Symbiosis United
ANALYTICS
HUMAN · COMPUTER · SYMBIOSIS

REPORT SERIES
AIR 001 | 2026-05-01

STRATEGIC TRADE INTELLIGENCE

U.S.-China Strategic Tariff Exposure Radar

Where 2024–2026 Section 301 actions change U.S. sourcing, cash flow, and supplier resilience

PREPARED BY SYMBIOSIS UNITED ANALYTICS | VERSION 1.0

2024 U.S. IMPORTS FROM CHINA	CHINA SHARE OF U.S. IMPORTS	STRATEGIC HS6 PROXY PRODUCTS
$449.6B	14.2%	52
STRATEGIC CHINA-ORIGIN IMPORTS	**GROSS SCHEDULED DUTY BASE**	**LARGEST AFFECTED GROUP**
$25.7B	$8.8B	Li-ion batteries

BUSINESS PROBLEM

The 2024–2026 Section 301 schedule is now a working-capital and supply-assurance test for U.S. buyers. The tariff shock is narrow in total trade value but concentrated in electronics, batteries, vehicles, medical products, metals, critical minerals, and solar inputs where qualification cycles are slow. The management question is which product nodes need immediate price protection, which need supplier qualification, and which can be monitored without distracting the operating team.

Executive Synthesis

Section 301 has moved from a broad bilateral pressure tool toward a targeted industrial-policy instrument. The 2024–2026 schedule affects a small share of U.S. imports from China, but it lands on product nodes where qualification cycles, customer approvals, and downstream dependencies make rapid substitution difficult.

AIR 001 isolates that strategic portion of the trade base. BACI records $449.6B of 2024 U.S. imports from China, equal to 14.2% of U.S. goods imports. The proxy universe relevant to the 2024–2026 Section 301 schedule contains 52 HS6 products with $25.7B of China-origin imports. Applying listed final rates to those flows produces a gross scheduled duty base of $8.8B. This is not a customs invoice; it is a screening estimate that shows where management attention should concentrate before HTS classification, exclusions, Chapter 99 treatment, entry timing, and product-specific facts determine actual liability.

The exposure is concentrated. Lithium-ion Batteries (EV and Non-EV HS02 Proxy) is the largest duty-base group, and HS6 850780 (Electric accumulators, including lithium-ion systems) is the largest single proxy product. The direct tariff hit is therefore not a broad import-price story; it is a concentrated working-capital, supplier-readiness, and customer-pass-through problem.

The evidence also changes the unit of analysis. Direct exposure begins with import value and duty rate, but the commercial risk depends on origin concentration, qualified alternative supply, downstream usage, and the ability to pass costs through contracts. A narrow customs-cost response will miss the products whose dollar exposure looks manageable but whose qualification or production-continuity risk is binding. The practical implication is segmentation, not a blanket China exit: products with high duty rates, high China share, and limited qualified alternatives need price protection and supplier qualification now; products with high rates but diversified import lanes may be managed through pricing, contract terms, and monitoring.

Action Table

Business problem	Evidence	Recommended action	Horizon	Confidence
Tariff cash timing	2024 China-origin strategic proxy imports imply $8.8B of gross listed-rate duty base.	Update landed-cost models, duty-accrual timing, open-PO exposure, and customer pass-through clauses.	0-90 days	High
Supplier concentration	4 HS6 proxy products exceed both 50% China share and $100M in China-origin imports.	Rank those products first for dual qualification, inventory cover, and customer-notice decisions.	3-12 months	High
HTS classification	The legal tariff instrument is HTS8/HTS10 and Chapter 99; BACI is an HS02 HS6 proxy.	Use this report for prioritization, then validate HTS lines, exclusions, and origin treatment with trade counsel.	Immediate	High
Substitution realism	Alternatives are visible in several trade lanes, but concentration and qualification barriers remain uneven.	Separate quick volume rebalancing from qualification-heavy redesign and customer approval work.	3-24 months	Medium
Working capital	Duties are paid at entry while customer recovery often lags the contract cycle.	Stress test cash conversion, inventory timing, credit-line headroom, and delayed pass-through.	0-180 days	Medium

What The Numbers Mean For Trade

The first economic fact is scale. China supplied $449.6B of U.S. goods imports in 2024, or 14.2% of total U.S. goods imports. AIR 001 narrows that universe to strategic HS6 proxies: $25.7B of China-origin imports within $171.4B of total U.S. imports across affected products. The tariff shock is therefore not large relative to total trade, but it is large within the product systems it touches.

The second fact is intensity. Applying listed final Section 301 rates to 2024 China-origin flows produces an $8.8B gross scheduled duty base, equivalent to 34.4% of China-origin imports in the proxy universe. The incremental proxy is $6.5B, or 25.4%. Finance teams should model cash paid at entry; procurement and strategy teams should model landed-cost changes that can trigger supplier switching.

The third fact is concentration. Lithium-ion Batteries (EV and Non-EV HS02 Proxy) accounts for 46.5% of the gross scheduled duty base and 64.0% of China-origin strategic proxy imports. The top three groups account for 78.4% of the duty base. Executive attention should therefore follow exposure concentration, not the number of tariff headings.

The operating channel is broader than the duty line. Tariffs move through direct duty outlay, supplier repricing, inventory and cash-conversion timing, and customer pass-through. For many firms, the working-capital effect will arrive before supplier diversification is complete.

1 Policy Shock Dashboard

The schedule matters because it fixes both rate and clock. USTR's September 18, 2024 Federal Register notice finalized increases across 14 strategic product groups. The 2024 increases apply from September 27, 2024; later increases apply from January 1 of 2025 or 2026. A December 16, 2024 notice added five tungsten, polysilicon, and wafer subheadings effective January 1, 2025. USTR's March 11, 2026 structural-excess-capacity investigations are treated here as forward-looking policy risk rather than applied duties.

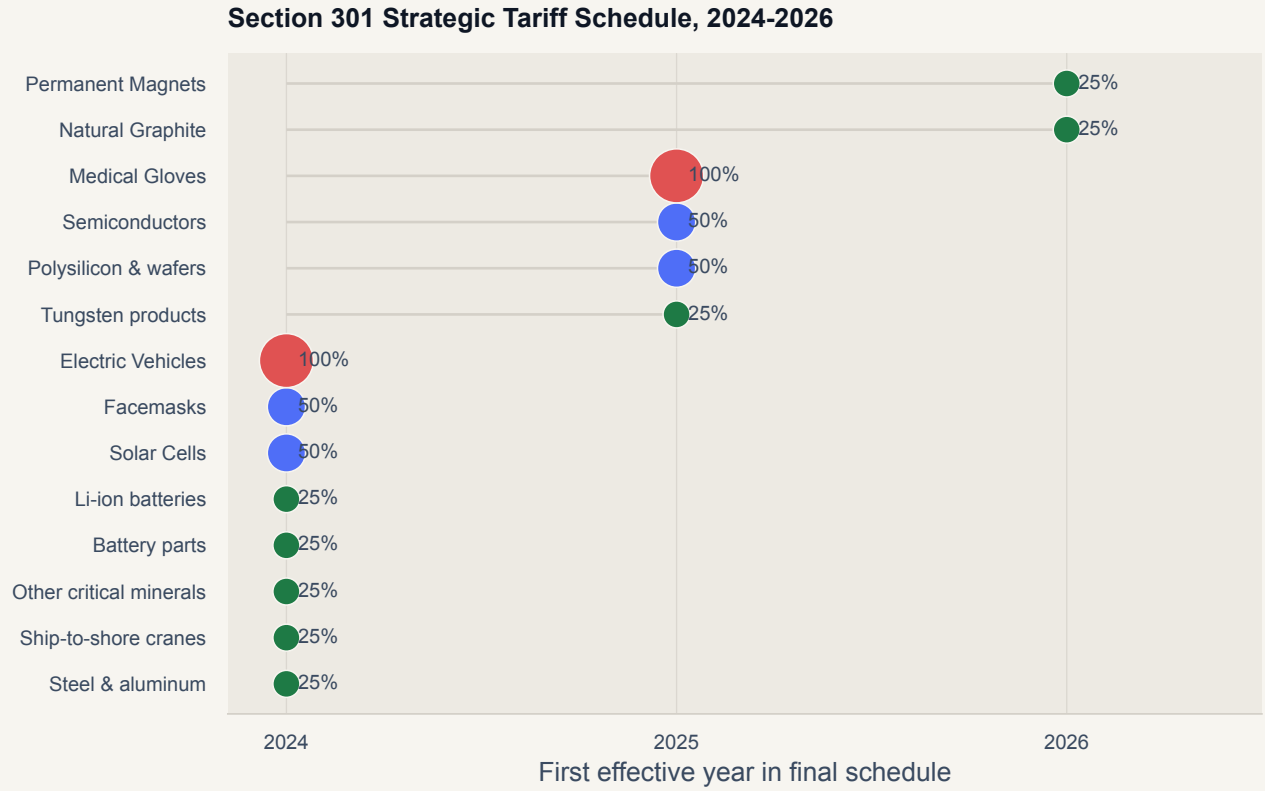

Figure 1: Final scheduled rate by product group. Rates are listed Section 301 schedule rates; product-level legal treatment depends on HTS classification and exclusions.

Product group	China imports	Duty base	Rate	China share
Li-ion batteries	$16.5B	$4.1B	25%	61.9%
Facemasks	$3.4B	$1.7B	50%	66.4%
Semiconductors	$2.2B	$1.1B	50%	3.6%
Electric Vehicles	$0.7B	$0.7B	100%	1.1%
Medical Gloves	$0.6B	$0.6B	100%	21.3%
Battery parts	$1.3B	$0.3B	25%	50.0%
Solar Cells	$0.2B	$0.1B	50%	1.2%
Other critical minerals	$0.4B	$0.1B	25%	9.1%

Figure 1 shows that the policy shock has both a rate dimension and a timing dimension. Products effective in 2024 have already entered landed-cost pressure; products effective in 2025 are current purchasing and contract-renewal issues; products effective in 2026 still matter because supplier qualification often exceeds one budget year. The March 2026 investigations do not add a duty in this report, but they indicate that capacity-sensitive sectors remain exposed to future policy escalation.

2 Direct Exposure

The direct exposure screen ranks products by China-origin import value multiplied by the final listed Section 301 rate. This is a business screening metric, not a legal classification. It preserves the distinction between *legal tariff line* and *BACI HS6 proxy* because harmonized trade data are measured at HS6 while tariff law is implemented at HTS8/HTS10 and Chapter 99 lines.

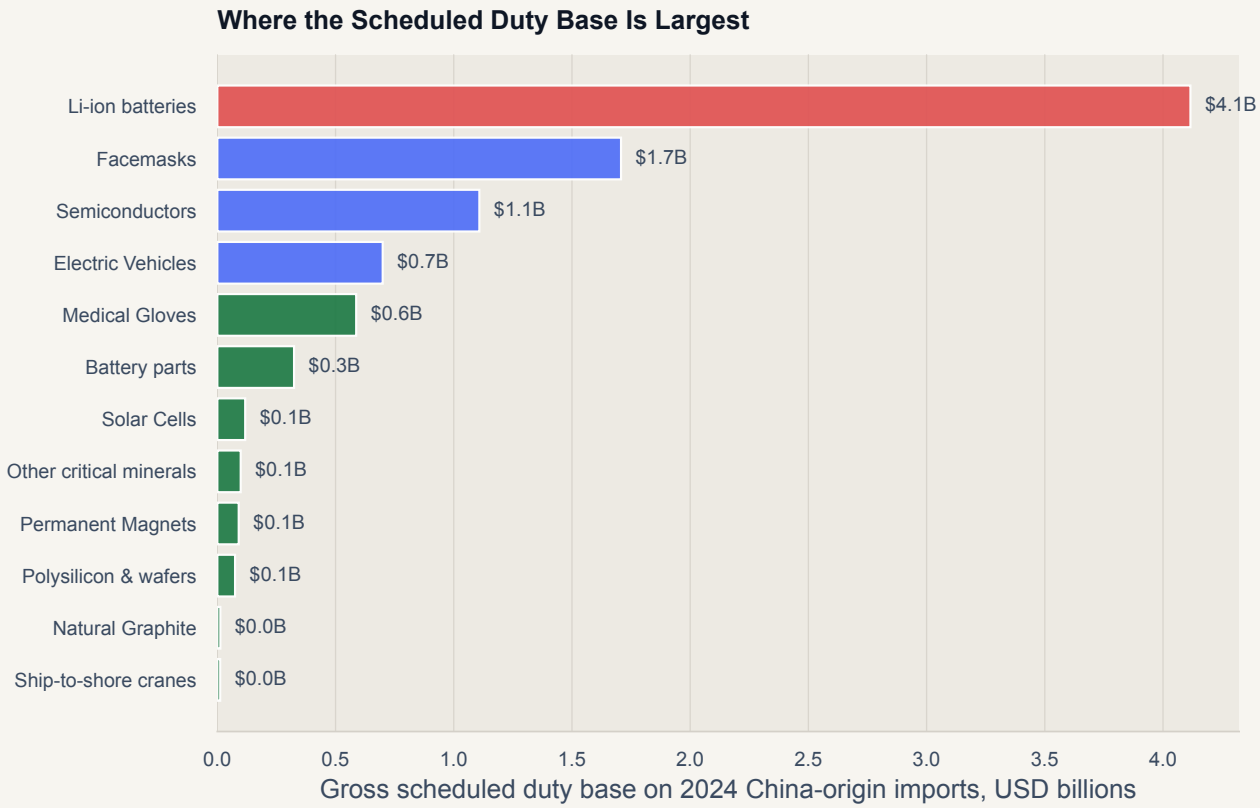

Figure 2: Top product groups by gross scheduled duty base. Values apply final listed rates to 2024 China-origin imports in the HS6 proxy universe.

Figure 2 combines import value and tariff rate. Batteries dominate not because they face the highest listed rate, but because the import base is large. The gross scheduled duty base is a pressure indicator, not a customs invoice, and it points to where prioritization

should begin. Batteries, facemasks, and semiconductors explain 78.4% of measured exposure.

HS6	Product proxy	Policy group	China imports	China share	HHI
850780	Electric accumulators, including lithium-ion systems	Li-ion batteries	$16.5B	61.9%	0.41
630790	Made-up textile articles, including masks and respirators	Facemasks	$3.4B	66.4%	0.46
854221	Electronic integrated circuits	Semiconductors	$1.5B	3.8%	0.16
870390	Passenger motor vehicles, other	Electric Vehicles	$0.7B	1.1%	0.16
401511	Medical and surgical gloves of vulcanized rubber	Medical Gloves	$0.5B	25.9%	0.33
850790	Parts of electric accumulators	Battery parts	$1.3B	50.0%	0.28
854140	Photosensitive semiconductor devices and solar cells	Solar Cells	$0.2B	1.2%	0.16
850511	Permanent magnets and magnetized articles	Permanent Magnets	$0.4B	74.9%	0.57
854129	Transistors other than photosensitive devices	Semiconductors	$0.2B	9.9%	0.09
381800	Doped chemical elements and compounds for electronics	Polysilicon & wafers	$0.1B	9.2%	0.22

The HS6 table is where business action begins. Product 850780, the largest HS6 proxy in the screen, has $16.5B of China-origin imports and a China share of 61.9%. That combination matters more than the tariff rate alone because it points to both duty outlay and supplier-market constraint. Products with high HHI, high China share, and few alternative origins should move first into supplier qualification and customer pass-through review.

3 Country Exposure Matrix

Direct exposure does not tell managers whether substitution is feasible. The origin matrix adds that missing constraint by showing whether alternative suppliers already appear in U.S. import lanes. Existing import presence is not proof of available capacity, but it is evidence of supplier relationships, logistics channels, quality acceptance, and documentation. The matrix is product-group based rather than firm-specific; restricted FactSet relationship records were not used in this public-facing version.

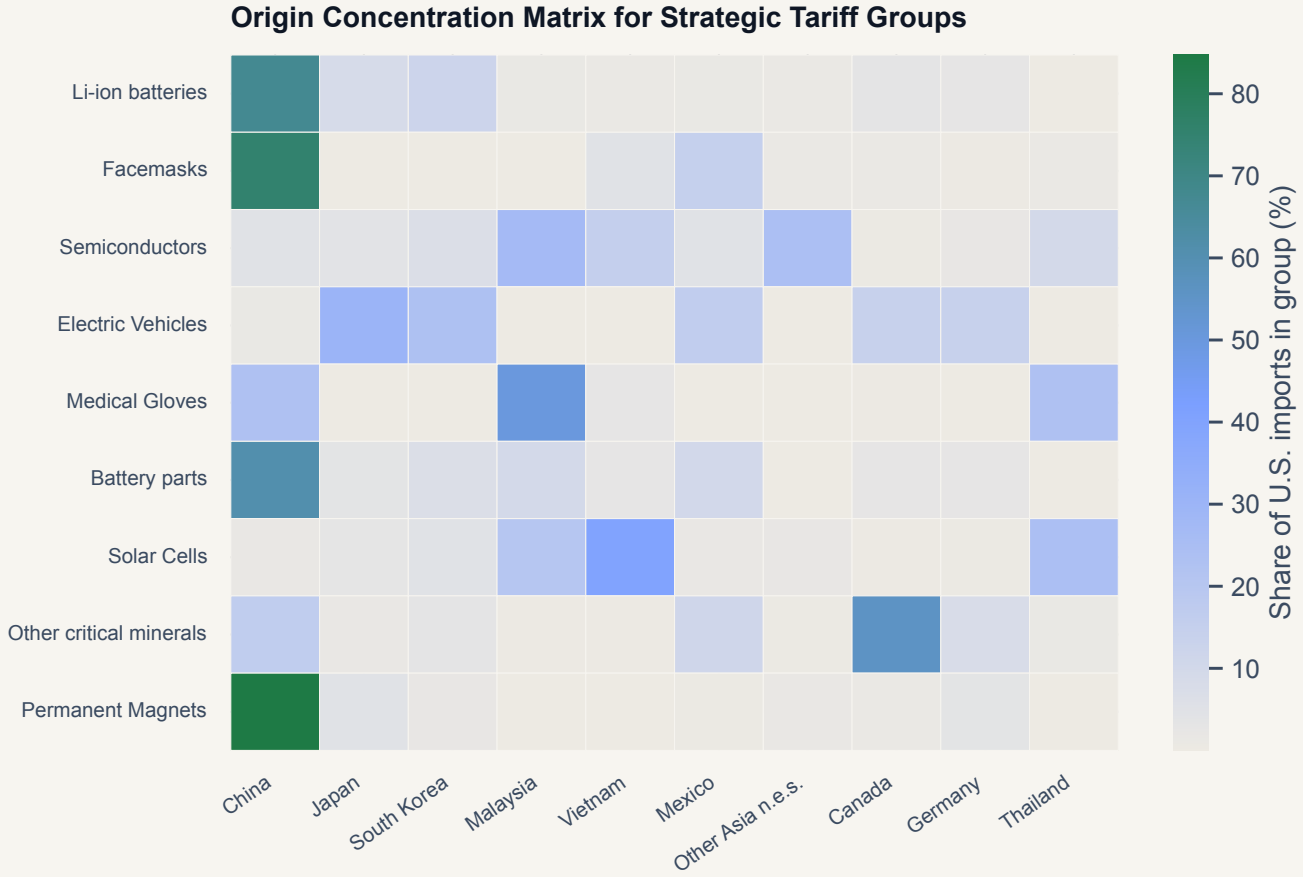

Figure 3: Origin shares for the largest strategic tariff groups. Darker cells indicate greater U.S. import dependence on the origin within the product-group proxy.

Figure 3 separates tariff exposure from sourcing feasibility. A low-share China cell does not make the tariff immaterial when the product is a critical input, qualified suppliers are scarce, or customer contracts prevent rapid pass-through. Conversely, a high-share China cell with low U.S. import value may be operationally urgent but financially limited. High China share with few visible alternatives indicates a structural substitution problem; a diversified row indicates a pricing and allocation problem, where firms may rebalance volumes but still need to secure capacity and confirm that alternative-origin treatment survives customs review.

4 Network Vulnerability

The next question is where the direct tariff shock propagates. A product with modest import value can still be operationally critical if it sits inside machinery, vehicles, electronics, medical supplies, or construction equipment. The network view therefore shifts the unit of analysis from the importer of record to the production system that absorbs the cost, lead-time, and qualification shock.

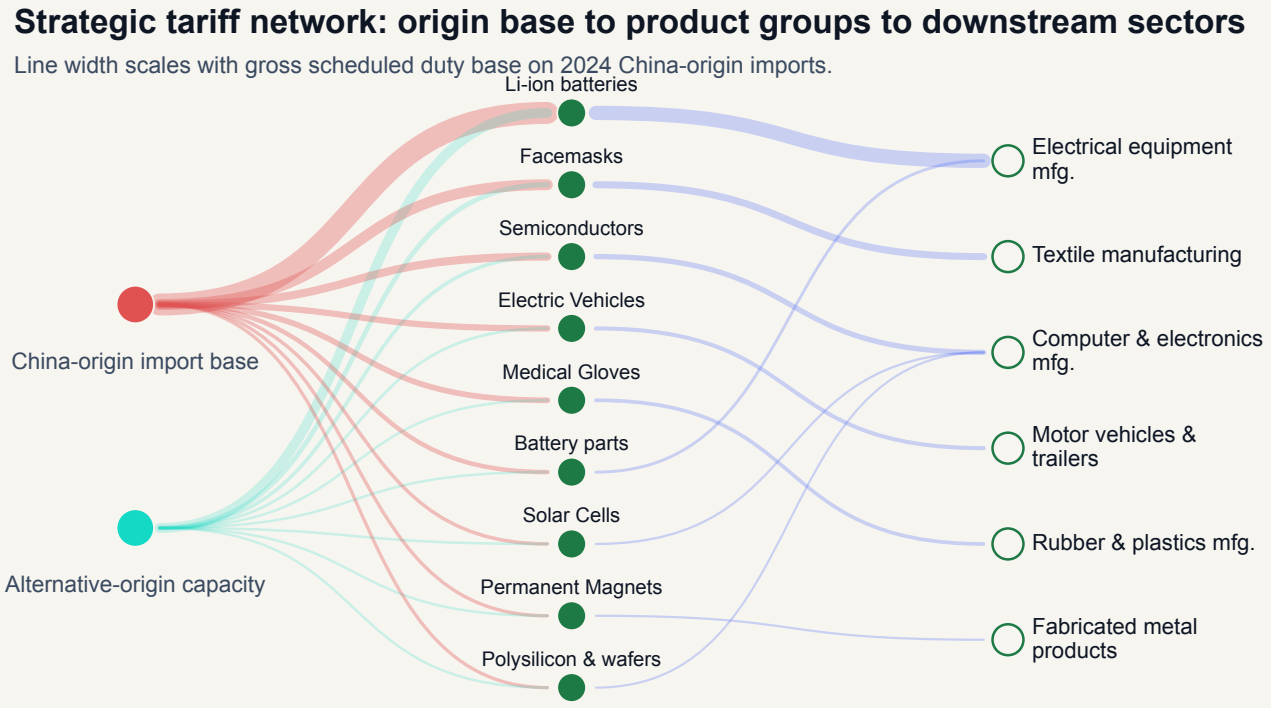

Figure 4: Schematic flow from origin base to product groups to downstream sectors. Line width scales with gross scheduled duty base.

Figure 4 is schematic by design: it shows system structure, not shipment-level routing. Line width scales with gross scheduled duty base, so thicker links identify where cost pressure is most likely to matter commercially. The largest near-term bottlenecks are not simply the highest-rate products; they are products where tariff exposure, China share, and downstream usage all point to the same node.

Network vulnerability explains why a narrow tariff can have broad commercial consequences. If a tariffed input is used in machinery, vehicles, electronics, construction equipment, or medical supply chains, the affected party may not be the firm whose purchasing system first sees the duty code. The commercial exposure includes tiered suppliers, customer contracts, warranties, and production schedules. Procurement should therefore ask which product nodes are sole- or near-sole China qualified, which are

embedded in customer-qualified systems, which contracts allow tariff pass-through, and which suppliers can document origin before any volume shift.

Network signal	Commercial implication	Business response
High China share plus high duty base	The firm may face both a duty bill and limited near-term supplier leverage.	Reprice landed cost, notify customers, and launch dual qualification.
High HHI but modest import value	The dollar exposure may look small, but the node can stop production.	Treat as continuity and engineering risk, not only tariff cost.
Many alternative origins with U.S. lanes	Substitution is more plausible, but competitors can bid up capacity.	Reserve capacity early and verify origin documentation before moving volume.
Downstream sector pressure	The cost shock may surface in a supplier quote rather than a customs entry.	Alert finance, sales, and category owners before renewal negotiations.

5 Substitution And Sourcing Alternatives

Substitution is a staged feasibility problem. The realistic question is whether alternative origins already have U.S. lanes, global export capacity, and enough growth momentum to absorb incremental demand without creating a new bottleneck. The readiness score combines existing U.S. non-China import presence, global non-China export capacity, 2021-2024 growth, and U.S. RTA/FTA links. It is not a switch recommendation; it identifies which countries deserve diligence first.

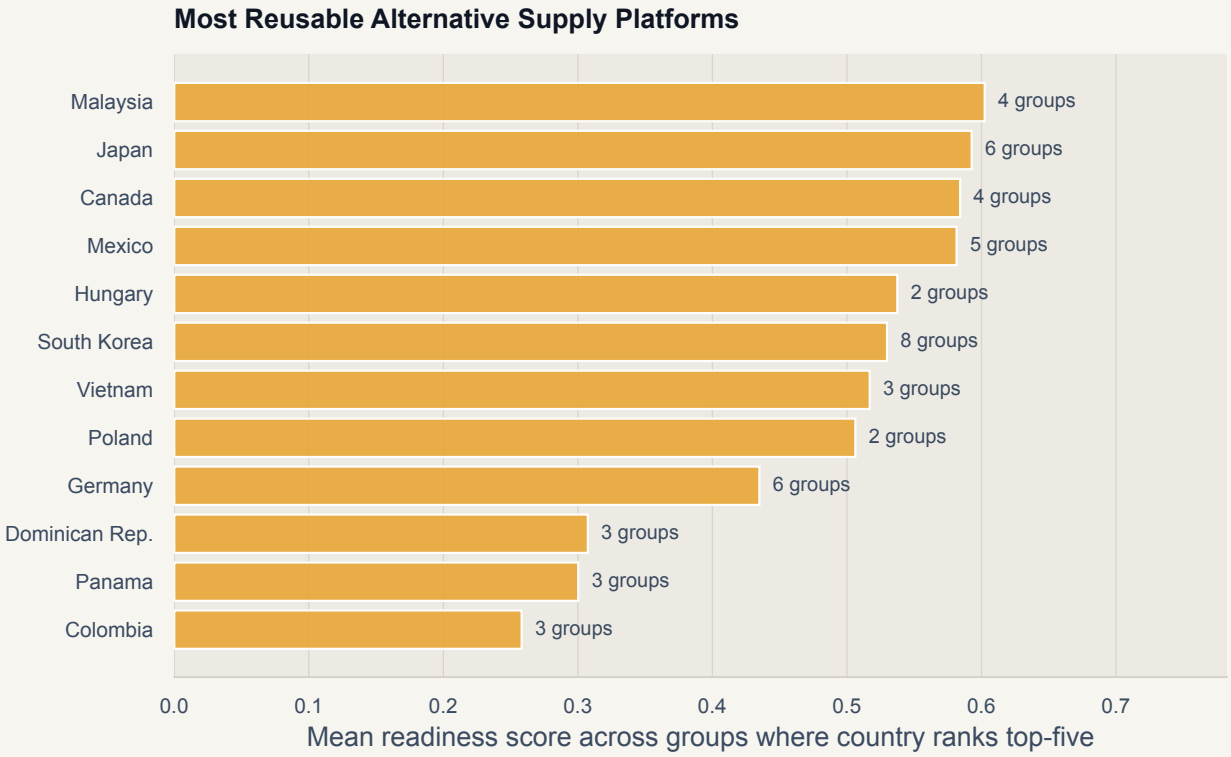

Figure 5: Countries that appear repeatedly in top-five alternative-origin screens across strategic product groups.

Figure 5 counts reusable alternative platforms: countries that repeatedly appear in top-five screens across strategic product groups. A high count does not mean the country can replace China across all volumes. It means the country is a practical place to begin commercial diligence because it already appears in multiple relevant trade lanes. In this screen, the most reusable platforms are South Korea, Germany, Japan, Mexico, Canada.

Product group	Top screened alternatives	Best score
Battery parts	Mexico, South Korea, Malaysia	0.77
Electric Vehicles	Japan, South Korea, Germany	0.71
Facemasks	Mexico, Vietnam, India	0.89
Li-ion batteries	South Korea, Japan, Hungary	0.87
Medical Gloves	Malaysia, Thailand, Costa Rica	0.70
Natural Graphite	Canada, Madagascar, Mozambique	0.71
Other critical minerals	Canada, Peru, Indonesia	0.65
Permanent Magnets	Japan, Germany, South Korea	0.71
Polysilicon & wafers	Japan, South Korea, Panama	0.73
Semiconductors	Other Asia n.e.s., Malaysia, South Korea	0.69

Fast substitution is most plausible where alternative countries already sell meaningful volumes into the United States. Structural substitution is required where alternatives have global capacity but limited U.S. lanes, weak certification history, or constrained upstream inputs. The fastest-looking categories in the screen are Facemasks; Li-ion batteries; Solar Cells, because alternative suppliers already show import presence or export capacity. That does not eliminate execution risk: origin documentation, AD/CVD exposure, forced-labor diligence, customer approval, and supplier qualification can all turn a visible trade lane into a slow operating transition.

6 Input-Output Propagation

The tariff signal does not stop at the border. It travels through input purchases into construction, vehicles, machinery, wholesale, retail, and other downstream sectors that use tariffed goods directly or indirectly. The input-output module maps HS6 proxy exposure to ISIC sectors and applies U.S. ICIO coefficients to identify downstream sectors where cost pressure is likely to appear beyond the direct importer. This is a pressure screen, not a pass-through forecast.

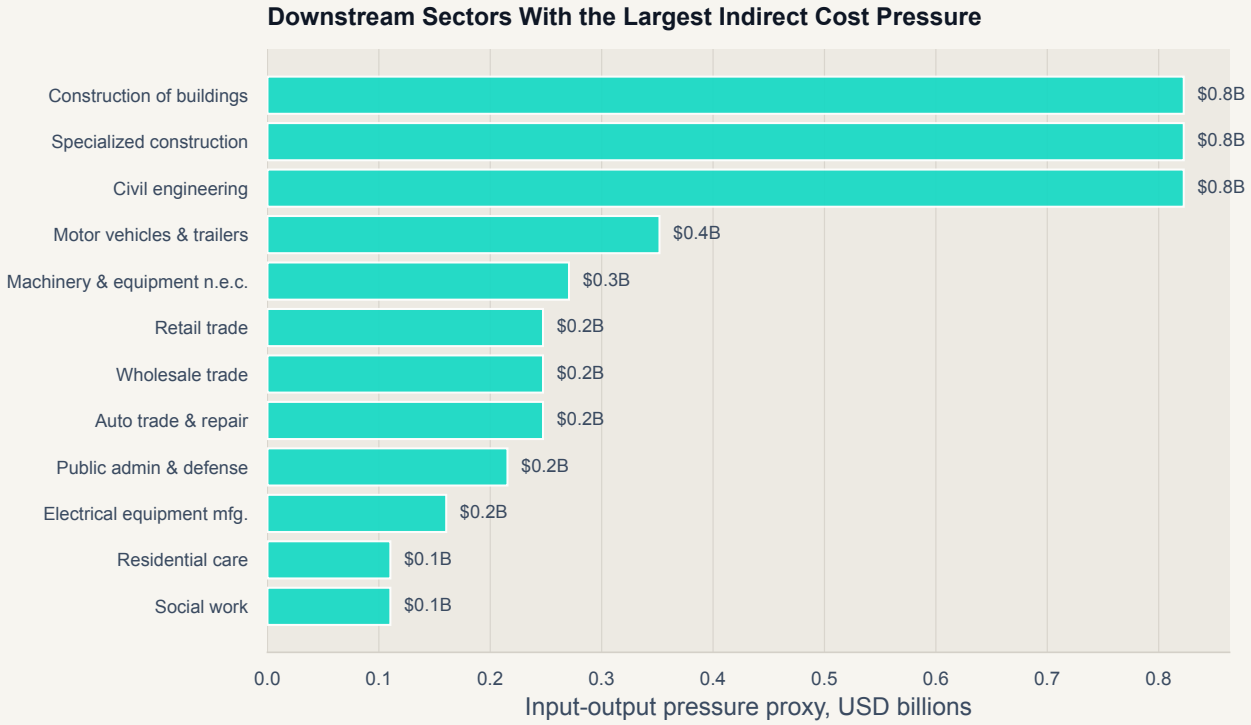

Figure 6: Downstream sector pressure proxy using U.S. input-output coefficients. This is a propagation screen, not a price forecast.

Figure 6 shows a pressure proxy, not a forecasted price increase. The calculation maps product-level duty exposure into input sectors and applies U.S. input-output coefficients to show where cost pressure may be absorbed downstream. The top three downstream sectors sum to $2.5B, with Civil engineering appearing at the top.

ISIC sector	China imports	Duty base	HS6 count
Electrical equipment mfg.	$17.8B	$4.4B	2
Textile manufacturing	$3.4B	$1.7B	1
Computer & electronics mfg.	$2.4B	$1.2B	11
Motor vehicles & trailers	$0.7B	$0.7B	2
Rubber & plastics mfg.	$0.6B	$0.6B	2
Fabricated metal products	$0.4B	$0.1B	1
Manufacture of basic metals	$0.3B	$0.1B	20

Input-output propagation explains why the tariff may matter to firms that never import the named tariff product directly. A manufacturer may buy through a distributor, integrator, or tier-1 supplier, yet still experience the tariff through price increases, longer lead times, or supplier requests to renegotiate. Procurement should alert affected cost centers before the invoice arrives.

7 Econometric Benchmark

The historical benchmark cautions against assuming fast supplier migration. We estimate a product-year benchmark for the change in China share after the initial Section 301 period. The specification is a two-way fixed-effect HS6 panel for 2015–2024:

$$\text{ChinaShare}_{k,t} = \beta\ \text{StrategicProxy}_{k} \times \text{Post2018}_{t} + \text{HS6 FE} + \text{Year FE} + \epsilon_{k,t}$$

The estimated coefficient is 4.4 percentage points, with a heteroskedasticity-robust standard error of 0.7 percentage points across 47,206 observations and 4,891 HS6 products. This should not be read as a causal estimate of the 2024–2026 schedule. It is a benchmark showing that products in the current proxy universe behaved like slower-adjusting sourcing categories after the first Section 301 period.

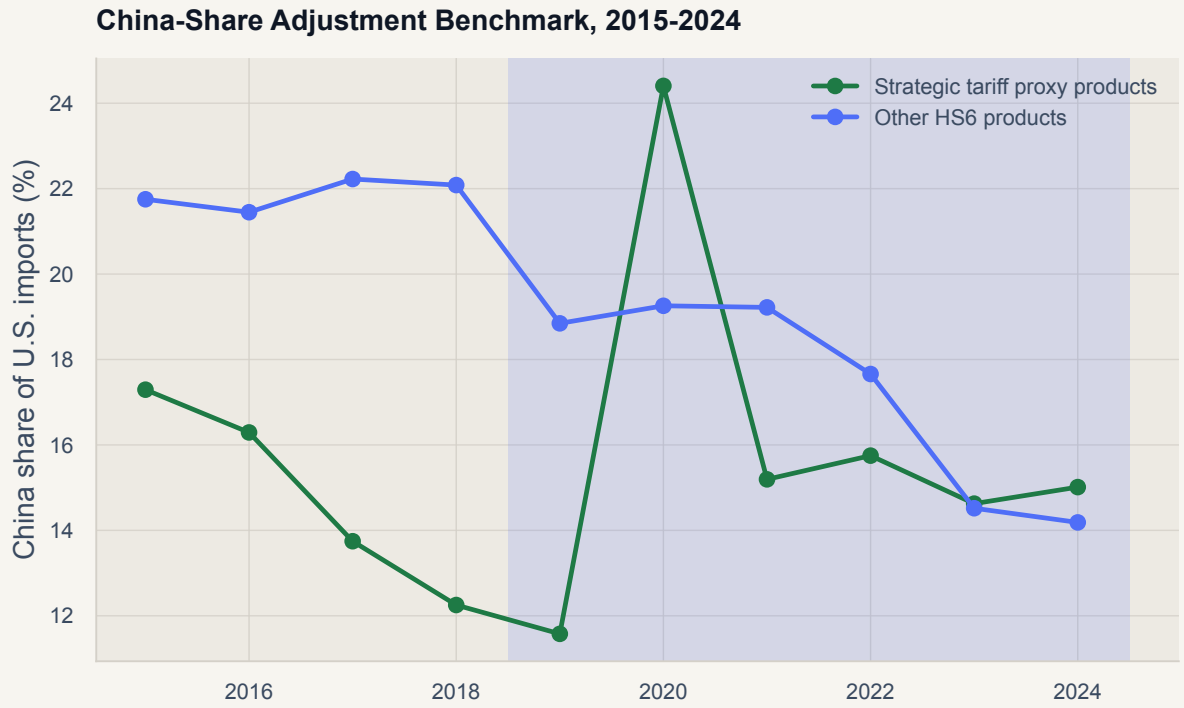

Figure 7: Weighted China share of U.S. imports for strategic tariff proxy products versus other HS6 products.

Figure 7 compares the weighted China share for strategic proxy products against other HS6 products, with the shaded period marking the post-2018 tariff era. The positive post-2018 coefficient means the strategic proxy products did not behave like easy-to-switch goods in the historical data. For business planning, tariff exposure should be modeled as a multi-period adjustment problem: short-run mitigation usually comes from pricing, inventory timing, and contract terms; medium-run mitigation comes from qualification and allocation; long-run mitigation may require product redesign or regional ecosystem development.

8 Decision Roadmap

The practical decision is not whether to leave China. The practical decision is how to segment each product into pass-through, qualify-alternative, redesign, or monitor. The roadmap turns the exposure screen into four operating decisions.

Products with high China share, slow qualification, and pass-through rights belong in the price-protection lane. Products with visible alternative origins but incomplete certification belong in dual qualification. Products embedded in customer-qualified systems or China-centered ecosystems require redesign rather than simple supplier switching. Products with low China share or limited dollar exposure can remain in a monitored policy file, provided exclusion status, origin concentration, and policy updates are reviewed on a fixed cadence.

The owner set has to be cross-functional. Procurement owns supplier qualification; trade compliance owns classification and origin; finance owns duty accrual and working capital; sales or legal owns customer pass-through; strategy owns the longer relocation or redesign decision.

9 Recommended Business Actions

The first operating cycle should convert the exposure screen into named owners and dated decisions. Procurement should build a top-20 tariff-at-risk list at HTS10 and supplier level, then split it into pass-through, qualify-alternative, redesign, and accept-with-monitoring lanes. No volume should move before the team checks origin rules, AD/CVD exposure, forced-labor risk, and customer qualification requirements.

Pricing and contracting need to move on the same clock. Tariff-adjustment clauses, Incoterms responsibility, landed-cost files, and open purchase orders should be reviewed before entry, not after the duty is paid. Finance should stress test cash conversion, inventory timing, credit-line headroom, and delayed customer recovery, especially for high-volume China lanes.

Trade compliance remains the constraint on speed. The HS6 proxy screen is enough for prioritization, but not for customs treatment. HTS classifications, Chapter 99 applicability, exclusions, country of origin, substantial transformation, and documentation have to be validated before any sourcing recommendation begins to resemble evasion or illegal transshipment. Strategy should then evaluate nearshoring and friend-shoring on total landed cost and qualification time, not tariff rate alone.

Timing	Decision focus	Owner set
Week 1-2	Confirm HTS10 exposure, supplier names, Incoterms, exclusion status, and open purchase orders.	Trade compliance, procurement, finance
Day 30	Decide pass-through language, inventory posture, and dual-source candidates for the top exposure lanes.	Procurement, sales, legal
Day 60	Validate alternative-origin documentation, qualification constraints, AD/CVD exposure, and forced-labor controls.	Trade compliance, quality, legal
Day 90	Reprice, reallocate, or redesign high-risk nodes; place monitor-only products into a quarterly policy review.	CFO, COO, category leaders

10 Technical Appendix

Data. The analysis uses CEPII BACI HS02 V202601 bilateral goods trade with local HS-to-ISIC mappings for 2005–2024; OECD ICIO-derived U.S. input-output coefficients; CEPII gravity/RTA context for substitution screens; and local policy uncertainty datasets as background context. Values use BACI's `value_thousands_usd` converted to U.S. dollars.

Policy coding. Official tariff lines are taken from 89 FR 76581 and 89 FR 101682, supplemented by USTR press releases on December 11, 2024, May 31, 2025 exclusions, and March 11, 2026 structural-excess-capacity investigations. HTS8/HTS10 lines are mapped to BACI HS6. Where the HS revision differs, the report uses an explicit HS02 proxy and records the mapping in `derived/policy_hts_to_baci_hs6_crosswalk.csv`. Policy status was cross-checked against official USTR and Federal Register sources on 2026-05-01.

Metrics. Gross scheduled duty base equals China-origin 2024 imports multiplied by the final listed Section 301 rate. The incremental shock proxy uses group-level prior-rate assumptions and is kept in the derived data; the report emphasizes the gross listed-rate base because prior treatment, exclusions, and Chapter 99 interactions vary by tariff line.

Limitations. This report is not a binding legal classification. BACI is annual and HS6-level; it does not identify shipment routing, ports, firm contracts, product exclusions, Chapter 98 treatment, FTZ status, or firm-specific supplier relationships. Restricted FactSet data were not used.

Core citations. CEPII BACI: Gaulier and Zignago (2010), BACI V202601. CEPII Gravity: Conte, Cotterlaz, and Mayer (2022). OECD ICIO: Yamano et al. (2023). USTR/Federal Register: 89 FR 76581 and 89 FR 101682. RTA data: Larch RTA Database, version 20260111. Policy uncertainty and risk series: Baker, Bloom, and Davis (2016); Caldara et al. (2020); Caldara and Iacoviello (2022).

Sources: CEPII BACI; USTR; Federal Register; OECD ICIO; Mario Larch RTA Database; World Bank and policy-risk datasets in Symbiosis Origin_Data; authors' calculations.