Chokepoints

The New Meeting Points Between Geopolitics And Macro

For most of recorded history, power has accrued to those who control geographical bottlenecks, or "chokepoints."

During the Peloponnesian War 2,431 years ago (405 BCE), the Spartans seized control of the Dardanelles, a narrow strait connecting the Black Sea to the Mediterranean, thereby cutting off Athens' grain supplies, starving the city into surrender a year later.[1]

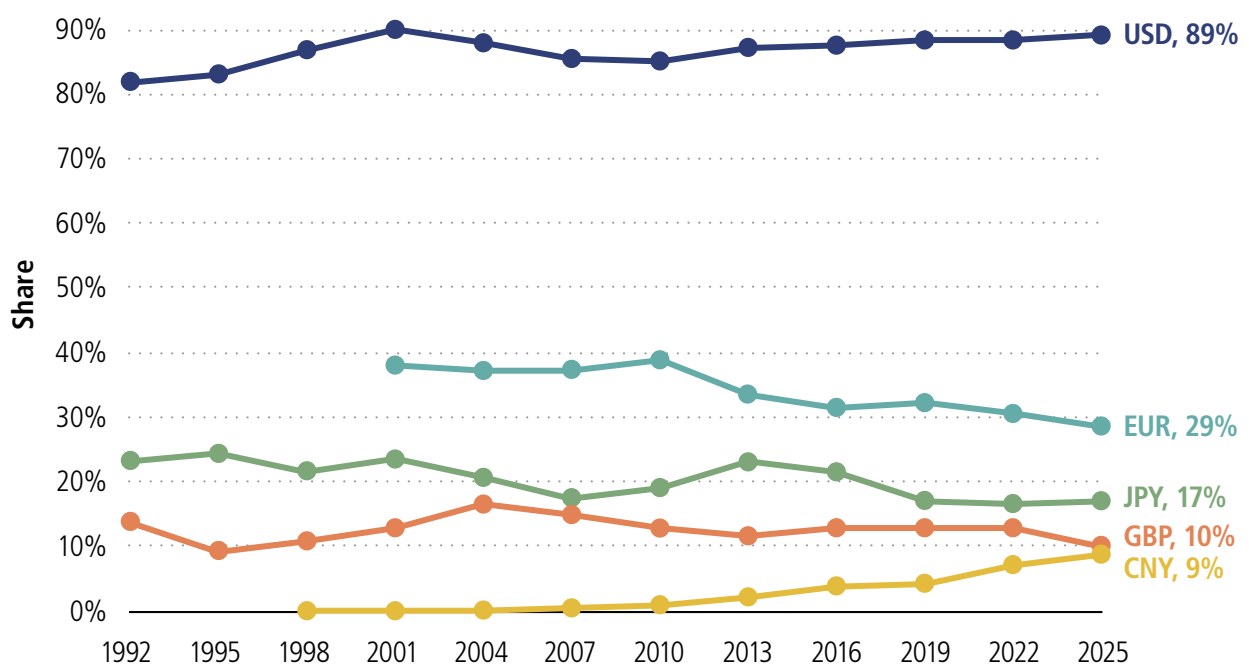
Fast forward to 2026, Iran's closure of the Strait of Hormuz, a narrow sea passage through which 20% of global petroleum flows, has proven to be a key geopolitical lever in the 2026 Iran conflict.

However, as Edward Fishman writes in *Chokepoints*, new global bottlenecks have emerged, like currency networks, correspondent banks, marine insurance, and semiconductor supply chains.

Like their predecessors, these new chokepoints funnel enormous flows through narrow passages, are expensive to replicate, and confer outsized power on those who control them. *Unlike* the prior geographical chokepoints, these new chokepoints are far less apparent. But just as the closure of a strait physically cuts off shipping traffic, a compliance notice from the U.S. Treasury likewise virtually cuts off a country's access to much of the global financial system.

Investors should incorporate these new chokepoints into their assessment of potential events that could produce lasting economic consequences. Understanding which infrastructure is concentrated, who controls it, and when it might be cut off is not just a geopolitical exercise; it is now a macroeconomic one.

fig 1. THE DOLLAR MEDIUM:
FOREIGN EXCHANGE TURNOVER BY CURRENCY SHARE*



Source: Bank for International Settlements (BIS)
*A currency is counted if it is used in at least one leg of the foreign exchange trade. As a result, the sum of the shares will exceed 100%.

THE DOLLAR WEAPONIZED

Almost every foreign exchange transaction today requires the U.S. dollar, even if no American parties are involved. For example, when Indian importers buy Australian coal, they usually convert their rupees to U.S. dollars, then U.S. dollars to Aussie dollars to pay for the coal.

«THE U.S. DOLLAR HAS BEEN INVOLVED IN ALMOST 90% OF ALL FOREIGN EXCHANGE (FX) TRANSACTIONS, DESPITE THE UNITED STATES ACCOUNTING FOR LESS THAN 10% OF GLOBAL EXPORTS.»

Once a currency assumes that role, the network effects are compounding.

In turn, in the last two decades, the U.S. dollar has been involved in almost 90% of *all* foreign exchange (FX) transactions, despite the United States accounting for less than 10% of global exports (*see Figure 1*). What's more, daily FX volume is a staggering 100x the daily value of world trade.[2]

Meanwhile, China's renminbi internationalization has been, by any honest accounting, not very effective: only 4% of global payments are settled in the renminbi, and only 30% of China's trade is settled in its *own* currency![3]

For decades, the U.S. dollar infrastructure sat dormant as a geopolitical weapon. The U.S. worried that weaponizing the dollar would "undermine the role of the dollar as the reserve currency," as Clinton's Treasury Secretary Rubin said.[4] But that restraint evaporated after September 11, 2001, with the U.S. initiating large-scale sanctions for the first time.[5]

The dollar's ultimate test of weaponization came in February 2022 when Russia invaded Ukraine.

Ahead of the invasion, the Russian central bank built up reserves in various currencies explicitly to "sanction-proof" its economy. But *ownership* turned out to be different from *control*. After Russia's invasion of Ukraine in 2022, the U.S. and its allies "immobilized" over $300 billion in Russian reserve assets denominated in euros, pounds, yen, and, of course, U.S. dollars. It was soon apparent that even assets held in "safe" jurisdictions, denominated in "safe" currencies, and custodied by reputable institutions, were contingent on geopolitical alignment.[6]

As the world wakes up to the dollar as a new chokepoint, central banks have ramped up gold purchases at a pace not seen in modern history, led by China, Poland, India, and Turkey (*see Figure 2 on page 6*).

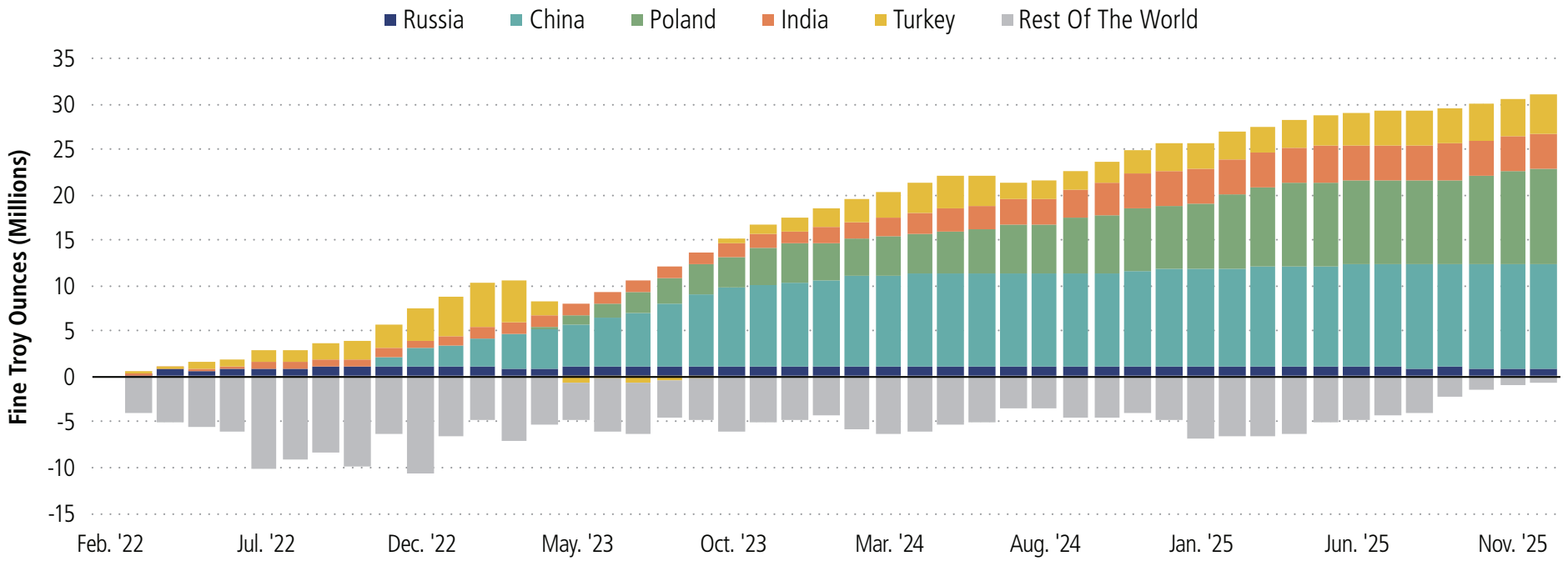
«THE RUSSIAN RESERVE FREEZE SIMPLY REVEALED THE DOLLAR SYSTEM'S CONDITIONAL TERMS.»

Rather than signaling the end of the dollar system, the gold bid reflects an increased demand for anti-chokepoint assets that require no access to Western currency infrastructure. The Russian reserve freeze simply revealed the dollar system's conditional terms. Investors and policymakers realized that access to the system was more valuable—and conditional—than previously thought, pushing the price of gold up 135% from February 2022 to April 2026.[7]

CUT OFF BY YOUR BANK

If the dollar is the *language* of international finance, correspondent banking is finance's *postal system*.

fig 2. PAYING TO OPT OUT:
WORLD CENTRAL BANK GOLD RESERVES CUMULATIVE CHANGE SINCE FEBRUARY 2022



Source: International Monetary Fund

The dominance of the U.S. dollar in FX transactions requires every international bank to hold dollar accounts with U.S.-regulated banks, meaning most cross-border payments will likely pass through at least one intermediary in New York, processed and routed mostly by the private Clearing House Interbank Payments System (CHIPS).[8] In other words, even transactions in U.S. dollars with no American party will typically pass through a New York correspondent account—a plumbing quirk that few bankers thought about until the U.S. Treasury turned it into a chokepoint.

The innovation, pioneered by Stuart Levey at the Treasury's Office of Terrorism and Financial Intelligence after 9/11, was to utilize private compliance incentives rather than rely solely on government enforcement. The U.S. Treasury's Office of Foreign Assets Control (OFAC) blacklisted entities by listing them on the "Specially Designated Nationals and Blocked Persons List," colloquially known as the "SDN list" (*see Figure 3*). At 2,095 pages long (and counting), entities unfortunate enough to make the list face asset freezes, blocked transactions, and "excommunication from the dollar system."[9]

The approach was self-enforcing. In 2005, when the Treasury designated Banco Delta Asia, a small Macau bank that served as North Korea's financial conduit, as a primary money-laundering concern, banks across Asia preemptively cut ties with Pyongyang.[10] No one told them to: The mere risk of associating with a designated institution was enough for the banking "chokepoint" to hold sway.

Iran is another example. Early direct U.S. sanctions on trade accomplished little because the United States didn't buy Iranian oil. The breakthrough was targeting the financial network rather than the commodity. By threatening to sever any foreign bank that processed Iranian transactions from the dollar clearing system in 2022, the Treasury effectively forced every major international bank to make a choice: do business with Iran, or do business with the United States. Those who try to do business with both without disclosing it to the U.S. government face massive penalties. For instance, BNP Paribas paid a $9 billion fine, and HSBC paid $2 billion. Neither bank was American—but both depended on access to the dollar for their survival.[11]

NOT SMOOTH SAILING

Global trade moves by ship—and ships need open seas and clear channels. But that's not all that is needed.

«GLOBAL TRADE MOVES BY SHIP—AND SHIPS NEED OPEN SEAS AND CLEAR CHANNELS.»

Even in a world of peaceful maritime activity, ships need insurance, as ports and canals will refuse to admit uninsured vessels.

The marine insurance market—hull, cargo, and protection & indemnity (P&I)—is overwhelmingly concentrated in London and a handful of Western markets. London-based International Group of P&I Clubs covered over 95% of all oil cargoes at the onset of the Russo-Ukrainian war.[12]

This concentration enabled the most innovative sanctions instrument of the post-2022 era: the oil price cap. Under rules imposed in late 2022, Western firms could no longer ship, insure, or finance Russian oil sold above $60 per barrel. The mechanism was elegant—rather than removing Russian barrels from the market (which would spike prices), it used the insurance chokepoint to cap the revenue Russia could earn per barrel. As Daniel Yergin observed, the price cap and EU embargo marked "the end of the global oil market,"

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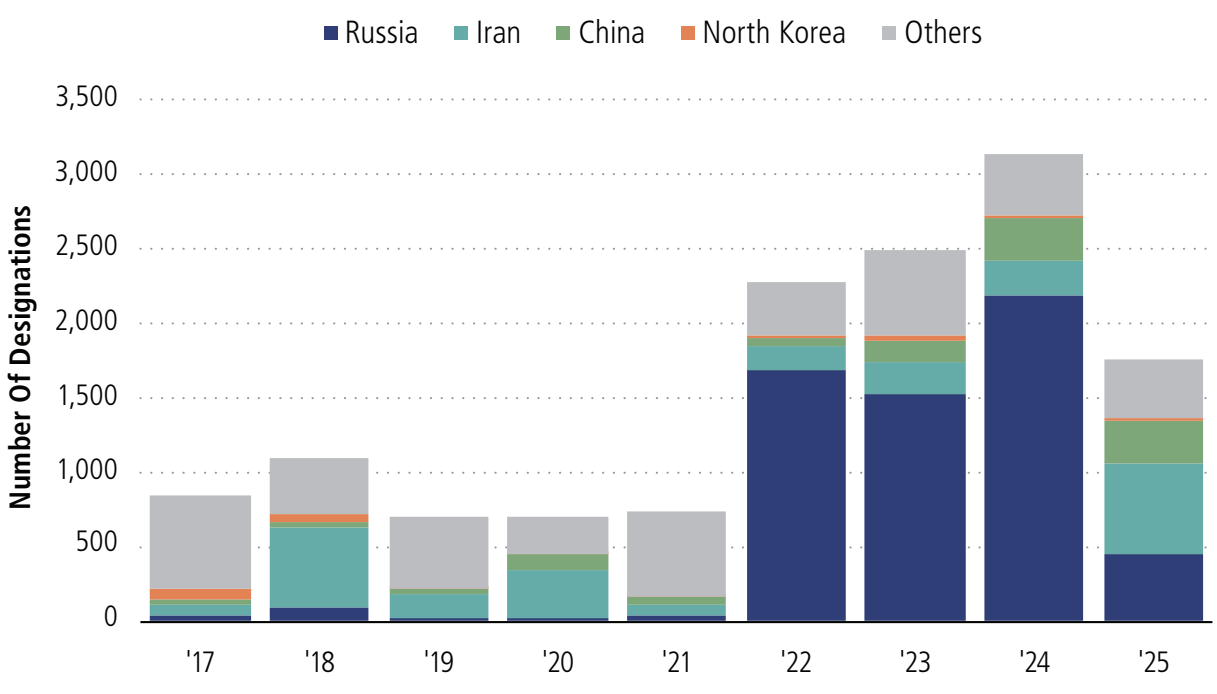
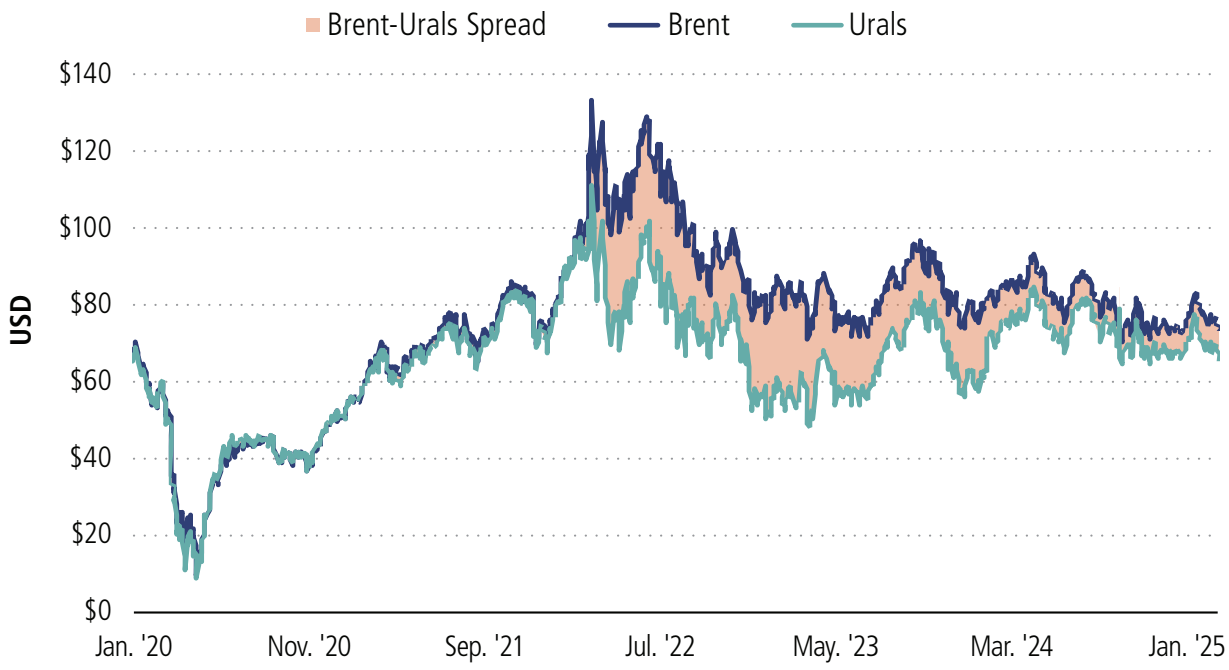
fig 3. SANCTIONS MAP:
TOTAL SDN* DESIGNATIONS BY COUNTRY



Sources: U.S. Department of the Treasury, U.S. Department of Commerce, Center for a New American Security
*Specially Designated Nationals and Blocked Persons List

Continued from page 6

fig 4. OIL ON SALE:
EUROPE BRENT VERSUS RUSSIAN URALS CRUDE OIL SPOT PRICES



Sources: U.S. Energy Information Administration, Investing.com

and replaced it with a partitioned system shaped by geopolitics as much as economics.[13]

Russia responded by assembling a shadow fleet of aging tankers with opaque non-Western insurance. The fleet works, but at a cost: Russian crude sells at a persistent discount to Brent (*see Figure 4*). As a result, in the first half of 2023, Russia's oil revenues fell nearly 50% year-over-year. An Indonesian minister helpfully posted on Instagram that Russia had offered his country oil "at a price that's 30% lower than the international market price." Discretion, apparently, was not part of the deal.

CHIPS > CRUDE

The semiconductor supply chain is much more concentrated than it initially appears (*see Figure 5*). A single company—the Dutch firm Advanced Semiconductor Materials Lithography, better known as ASML—produces the most critical manufacturing equipment: extreme ultraviolet lithography systems. Also, another company, Nvidia, *designs* over 70% of the world's leading-edge AI chips (*see Figure 5 again*). Meanwhile, a third company, Taiwan Semiconductor Manufacturing Company (TSMC), accounts for 90% of the market for the most advanced chip *manufacturing*.[14]

Semiconductors are perhaps the current chokepoint in the most active "arms race."

«ACCESS TO U.S. TECHNOLOGY COULD BE AS VITAL AS ACCESS TO THE DOLLAR, AND REMOVING IT COULD BE JUST AS LETHAL.»

The initial weaponization of semiconductors began almost by accident. In 2018, the U.S. Commerce Department cut off ZTE, a Chinese telecom firm, from access to U.S. components due to sanctions violations. The company nearly collapsed within weeks, prompting the Chinese state newspaper to publish a series of 35 articles titled "What Are Our Chokepoints?"[15] The lesson was clear to both sides: Access to U.S. technology could be as vital as access to the dollar, and removing it could be just as lethal.

The campaign escalated rapidly: the U.S. forced every chipmaker in the world—including Taiwan's TSMC—to choose between selling to Huawei, the Chinese tech giant, or buying U.S. technology. In October 2022, the Biden administration imposed sweeping semiconductor export controls on China.

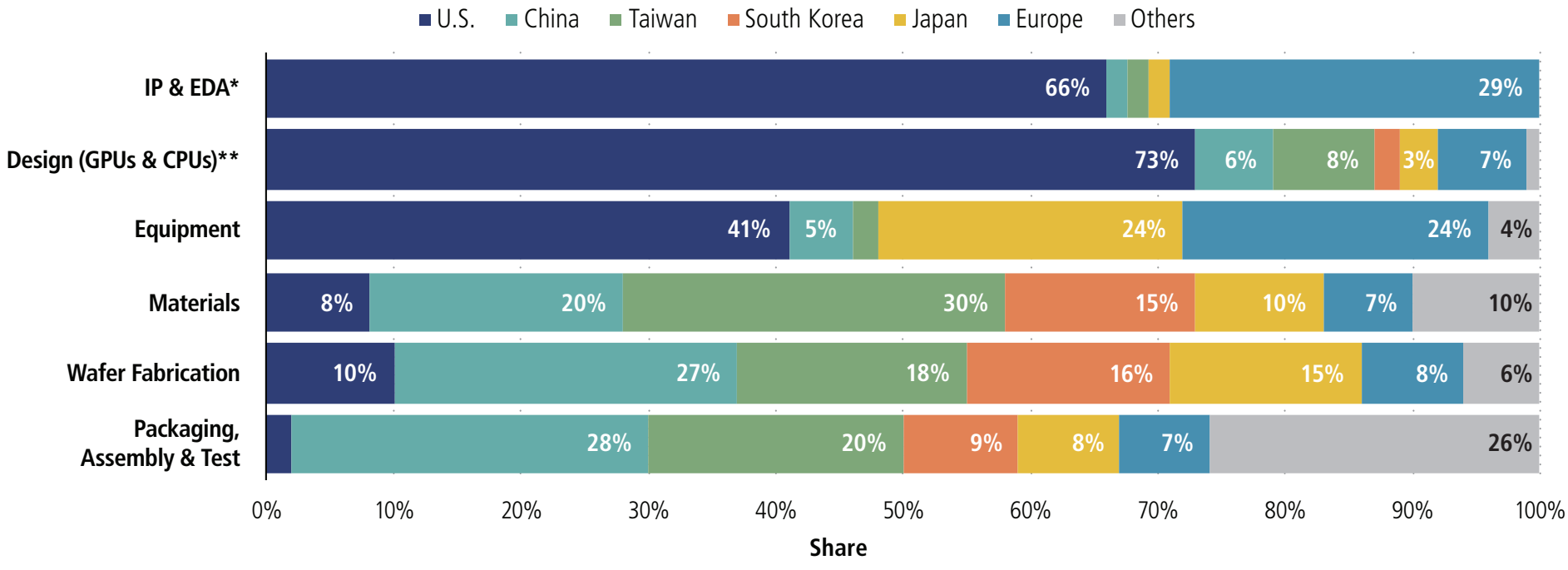
But such export control was not perfect. Less than a year later, in August 2023, China's Huawei Mate 60 Pro was released with an advanced chip that was designed and manufactured by Chinese companies, albeit one that relied on older, less efficient manufacturing equipment.[16]

That said, replicating the entire Western semiconductor ecosystem—from chip design software to lithography—requires not just money but decades of cumulative technical knowledge. While Beijing is spending billions right now to catch up, the gap remains wide: The computational power of the latest Huawei chips is only a third of Nvidia's. Moreover, 90% of Chinese AI models are still trained on Western hardware (*see Figure 6 on page 10*).[17]

THE HOLIDAY IS OVER

Geographic chokepoints justifiably garner the most media attention, but as Fishman details in *Chokepoints*, the less visible ones may become increasingly important and much more market-moving.

fig 5. SUPPLY CHAIN DOMINANCE:
SEMICONDUCTOR INDUSTRY VALUE ADDED BY SUPPLY CHAIN AND REGION IN 2024

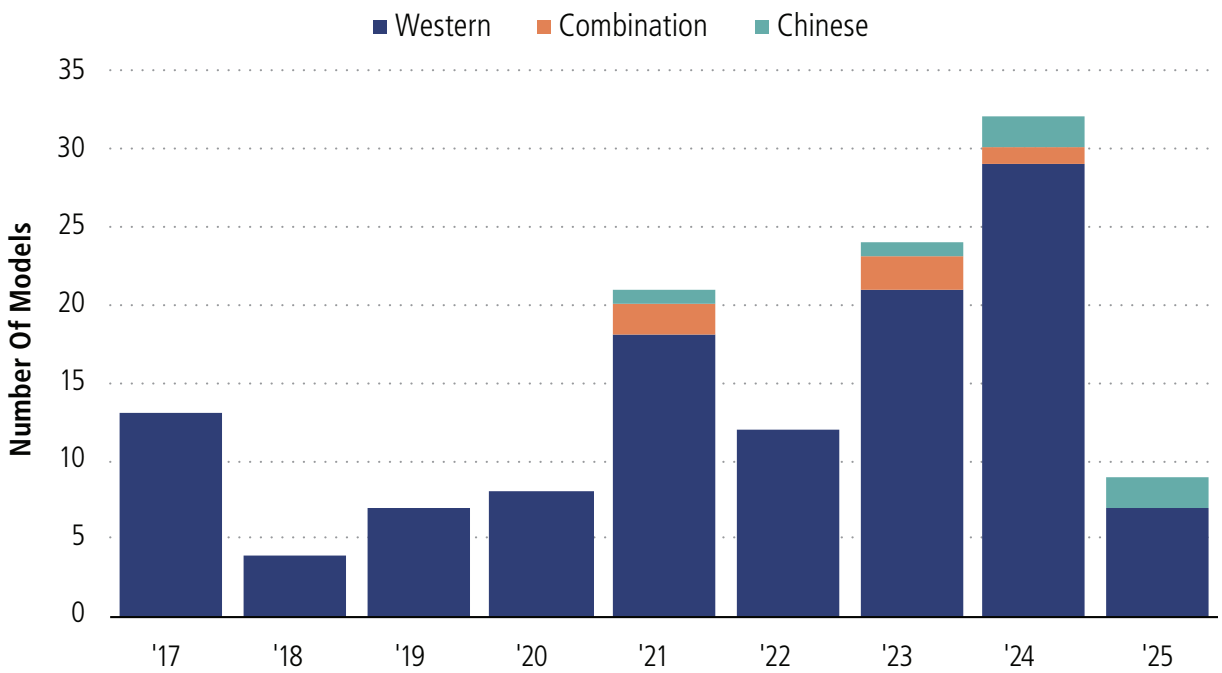


Source: Semiconductor Industry Association
*Electronic Design Automation (EDA)
**Design also includes memory, analog, discrete, and other chips, although GPUs and CPUs (also called logic chips) remain the most advanced and have the largest market share.

We are not witnessing deglobalization; rather, we're learning that participation in the global economy is no longer unconditional. The U.S. dollar still dominates. Most cross-border transactions still flow through New York. Ships still sail. Semiconductors are still running in data centers. But the infrastructure through which all of this operates heavily depends on American jurisdictional and political decisions, and, in extremis, is as weaponizable as shutting down a narrow ocean strait.

For investors, understanding the financial, legal, and network infrastructure of the global economy now matters as much as knowing markets, prices, and geography. Using this lens might also help one anticipate the next big move by a geopolitical actor, perhaps uncomfortable with American dominance, who may try to circumvent the new chokepoints.

fig 6. WESTERN APPEAL: HARDWARE USE OF NOTABLE AI MODELS BY CHINESE DEVELOPERS



Source: EPOCH AI

ENDNOTES

1. 405 Before Common Era (BCE) is 405 years before the year 0.
2. Bank for International Settlements. (2025). Triennial Central Bank Survey of foreign exchange and over-the-counter (OTC) derivatives markets in 2025. https://www.bis.org/statistics/rpfx25.htm. The world trade value in 2024 was $24.6 trillion, or an average of $67 billion daily.
3. Beschwitz, B. (2024, August 30). *Internationalization of the Chinese renminbi: Progress and outlook*. Board of Governors of the Federal Reserve System. https://www.federalreserve.gov/econres/notes/feds-notes/internationalization-of-the-chinese-renminbi-progress-and-outlook-20240830.html
4. Per Treasury Secretary Robert Rubin under the Clinton Administration.
5. The origin of the dollar's geopolitical power predates 9/11. In 1974, Treasury Secretary Bill Simon flew to Jeddah and negotiated the petrodollar bargain: Saudi oil revenues recycled into U.S. Treasuries, purchased in secret. The dollar's escape from the gold standard—which had looked like a crisis—became the foundation for a deeper form of dominance.
6. Daleep Singh, the White House sanctions architect, had argued internally that the central bank was the key target. As long as it was untouched, Russia could use reserves to prop up the ruble, as it had in 2014 when Nabiullina, the governor of the Central Bank of the Russian Federation, spent $100 billion cushioning the blow of Crimea sanctions.
7. Russia's own central bank had been a net gold buyer for years before 2022, accumulating roughly 2,300 tonnes—a prescient hedge, as it turned out, against precisely the scenario that unfolded.
8. CHIPS processes large-value domestic and international dollar payments that are less urgent, whereas Fedwire processes large-value payments that require settlement immediately. Together, they make up 95% of the market (https://www.opendue.com/glossary/what-is-chips).
9. The legal mechanism was Section 311 of the USA PATRIOT Act, which authorized the Treasury to designate foreign institutions as "primary money laundering concerns" and restrict U.S. banks from maintaining correspondent relationships with them.
10. U.S. Department of the Treasury. (2005, September 15). *Treasury designates Banco Delta Asia as a primary money laundering concern under the USA PATRIOT Act*. https://home.treasury.gov/news/press-releases/js2720
11. Iran Threat Reduction and Syria Human Rights Act of 2012, H.R. 1905, 112th Cong. (2012). https://www.govinfo.gov/content/pkg/BILLS-112hr1905enr/pdf/BILLS-112hr1905enr.pdf; The BNP Paribas fine remains the largest sanctions-related penalty in history, exceeding the GDP of roughly one-third of the world's countries.
12. Bloomberg News. (2023). *Russian oil finds new markets via mystery traders and old tankers*. https://www.bloomberg.com/graphics/2023-russian-oil-flows-after-sanctions/
13. The Treasury Department set the price cap through a process that was "more art than science." Russia's marginal production cost was estimated at $25–$35/barrel, and its budget breakeven was at ~$70. The $60 cap was deliberately conservative—high enough to give Russia an incentive to keep selling, yet low enough to squeeze revenues.
14. Ruwitch, J. (2025, December 1). As political winds shift, top chipmaker TSMC looks beyond Taiwan. *NPR*. https://www.npr.org/2025/12/01/nx-s1-5620992/tsmc-chipmaker-expands-beyond-taiwan.
15. Murphy, B. (2022, May). *Chokepoints: China's self-identified strategic technology import dependencies*. Center for Security and Emerging Technology. https://cset.georgetown.edu/wp-content/uploads/CSET-Chokepoints.pdf
16. China's new chip, named Kirin 9000S, was a 7-nanometer (nm) chip, which is highly advanced. However, their production scale was limited because they relied on older lithographic machines employing a "multi-patterning" technique that was more time-consuming and costly. Taiwan and South Korea were able to produce 7nm chips on a large scale back in 2019, and can produce 3 nm chips today, which are currently the most advanced in the world (https://www.csis.org/analysis/contextualizing-national-security-concerns-over-chinas-domestically-produced-high-end-chip).
17. Blablová, V., & Rahman, R. (2025, July 26). *Why China isn't about to leap ahead of the West on compute*. Epoch AI. https://epoch.ai/gradient-updates/why-china-isnt-about-to-leap-ahead-of-the-west-on-compute#user-content-fn-8.