company announcements. News sources. Alphabet initially announced \$80 bn in equity raise but exercised a greenshoe option. Allocations to investors in the common & capital stock portion were split 50/50.



2026 Global Growth Revised Lower



GDP growth forecasts, y/y (January 2026 vs. July 2026)

Region	Jan 2026	Jul 2026	
North America			
US	2.5%	2.3%	↓
Mexico	1.4%	0.9%	↓
Canada	0.9%	0.7%	↓
Eurozone	0.9%	0.6%	↓
Spain	2.4%	2.8%	↑
Italy	0.6%	0.8%	↑
France	0.8%	0.5%	↓
Germany	0.7%	0.5%	↓
Other Europe			
Poland	3.8%	3.5%	↓
Sweden	2.4%	2.0%	↓
Norway	2.2%	1.3%	↓
Switzerland	0.9%	1.2%	↑
UK	1.0%	0.9%	↓
Russia	(-0.1%)	0.5%	↑
LatAm			
Colombia	3.0%	2.9%	↓
Argentina	2.3%	2.8%	↑
Brazil	1.6%	1.8%	↑
Chile	2.2%	0.9%	↓

Region	Jan 2026	Jul 2026	
MENA			
Iran	2.1%	?	↓
Israel	4.2%	3.3%	↓
Saudi Arabia	4.3%	0.5%	↓
UAE	4.5%	(-0.04%)	↓
Qatar	6.4%	(-24.5%)	↓
Kuwait	3.4%	(-19.3%)	↓
Oman	2.3%	2.1%	↓
Bahrain	3.0%	(-16.0%)	↓
Egypt	4.9%	4.5%	↓
Türkiye	3.0%	2.3%	↓
APAC			
India	6.5%	6.7%	↑
Indonesia	5.1%	5.0%	↓
China	4.5%	4.8%	↑
Philippines	5.4%	3.5%	↓
Singapore	3.1%	3.4%	↑
South Korea	2.1%	2.5%	↑
Australia	2.5%	2.0%	↓
Thailand	1.5%	2.0%	↑
Japan	0.7%	0.5%	↓

Source: (1) Oxford Economics. Data as of July 24, 2026. Bahrain, Iran, Israel Jan 2026 forecast is Bloomberg consensus.

Global Currency Forecasts

Currency pair	Spot (Jul 24)	Q3 2026	Q4 2026	Q1 2027	Q2 2027
EUR / USD	1.14	1.16	1.18	1.20	1.20
GBP / USD	1.33	1.33	1.34	1.36	1.35
USD / JPY	164	160	158	156	154
USD / CNY	6.77	6.70	6.65	6.60	6.60
AUD / USD	0.70	0.70	0.71	0.72	0.73
NZD / USD	0.58	0.57	0.58	0.59	0.60
USD / CAD	1.41	1.40	1.38	1.36	1.35
USD / NOK	9.57	9.74	9.49	9.33	9.25
USD / SEK	9.70	9.48	9.24	9.00	8.92
USD / CHF	0.82	0.79	0.78	0.76	0.76
USD / MXN	17.46	17.50	17.50	17.25	17.25
USD / BRL	5.06	5.20	5.10	5.00	4.90
USD / CLP	943	900	890	880	870

Source: (1) Bloomberg. MUFG Foreign Exchange Outlook - July 2026 (Derek Halpenny). Data as of July 24, 2026.

MUFG Global Rates Forecasts

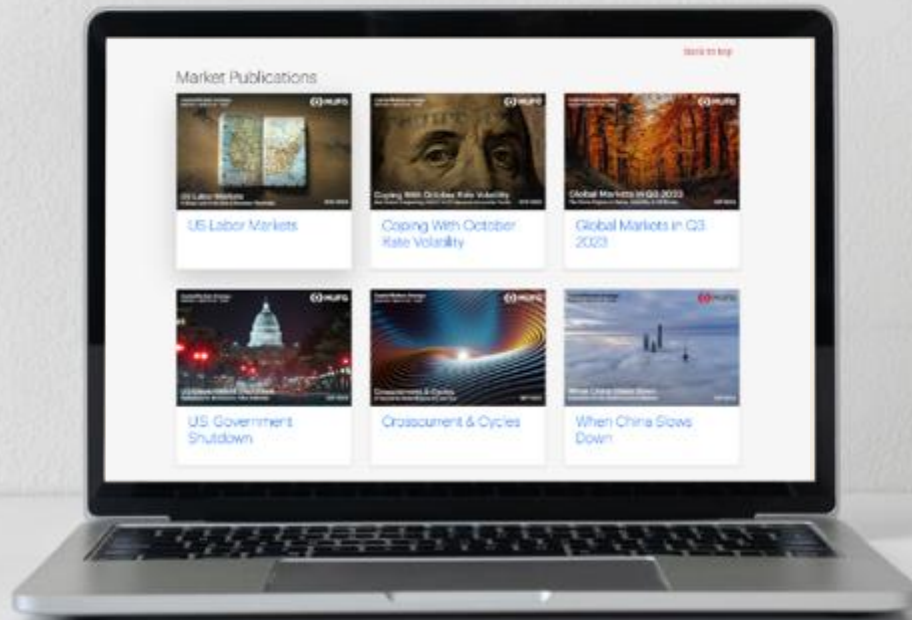
		Q3 2026		Q4 2026		Q1 2027		Q2 2027	
	Spot (Jul 24)	MUFG	Consensus	MUFG	Consensus	MUFG	Consensus	MUFG	Consensus
Fed Funds	3.75%	3.75%	3.76%	3.50%	3.76%	3.25%	3.72%	3.25%	3.62%
2 yr UST	4.31%	4.00%	3.99%	3.63%	3.89%	3.25%	3.81%	3.13%	3.76%
5 yr UST	4.40%	4.13%	4.10%	3.88%	4.03%	3.63%	3.98%	3.50%	3.93%
10 yr UST	4.65%	4.25%	4.44%	4.13%	4.40%	4.00%	4.36%	3.88%	4.35%
30 yr UST	5.14%	4.50%	4.94%	4.50%	4.89%	4.38%	4.87%	4.25%	4.88%

Source: (1) MUFG Global Macro Research (George Goncalves). Bloomberg. Data as of July 24, 2026. Fed funds is upper bound.



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Role

Tom Joyce is a Managing Director and Capital Markets Strategist within MUFG's global capital markets and investment banking business. Based in New York, Tom heads a team that creates customized analytical content for multi-national S&P 500 companies. His team provides in depth analysis on the impact of economic, political, public policy and regulatory dynamics on the US credit, foreign exchange, rates and commodities markets.

Experience

Tom has over 30 years of Investment Banking experience in New York, London, Hong Kong, and San Francisco. Tom created and built the Capital Markets Strategy role, advising corporate C-Suite executives (Boards, CEOs, CFOs, and Treasurers) on the pervasive macro forces driving markets. Tom also presents at dozens of corporate events each year including Board meetings, CEO ExCo sessions, CFO and Treasury off-sites, corporate leadership events and conferences.

Education

Tom's educational background includes a year of study at Oxford University from 1991 - 1992, a Bachelor of Arts in Political Science from Holy Cross College in 1993, and a MBA from Kellogg Business School, Northwestern University in 2000.

Personal

Tom resides in New Canaan, CT with his wife and four sons, where he previously served on the Board of Trustees of the New Canaan Library. Tom also serves on the President's Council of Holy Cross College.

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Role

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Experience

Stephanie has spent nearly 10 years as a Capital Markets Strategist. She is an active member of the University of Michigan recruiting team and is focused on the diversity recruiting effort at MUFG. Stephanie is also a part of MUFG's DEI, Culture & Philanthropy (DCP) Council.

Education

Stephanie graduated with honors from the University of Michigan's Ross School of Business with a BBA .

Personal

Stephanie is involved in NYC's iMentor program, mentoring high school students with their journey to college graduation. She also volunteers at Experience Camps, a free summer camp program for grieving children, as the associate program director.



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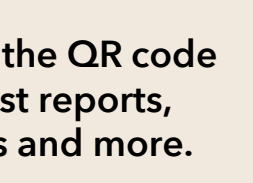
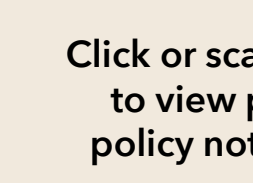
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Education

Angela graduated with honors from Carnegie Mellon University's Tepper School of Business with a BS in Business Administration with an additional major in Statistics and a minor in Media Design. She was a member of Alpha Kappa Psi business fraternity and the Undergraduate Entrepreneurship Association.



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