Supplementary Information for

Unintended shift in supply bases
away from well-governed jurisdictions
after critical mineral export restrictions

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Supplementary Note 1: Text dictionaries

Annual reports were lower-cased and split into sentences at full stops, question marks, exclamation marks, semicolons and blank lines. Mineral patterns (word-bounded): rare earths (rare earth(s), neodymium, dysprosium, praseodymium, terbium, samarium, gadolinium, lanthanum, cerium, europium, yttrium (excluding "yttrium-90"), lutetium, holmium, erbium, thulium, ytterbium, NdFeB); separately, for the 2025 restriction, the medium and heavy rare earths it covers (dysprosium, terbium, samarium, gadolinium, lutetium, yttrium, scandium); lithium; cobalt; nickel; graphite; gallium (incl. GaAs and GaN followed by a device word); germanium; antimony; tungsten/wolfram; molybdenum; indium; tellurium; bismuth; tantalum/coltan; niobium/columbium; vanadium; manganese; magnesium; platinum-group metals; titanium; polysilicon/silicon metal; fluorspar; beryllium; chromium; zirconium/hafnium; rhenium; scandium; cesium/rubidium; copper; aluminium/bauxite/alumina; zinc; tin (with a materials context); uranium; helium. Input/supply words: raw material, supplier, supply/supplies, source/sourcing, purchase, procure, import, price, cost, shortage, availability, depend, component, input. Supplier search: supply-chain words (supply chain, supplier, sourcing, raw material, vendor, procurement) in the same sentence as diversif-, alternative/alternate source(s) or supplier(s), second/secondary source(s), dual sourcing, multiple sources/suppliers, additional suppliers, new suppliers, or qualify(ing) (new/additional/alternative) suppliers. Disruption, export-control and geopolitical dictionaries are listed in script `01a_tenk_mineral_text.py`.

Supplementary Note 2: Sample splitting and multiple testing

Before any outcome was examined, companies were assigned to an exploration half and a confirmation half by the MD5 hash of the company identifier with the fixed seed 20261005. Outcomes (84 measures covering inventories and other buffers, margins, investment, the composition of the supplier network, emissions, environmental and social incidents, patents and annual-report text), pre-event characteristics (52) and candidate channels (42 supplier-network, accounting, patent, incident and annual-report measures) were estimated in the exploration half, in the confirmation half and in the full sample. Because results from both halves were inspected together, neither half is a clean hold-out sample; the half-sample estimates in Table 1, Table 2 and Supplementary Tables S18 and S19 are therefore replication diagnostics rather than confirmatory tests.

To account for the number of estimates examined, we control the false-discovery rate within each family (Supplementary Table S18): the main outcome has $q = 0.015$ among the 84 outcomes; agility and pricing power have $q = 0.32$ and $q = 0.36$ among the 52 pre-event characteristics; and disclosed supplier search, in its untransformed form, has $q = 0.09$ among the 42 candidate channels. Every estimate in each family is listed in Supplementary Table S19. Of the 52 characteristics, 2 pass false-discovery-rate control; neither withstands checks of its precision (Supplementary Table S20). Of the 84 outcomes, 12 pass; besides the supply-base measures reported in the main text, they include raw-material inventories, which were already rising before the restrictions, and patents, whose decline loses significance with industry-by-year-by-event fixed effects (Supplementary Table S21). We therefore treat the main estimate as the paper's finding, and the variation by pre-event characteristics and the change in disclosed supplier search as exploratory. Two measurement choices affect these exploratory

analyses: pricing power is the within-industry-year percentile of gross margin rather than gross margin itself, which is dominated by companies with negligible sales; and no measure is derived from the same annual-report sentences as exposure. The study was not preregistered.

Supplementary Note 3: Audit of the exposure measure

For each of the 284 exposed company-events of the six analysed events, one pre-event annual report that names a restricted mineral of the event together with an input-related word was drawn at random (seed 20261005), and up to two flagged sentences were extracted with the sentence splitter and dictionaries used for the exposure measure (424 sentences; for one company-event no flagged sentence could be retrieved, leaving 283 audited). Each sentence was coded as describing input use or not against a written rubric (repository file `intermediate/02d_audit_rubric.md`): input use when the company buys, consumes, contains in its products or depends on the supply of the mineral or of a material or component made from it; not input use when the mineral is an output the company produces, mines, recycles or sells, appears only in a product or technology name, concerns customers' use or a market description, or the sentence is too fragmentary to tell. Each sentence was classified twice, independently and blind to the analysis, by a large language model given only the rubric and the sentence; the two classifications agreed on 96% of sentences (Cohen's $\kappa = 0.90$), and the remaining disagreements were resolved by a third, independent classification against the same rubric. The sentences, the rubric and every classification are included in the deposited data.

A company-event counts as confirmed when any of its sentences describes input use. Overall, 75% of exposed company-events were confirmed (95% CI 69% to 80%; Supplementary Table S10), with confirmation highest for the nickel events (78% and 90%) and lowest for gallium and germanium (49%) and rare earths (57%), where flagged sentences more often describe products sold, competing technologies or market conditions. Dropping the exposed company-events whose sentences were all coded as not describing input use leaves 182 exposed company-events and gives an estimate of -0.078 (95% CI -0.119 to -0.037; $P < 0.001$). An earlier pilot audit (60 sentences, 12 for each of rare earths, gallium, graphite, antimony and tungsten) led to the exclusion of "yttrium-90", a radioisotope, from the rare-earth dictionary.

Supplementary Note 4: Events, windows and the supplier-data horizon

Inclusion rule. We include every export ban, quota or licensing requirement on a critical mineral imposed between 2010 and 2025 by the country that was then the world's largest producer of that mineral, whose date of effect can be established from official texts (Supplementary Table S8): China (rare earths; gallium and germanium; graphite; antimony; tungsten, tellurium, bismuth, molybdenum and indium; seven medium and heavy rare earths), Indonesia (nickel ore) and the Democratic Republic of the Congo (cobalt). Restrictions by countries that were not the largest producer (for example Zimbabwe's 2022 ban on lithium-ore exports and Indonesia's bauxite bans) fall outside the rule, as do China's October 2025 rare-earth announcements, which were suspended in November 2025 and lie beyond the data.

Windows. Each stack covers fiscal years $Y_e - 5$ to $\min(Y_e + 4, \text{end}_e)$, where the end year precedes any lifting or relaxation of the measure: the 2010 rare-earth stack ends in fiscal 2014, before the quotas were abolished in January 2015, and the 2014 nickel stack ends in fiscal 2016, before the January 2017 relaxation. The liftings are used separately as reversal tests (Supplementary Table S12).

Supplier-data horizon. FactSet Revere relationships end in February 2025. Supplier-base measures are therefore defined through calendar 2024 (links active on 31 December 2024 and links started during 2024) and are missing from calendar 2025 on, so the three restrictions of 2025 have no observable aftermath in the supplier data and enter only the exposure counts.

Supplementary Note 5: Inference with few restriction events

The main estimate clusters standard errors by company, the level at which exposure is assigned (5,199 clusters). Identification, however, comes from six restriction events, and a shock common to the exposed companies of one event would make company-clustered errors too small. We therefore also treat the events as the units of inference (script `05m_few_clusters.py`; Supplementary Table S24 and Supplementary Fig. S4). Conventional cluster-robust (CR1) standard errors with six event clusters and a $t(5)$ reference distribution give $P = 0.021$, but this estimator over-rejects when clusters are few[1,2]. Methods designed for that case give P values between 0.039 and 0.094: the bias-reduced CR2 variance with the degrees of freedom of Imbens and Kolesár (2.5 degrees of freedom; 95% CI -0.137 to 0.010; $P = 0.068$)[2,3]; the wild cluster restricted bootstrap-t with the null imposed[1,4], enumerating all $6^6 = 46{,}656$ draws of Webb's six-point weights[5] ($P = 0.092$; 95% CI by inversion of the bootstrap test -0.142 to 0.014) and all 64 Rademacher draws ($P = 0.094$); a leave-one-event-out jackknife ($P = 0.039$); and, on the six per-event estimates of Fig. 2c, the t test of Ibragimov and Müller[6] ($P = 0.050$) and the randomization test over all 64 sign changes of Canay, Romano and Shaikh[7] ($P = 0.063$), beside the random-effects meta-analysis reported in the main text ($P = 0.068$). Pooling the two Indonesian nickel bans, which share most of their exposed companies, into one cluster leaves five clusters and similar P values (CR2, $P = 0.069$; wild bootstrap with Webb weights, $P = 0.10$); with five clusters, Rademacher weights allow only 32 distinct draws, the smallest attainable P value is 0.0625, and the bootstrap gives $P = 0.19$.

Three features of these calculations bear on their reading. First, because the company-by-event and year-by-event fixed effects are nested within events, the bootstrap residuals need no new projection on the fixed effects, and each bootstrap statistic is a closed-form function of event-level scores[8]; every draw could therefore be enumerated, so the bootstrap P values carry no simulation error, and the same nesting makes the CR2 adjustment computed with the fixed effects absorbed exact[3]. Second, with six clusters the smallest attainable two-sided P value is 0.031 for Rademacher weights and for the sign-change test, so these tests cannot reject strongly whatever the data. Third, comparison companies recur in every stack, so the event clusters are not strictly independent; the event-level calculations are sensitivity analyses for the small number of events rather than replacements for company-clustered inference. Taken together, they place the evidence at the border of conventional significance once the number of restrictions is taken as the effective sample size, which is how the main text describes it.

Supplementary Note 6: Headquarters, operating subsidiaries and owners of suppliers

The outcome attributes each supplier to the country of its headquarters. We use the headquarters because the outcome is meant to capture the enforcement environment of contracting parties: FactSet records relationships between companies, and the jurisdiction whose courts, contract law and corporate law govern a supplier as a legal entity is the one in which a buyer's contractual and due-diligence claims against it would typically have to be enforced, even where a contract names another governing law or seat of arbitration. The headquarters is not necessarily where a supplier mines, refines or manufactures, nor where its owners are. We examine how much these differences could matter with what FactSet records beyond the headquarters (script `01p_factset_owner_stage.py`; Supplementary Tables S25 and S26; Supplementary Fig. S5).

Four records are available. (i) Addresses: besides the headquarters, FactSet records secondary, incorporation and regional addresses. 92% of supplier-years (76% for suppliers in China and Hong Kong) have all their recorded addresses in the headquarters country, and 82% of the suppliers in China with an address abroad have one in the Cayman Islands, Bermuda or the British Virgin Islands, typically their place of incorporation; where legal domicile and headquarters differ, the headquarters is therefore the better guide to where a supplier operates. These records do not locate plants. (ii) Parents: 8.8% of supplier-years belong to a supplier that FactSet names as the subsidiary of another company; 31% of these parents are headquartered in another country, and 92% of the parents of suppliers in China are themselves in China or Hong Kong. (iii) Operating subsidiaries: for 3.5% of supplier-years, FactSet identifies as a company the subsidiary of the supplier through which a relationship runs, and 33% of these subsidiaries lie outside the supplier's headquarters country. (iv) Corporate owners: where no parent is named, FactSet's investor and equity-investment relationships disclose a company with operating products (not a bank, asset manager, clearing nominee or government) that holds equity in the supplier for 30% of supplier-years; such holders are often minority shareholders, so this is the loosest of the four records.

Re-attributing suppliers to operating subsidiaries or parents leaves the main estimate similar: -0.063 ($P = 0.002$) with each supplier counted once at its headquarters (the reference, which differs from Table 1 only in counting each supplier once rather than each relationship record), -0.061 ($P = 0.003$) with operating subsidiaries and -0.067 ($P < 0.001$) with parents. Attributing suppliers to parents or, failing those, corporate equity holders gives a smaller estimate, -0.045 (95% CI -0.081 to -0.009; $P = 0.015$), consistent with minority holders in well-governed countries diluting the measure. Plant locations are not observed. For the processing routes most relevant here, attributing a supplier to its plant rather than its headquarters would not change which side of the world mean it falls on: Chinese companies or shareholders ultimately control at least three-quarters of Indonesia's nickel refining capacity[9], and both China and Indonesia have rule-of-law estimates below the world mean (averages over 2010 to 2023 of -0.29 and -0.39). The outcome is nonetheless best read as the jurisdiction of contracting parties, not of production sites or ultimate owners.

Supplementary Note 7: The processing hub: nickel intermediates and the stage of added suppliers

The processing-hub view in the Introduction implies that, when a restriction cuts off a raw material, dependent companies that cannot refine it themselves turn to processed intermediates or components bought from companies that control midstream capacity. Two pieces of evidence bear on this implication (Supplementary Fig. S6).

Nickel. Indonesia's bans on unprocessed ore were designed to move refining into Indonesia. China's customs records show how its supply adjusted (script `01q_nickel_processing.py`; Supplementary Table S28). Imports of Indonesian nickel ore fell from 41 million tonnes (US$3.0 billion) in 2013 to less than 0.2 million tonnes in 2015, recovered while the ban was relaxed and have stayed below 1.1 million tonnes a year since 2021. Imports of Indonesian ferro-nickel and nickel pig iron, nickel mattes and other intermediate products rose over the same period from US$0.1 billion in 2013 to US$24 billion in 2025, when Indonesia supplied 94% of China's ferro-nickel imports. Together with Chinese control of most of Indonesia's nickel refining capacity[9], this is consistent with the bans having moved the refining step without moving processed nickel out of a supply chain centred on Chinese companies; the series are descriptive, in current dollars, and ore imports recovered while the ban was relaxed (2017 to 2019).

Stage of added suppliers. We classified each supplier by the RBICS paths of its products as midstream (refining and processing: primary metals and inorganic chemicals), upstream (extraction: metal-ore and nonmetallic-mineral mining), components (electronic components; products naming semiconductors, batteries or magnets; metal parts; electrical components) or other goods and services, with priority in that order (Supplementary Table S27). After a restriction, exposed companies added detectably more Chinese makers of components (31% more per year; $P = 0.023$) and of other goods and services (53%; $P = 0.001$), whereas additions of Chinese refiners and processors did not rise detectably (12%; $P = 0.54$) and additions of Chinese mining companies were too rare to estimate meaningfully (6 after the events). The midstream estimate is imprecise, and its interval includes the components estimate, so the stages are not shown to differ from one another. The midstream share of the Chinese suppliers that exposed companies added was similar before and after the events (22% and 19%), and higher than among comparison companies (8% and 7%). Chinese-controlled smelters in Indonesia are headquartered in Indonesia and so would not count as Chinese; attributing midstream suppliers with a parent in China to China changes nothing (12%; $P = 0.54$), because none of the midstream suppliers that exposed companies added outside China after the events, including 15 in Indonesia after the nickel bans, has a parent in China recorded in FactSet. In the supplier data, therefore, the pull of the hub is detectable through components and manufactured inputs but not through refined materials bought directly; refined materials may still reach these companies through their component suppliers, which the data do not follow.

Supplementary Note 8: Policy shock or secular trend

The supply chains of US companies may have been moving towards China, and towards weaker rule of law, regardless of export restrictions. Such a secular trend is visible in the data: the mean China share of comparison companies' disclosed suppliers rose from 1.5% in 2005 to 7.6% in 2024 (script

05o_trend_vs_shock.py; Supplementary Fig. S7a), in part because FactSet extended its coverage over the period (to European public companies from 2011, Asian from 2013, African and Middle Eastern from 2014 and Latin American from 2016) and from then on recorded the relationships that these companies disclose. The design removes this trend to the extent that it is common to exposed and comparison companies, because each event is compared within the same calendar years through year-by-event fixed effects. In event time, the China share of comparison companies drifted up at a steady pace before and after the restrictions, whereas that of exposed companies was flat before a restriction and rose after it, by 5.4 percentage points two years later against 1.2 for comparison companies (Supplementary Fig. S7b).

Trends specific to exposed companies. A trend specific to exposed companies, for instance because metal-using manufacturers were moving production to China faster than other companies, would not be removed by the year-by-event fixed effects. Four checks address it (Supplementary Table S29 and Supplementary Fig. S7c). (i) With a separate linear trend for every company-event, estimated over the whole window, the estimate is -0.055 (95% CI -0.107 to -0.003; $P = 0.040$). (ii) Because a trend fitted over the whole window also absorbs part of an effect that grows over time, we also fit each company-event's linear trend over its pre-restriction years only, extrapolate it and subtract it, which gives -0.110 ($P = 0.012$; 163 exposed company-events with at least three pre-restriction years). This estimate is larger and more precise than the extrapolation of the common trend of the event-study leads in the main text (-0.094; $P = 0.066$), because each company-event's slope enters as noise in its own outcome rather than as one imprecise parameter extrapolated for all, and because it drops company-events with fewer than three pre-restriction years; we therefore do not interpret its magnitude. (iii) Industry-by-year-by-event fixed effects, which absorb trends specific to two-digit industries, give -0.062 ($P = 0.002$), and pre-event China supplier share and supply-base size interacted with year-by-event fixed effects, which absorb trends that differ with existing ties to China, give -0.066 ($P = 0.001$). (iv) A secular trend would not reverse on cue: when China lifted its rare-earth quotas in 2015, the supply bases of the companies exposed in 2010 moved back towards stronger rule of law (0.131; $P = 0.020$), and moving each event three years earlier gives no detectable change (0.020; $P = 0.46$).

Coverage of the supplier data. Expansions of FactSet's coverage add suppliers to the data in particular years, and they could raise the China share of exposed companies more than that of comparison companies if exposed companies have more Asian suppliers. Three checks bear on this. In the events whose windows begin after FactSet's coverage of Asian companies began (Indonesia's 2020 ban and China's 2023 and 2024 licensing), the estimate is -0.065 ($P = 0.035$); within the 2010 rare-earth stack, the decline was already present in fiscal 2010 to 2012, before that coverage began (-0.131; $P = 0.073$), and of similar size in 2013 and 2014 (-0.151; $P = 0.032$). The third check holds the supplier universe fixed at each event. Counting only suppliers that FactSet already covered as companies, in any relationship, before the year of the event gives a smaller estimate, -0.038 (95% CI -0.078 to 0.001; $P = 0.055$), and counting only suppliers that FactSet had already recorded as someone's supplier gives -0.024 (-0.063 to 0.015; $P = 0.23$). Part of the decline therefore comes from suppliers that entered the data after the restriction. These checks exclude genuinely new suppliers as well as additions to coverage, newly founded or newly listed companies among them, so they bound the role of coverage from above rather than measure it; the data cannot tell the two apart.

What remains open. Companies naming only unrestricted base metals also drifted towards weaker

rule of law relative to companies naming no metal (-0.023; $P = 0.029$), by about a third as much as exposed companies, and the difference between the two groups is not statistically clear (main text). Part of the decline may therefore reflect a broader shift of metal-using companies' supply chains, which the design removes only to the extent that it is shared with comparison companies.

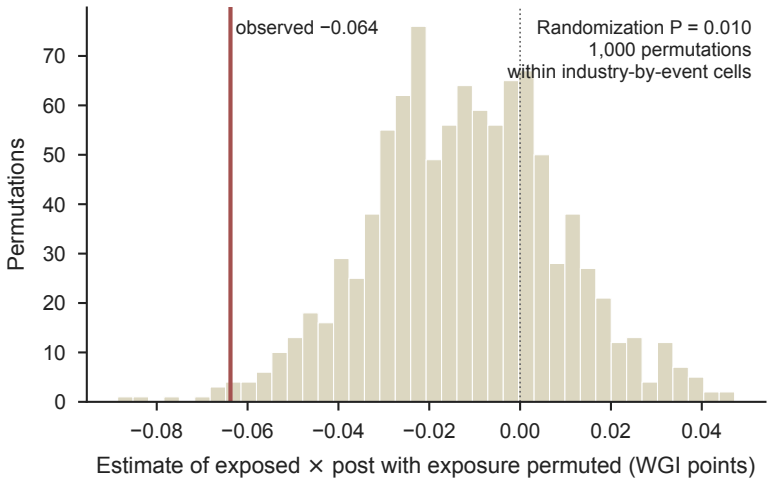


Figure S1. Randomization inference for the main estimate. Distribution of the coefficient on exposed × post (Table 1, column 2) when exposure is permuted 1,000 times among companies within industry-by-event cells, re-estimated each time with the same fixed effects and controls; red line, the observed estimate. Two-sided randomization $P = (1 + \#\{|\hat{\beta}^*| \geq |\hat{\beta}|\})/(1 + \text{permutations}) = 0.010$.

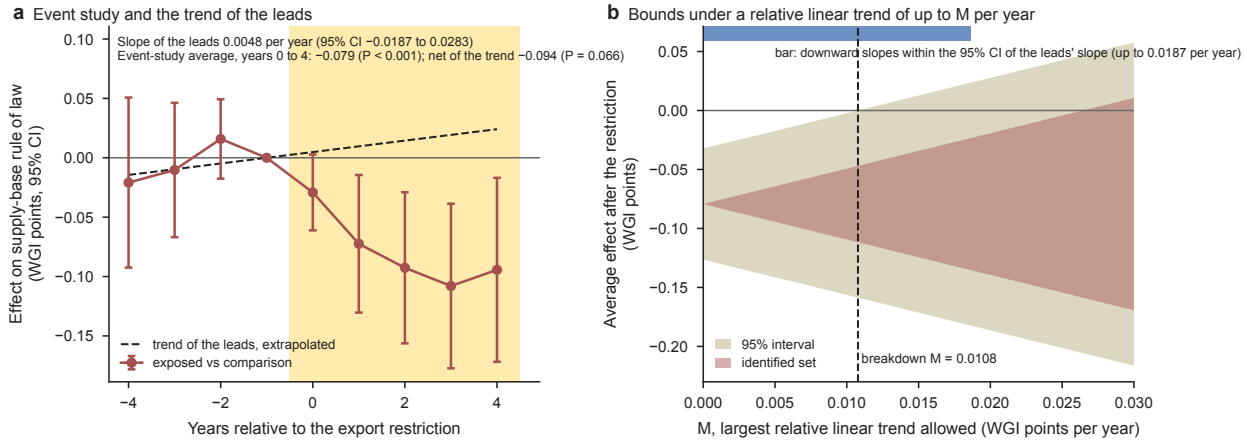


Figure S2. Sensitivity of the main estimate to a pre-existing linear trend. a, Stacked event study of supply-base rule of law (as Fig. 2b) with the linear trend through the three lead coefficients, anchored at year -1, extrapolated forward (dashed). **b**, Bounds on the average effect over years 0 to 4 if the supply bases of exposed companies followed a linear trend of up to M WGI points per year relative to comparison companies: identified set (dark band) and its 95% confidence interval (light band). Dashed line, breakdown value $M = 0.0108$, the smallest trend at which the interval includes zero; blue bar, downward slopes within the 95% confidence interval of the slope through the leads (-0.0187 to 0.0283 points per year). The bounds follow the logic of ref. 10, restricted to linear trends.

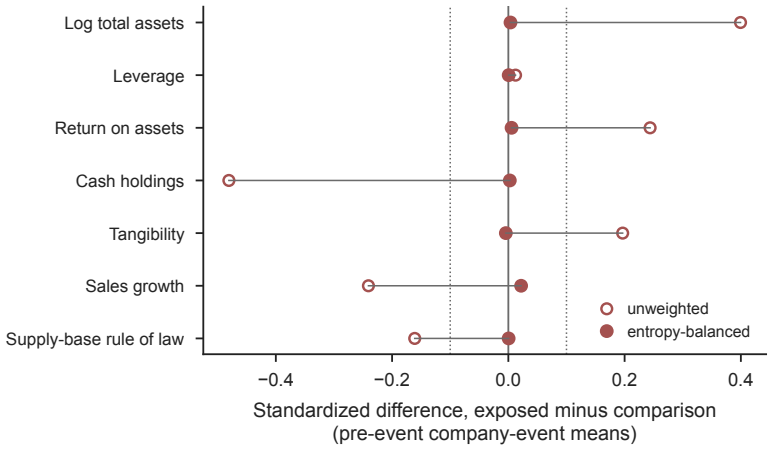


Figure S3. Covariate balance before and after entropy balancing. Standardized differences (difference in means over the pooled standard deviation) between exposed and comparison company-events in the pre-event means of the lagged controls and of the outcome, without weights (open circles) and with the entropy-balancing weights of Table 1, column 4 (filled circles); dotted lines, ± 0.1. For the pooled comparison, each event's comparison weights are scaled to its number of exposed company-events; the 2024 antimony event, with two exposed companies, is not reweighted.

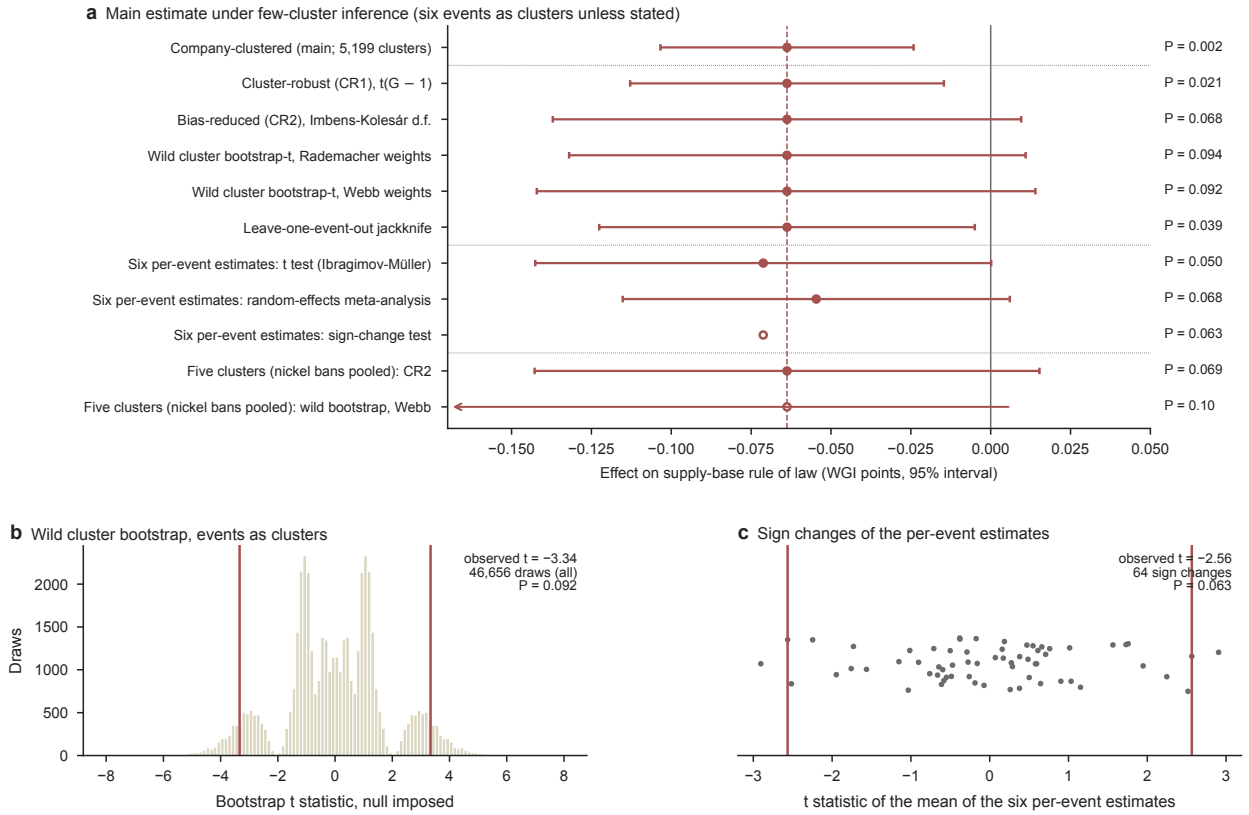


Figure S4. Inference with the restriction events as clusters. a, Main estimate (Table 1, column 2) with 95% intervals and two-sided P values: standard errors clustered by company; six event clusters with conventional cluster-robust errors (CR1, $t(5)$), the bias-reduced CR2 variance with Imbens-Kolesár degrees of freedom, the wild cluster restricted bootstrap-t with Rademacher (all 64 draws) and Webb (all 46,656 draws) weights, intervals by inversion of the bootstrap test, and a leave-one-event-out jackknife; tests on the six per-event estimates of Fig. 2c (Ibragimov-Müller t test, random-effects meta-analysis and the Canay-Romano-Shaikh sign-change test, which gives no interval; open marker); and five clusters with the two nickel bans pooled (open marker and arrow: bootstrap interval unbounded below). Dashed line, main estimate. **b**, Bootstrap distribution of the t statistic with the null imposed, all 6^6 Webb draws; red lines, $\pm$ the observed t. **c**, t statistic of the mean of the six per-event estimates under each of the 64 sign changes (points jittered vertically); red lines, $\pm$ the observed value. Supplementary Note 5.

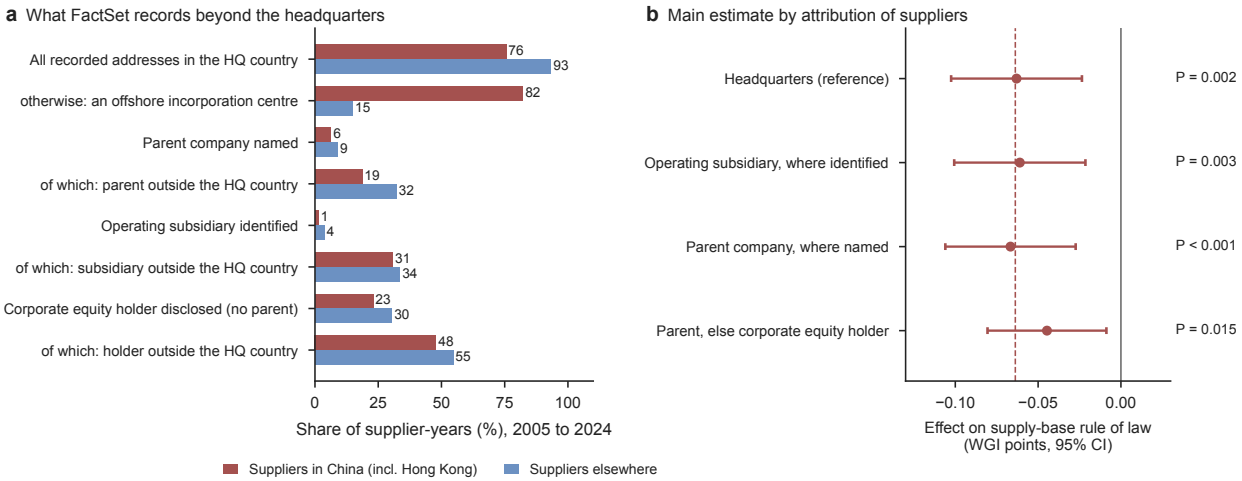


Figure S5. Supplier location beyond the headquarters. a, Share of supplier-years (active links of Compustat-matched customers, 2005 to 2024) for which all addresses recorded by FactSet (headquarters and secondary, incorporation or regional addresses) lie in the headquarters country, and, for the rest, the share with an address in the Cayman Islands, Bermuda or the British Virgin Islands; and the share for which FactSet records a parent company, an operating subsidiary through which a relationship runs, or a corporate equity holder with operating products (when no parent is named), with the share of these located outside the supplier's headquarters country; suppliers in China (including Hong Kong) and elsewhere. **b**, Main estimate with supply-base rule of law computed from each supplier's headquarters (one value per supplier), from the headquarters of its operating subsidiary where identified, of its parent where named, and of its parent or, failing that, its corporate equity holder; error bars, 95% confidence intervals (standard errors clustered by company); dashed line, main estimate. Supplementary Note 6 and Supplementary Tables S25 and S26.

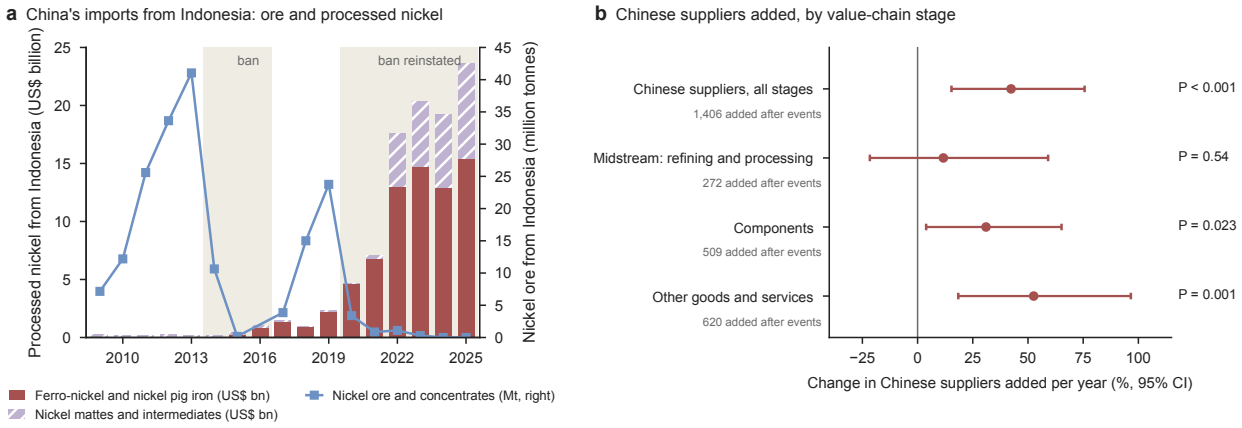


Figure S6. Processing hub: Indonesian nickel and the stage of added suppliers. a, China's imports from Indonesia of nickel ores and concentrates (HS 2604; million tonnes, right axis; 2016 quantity missing in the source) and of processed nickel (bars, US$ billion): ferro-nickel including nickel pig iron (HS 720260) and nickel mattes and other intermediate products (HS 7501); shading, ore-export bans in force (January 2014 to December 2016; from January 2020). Source: RESSET all-port customs data. **b**, Change in the number of Chinese (including Hong Kong) suppliers added per year by exposed companies after a restriction, relative to comparison companies, by value-chain stage of the supplier (RBICS products): Poisson pseudo-maximum-likelihood estimates with lagged controls and company-by-event and year-by-event fixed effects, expressed as % change; error bars, 95% confidence intervals (standard errors clustered by company); grey, number added by exposed companies after the events. Upstream mining suppliers (6 added) are in Supplementary Table S27. Supplementary Note 7.

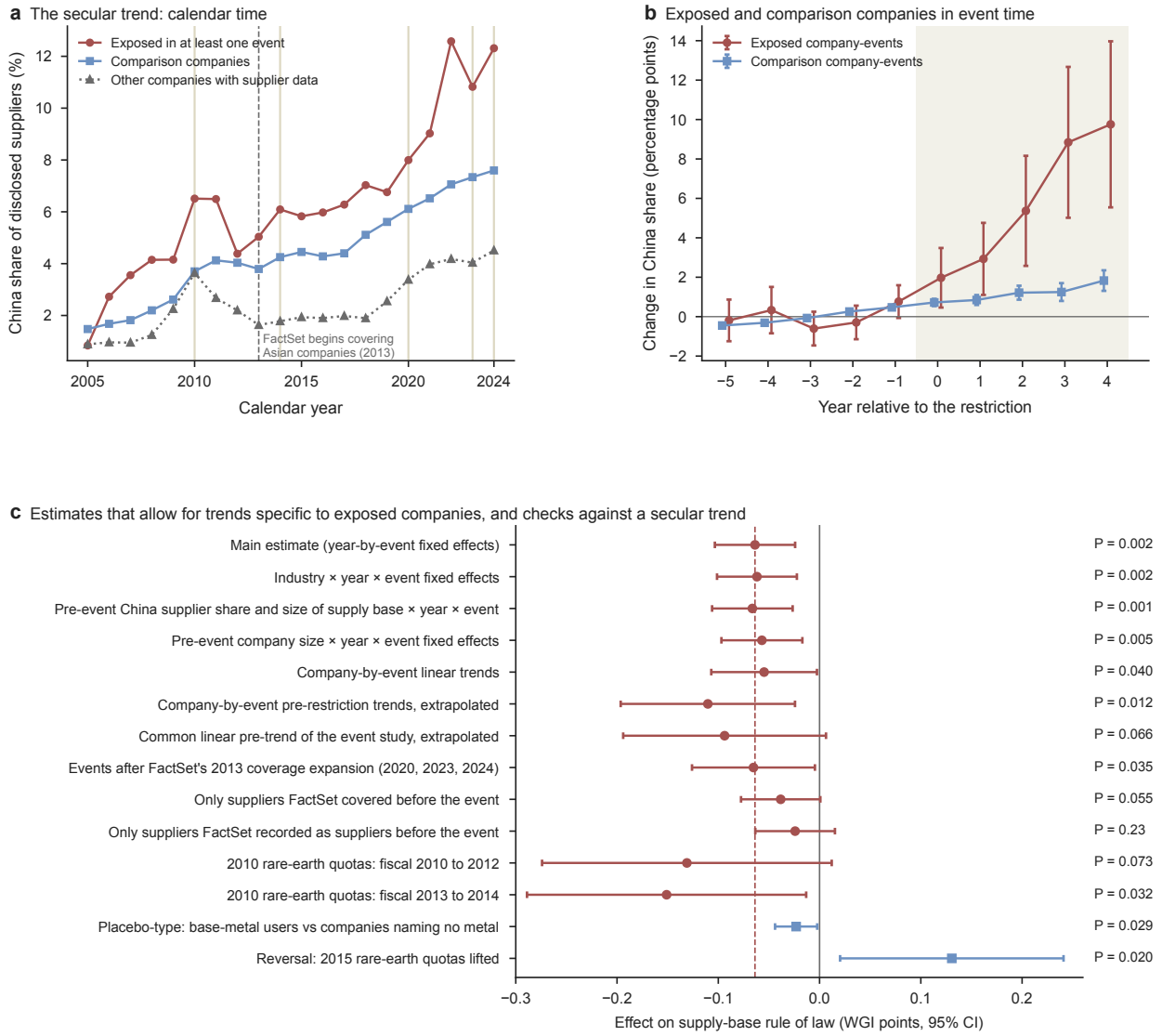


Figure S7. Policy shock or secular trend. a, Mean share of disclosed suppliers headquartered in China (including Hong Kong) by calendar year, for companies exposed in at least one of the six events, comparison companies and all other Compustat companies with FactSet suppliers; vertical lines, years in which the six restrictions took effect; dashed line, 2013, when FactSet began covering Asian public companies. **b**, Change in the China share relative to each company-event's own pre-restriction mean, by year relative to the restriction, for exposed and comparison company-events (six events pooled; means with 95% confidence intervals; no controls or fixed effects); shading, years after the restriction. **c**, Estimates of the effect on supply-base rule of law that allow for trends specific to exposed companies, with checks against a secular trend and against changes in the coverage of the supplier data (only suppliers that FactSet covered, or had recorded as suppliers, before the event): red circles, estimates for exposed companies; blue squares, base-metal users (a smaller drift expected under a trend common to metal users) and the reversal at the 2015 lifting of China's rare-earth quotas (opposite sign expected if the quotas caused the decline); error bars, 95% confidence intervals (standard errors clustered by company); dashed line, main estimate. Supplementary Note 8 and Supplementary Table S29.

Table S1. Theoretical constructs and their measurement. For each construct: the definition used, the proxy and its source, what the proxy directly records and what we use it to represent, and the validity evidence.

Construct	Definition	Proxy (source)	Records → represents	Validity evidence
Export restriction (shock)	A producing country's legal limit on exports of a critical mineral (quota, licence requirement, ban)	Fiscal year of effect of nine dated measures, six with an observable aftermath in the supplier data (official announcements; Supplementary Table S8)	An official measure and its date → reduced, less reliable access for foreign buyers	China's exports fell to 3% of prior levels for gallium and germanium and to 3% for antimony, while graphite exports did not fall visibly; China's imports of Indonesian nickel ore fell from 41 Mt in 2013 to less than 0.2 Mt in 2015; the gap between export and domestic prices of rare earths widened by 0.35 log points between 2011 and 2013 (other minor metals 0.06) and closed after the 2015 lifting (Fig. 1)
Mineral input dependence (exposure)	The extent to which a company's products require a mineral it must procure [11]	$\geq$2 of 5 pre-event annual reports mention the mineral together with an input/supply word (10-K/20-F text)	Management's written description of the mineral as something the company buys or needs → input dependence	6 to 20 times more FactSet links to producers of the mineral in 11 of 15 mineral-period cells; 75% vs 21% Form SD filing for tin, tantalum and tungsten; 75% of exposed company-events confirmed as input users in an audit of every exposed company-event ($\kappa = 0.90$); no detectable dose-response in the number of reports (Supplementary Tables S9 and S10)
Supply-base governance quality (outcome)	The institutional enforcement environment (rule of law) of the jurisdictions in which a company's suppliers are headquartered [12]	Mean WGI rule-of-law estimate of the headquarters countries of suppliers active on 31 December (FactSet Revere $\times$ WGI)	Domicile of disclosed suppliers → exposure of the supply base to weaker legal enforcement of environmental, labour and contract standards (not supplier conduct, not production location)	Same result with control of corruption and with country scores held fixed (composition only); no detectable change in customers' countries (placebo); the change comes from China-headquartered suppliers (Supplementary Tables S11, S12 and S14)
Supply-base agility (exploratory condition)	The capacity to reconfigure a supply base quickly by forming new supplier relationships [13]	New supplier relationships per active supplier, pre-event mean (FactSet Revere)	Rate of disclosed relationship formation → habitual speed of supplier reconfiguration	Similar with supplier churn; not with ln(1 + new links); smaller and imprecise with $\geq$3 suppliers; one half of the sample only; $q = 0.32$ (Supplementary Tables S17 and S18)
Pricing power (exploratory condition)	The ability to set prices above input costs and pass cost increases to customers	Within-industry-year percentile of gross margin, pre-event mean (Compustat)	Markup of price over input cost relative to industry peers → headroom to absorb costlier, better-governed supply	Interaction not significant ($P = 0.063$); significant with gross margin clipped to $[-1, 1]$ ($P = 0.036$); not for operating margin; $q = 0.36$ (Supplementary Tables S17 and S18)
Supplier search (exploratory process)	Organizational search for alternative sources of supply	Sentences per 1,000 combining supply-chain words with alternative/additional/new-supplier or diversification words (10-K/20-F text)	Disclosure of efforts to qualify or add suppliers → intensity of the search for alternative suppliers	Rise after restrictions ($P = 0.002$) not distinct from the extrapolated pre-trend ($P = 0.80$); leads borderline ($P = 0.055$); $q = 0.09$ (Supplementary Tables S16 and S18)
Controls	Size, leverage, profitability, liquidity, asset tangibility, growth	Lagged ln assets, debt/assets, OIBDP/assets, cash/assets, PP&E/assets, sales growth (Compustat)	Standard accounting ratios → rival explanations through scale, financing and growth	Main estimate unchanged without controls (Table 1, column 1) and with contemporaneous controls (Supplementary Table S11)

Table S2. Variable dictionary (69 variables).

Variable	Role	Construction	Source
Exposed company	Treatment	1 if at least 2 of the 5 pre-event annual reports name the restricted mineral together with an input, supply, price or shortage word	10-K/20-F text
Post-restriction year	Treatment	1 for fiscal years from the year the restriction took effect	Shock catalogue
Exposed × post	Treatment	Exposed company × post-restriction year	Derived
Dependence reports	Exposure intensity	Number of pre-event reports naming the mineral as an input (0 to 5)	10-K/20-F text
Dependence intensity	Exposure intensity	Input-related mentions of the mineral per 1,000 sentences, pre-event mean	10-K/20-F text
China-linked dependence	Exposure intensity	Number of pre-event reports naming the mineral together with China	10-K/20-F text
Event year	Shock	Fiscal year in which the restriction took effect	Shock catalogue
China export volume index	First stage (mineral level)	China's monthly exports (kg), three-month mean, mean of the 12 preceding months = 100	RESSET customs
Export minus domestic price	First stage (mineral level)	Log free-on-board export price (USD) minus log domestic price converted at CNY per USD, relative to its 2005 to 2009 mean	Datastream; FRED
China's nickel-ore imports from Indonesia	First stage (mineral level)	Imports of HS 2604 (nickel ores and concentrates) by partner, tonnes	RESSET customs
Supply-base rule of law	Outcome	Mean WGI rule-of-law estimate of the headquarters countries of the suppliers active on 31 December	FactSet Revere, WGI
Rule of law of new suppliers	Outcome (alternative)	Mean WGI rule-of-law estimate of the headquarters countries of suppliers first linked in the year	FactSet Revere, WGI
Supply-base control of corruption	Outcome (alternative)	Mean WGI control-of-corruption estimate of the suppliers' headquarters countries	FactSet Revere, WGI
Supply-base rule of law, scores fixed	Outcome (composition only)	Supply-base rule of law with each country's score held at its 2005 to 2023 mean	FactSet Revere, WGI
Supply-base rule of law outside China	Outcome (decomposition)	Supply-base rule of law over suppliers outside China and Hong Kong	FactSet Revere, WGI
Rule of law, links disclosed by the company	Outcome (disclosure)	Supply-base rule of law over links disclosed by the company itself	FactSet Revere, WGI
Rule of law, links disclosed by others	Outcome (disclosure)	Supply-base rule of law over links disclosed by the supplier or a third party	FactSet Revere, WGI
Customers' rule of law	Placebo outcome	Mean WGI rule-of-law estimate of the headquarters countries of the company's customers	FactSet Revere, WGI
Share of suppliers in weaker rule of law	Outcome (alternative)	Share of suppliers headquartered in countries with rule of law below the world mean	FactSet Revere, WGI
China share of suppliers	Decomposition	Suppliers headquartered in China or Hong Kong over all suppliers	FactSet Revere
China share of new suppliers	Decomposition	New suppliers in China or Hong Kong over all new suppliers with a governance score	FactSet Revere, WGI
Other weaker rule-of-law share of new suppliers	Decomposition	As above, for countries outside China with rule of law below the world mean	FactSet Revere, WGI
Stronger rule-of-law share of new suppliers	Decomposition	As above, for countries with rule of law at or above the world mean	FactSet Revere, WGI
New Chinese suppliers, materials value chain	Decomposition (count)	Suppliers in China or Hong Kong first linked in the year whose products lie under Materials or name semiconductors, electronic components, batteries or magnets	FactSet Revere (RBICS)
New Chinese suppliers, other industries	Decomposition (count)	Other suppliers in China or Hong Kong first linked in the year	FactSet Revere (RBICS)
New suppliers in the US, FTA partners or Japan	Decomposition (count)	Suppliers first linked in the year headquartered in the United States, a US free-trade partner or Japan	FactSet Revere
New suppliers in foreign entities of concern	Decomposition (count)	Suppliers first linked in the year headquartered in China, Hong Kong, Macao, Russia, Iran or North Korea	FactSet Revere
Share of suppliers in the US, FTA partners or Japan	Decomposition	Share of active suppliers headquartered in the United States, a US free-trade partner or Japan	FactSet Revere
Share of suppliers in foreign entities of concern	Decomposition	Share of active suppliers headquartered in China, Hong Kong, Macao, Russia, Iran or North Korea	FactSet Revere
Chinese suppliers dropped	Other outcome	Log (1 + suppliers in China or Hong Kong whose relationship ends in the year)	FactSet Revere
Number of suppliers	Descriptive	Active disclosed suppliers on 31 December	FactSet Revere
Supplier countries	Descriptive	Distinct headquarters countries of active suppliers	FactSet Revere
Country concentration of suppliers	Outcome (alternative)	Herfindahl index of suppliers across headquarters countries	FactSet Revere
Supply-base agility	Condition (exploratory)	New supplier relationships per active supplier, pre-event mean, capped at the 99th percentile	FactSet Revere
Supplier churn	Condition (alternative measure)	New plus ended relationships per active supplier, pre-event mean	FactSet Revere

Variable	Role	Construction	Source
Pricing power	Condition (exploratory)	Percentile rank of gross margin, (sales minus cost of goods sold) over sales, within two-digit industry and fiscal year, pre-event mean	Compustat
Gross margin	Condition (alternative measure)	(Sales minus cost of goods sold) over sales, pre-event mean, untransformed	Compustat
Disclosed supplier search	Annual-report measure (exploratory)	Sentences per 1,000 combining supply-chain words with words for qualifying, adding or diversifying to alternative, second or new suppliers, winsorized at the 1st and 99th percentiles	10-K/20-F text
Supplier search, untransformed rate	Annual-report measure (exploratory)	The same rate before winsorizing (Fig. 5c and the candidate-channel family)	10-K/20-F text
Supply-security attention	Annual-report measure (exploratory)	Mean of the standardized rates of supply-disruption, export-control, geopolitical and supplier-search sentences	10-K/20-F text
Supply-disruption sentences	Annual-report measure (exploratory)	Supply-chain words with disruption words, per 1,000 sentences	10-K/20-F text
Export-control sentences	Annual-report measure (exploratory)	Export control, restriction, ban, licence or quota, per 1,000 sentences	10-K/20-F text
Geopolitical sentences	Annual-report measure (exploratory)	Geopolitics, trade war or tensions, tariffs, sanctions, per 1,000 sentences	10-K/20-F text
Input price volatility sentences	Annual-report measure (exploratory)	Supply-chain or input words with price-volatility words, per 1,000 sentences	10-K/20-F text
Stockpile sentences	Annual-report measure (exploratory)	Stockpiles, safety stocks or buffer inventories, per 1,000 sentences	10-K/20-F text
Responsible-sourcing sentences	Annual-report measure (exploratory)	Responsible sourcing or supply-chain due diligence, per 1,000 sentences	10-K/20-F text
Vertical-integration sentences	Annual-report measure (exploratory)	Vertical integration or in-house production of inputs, per 1,000 sentences	10-K/20-F text
Recycling sentences	Annual-report measure (exploratory)	Recycling, recovery or circularity, per 1,000 sentences	10-K/20-F text
Long-term supply agreement sentences	Annual-report measure (exploratory)	Long-term supply or offtake agreements, per 1,000 sentences	10-K/20-F text
Supply chain and China sentences	Annual-report measure (exploratory)	Supply-chain words with China, per 1,000 sentences	10-K/20-F text
Domestic-sourcing sentences	Annual-report measure (exploratory)	Domestic sourcing, reshoring or nearshoring, per 1,000 sentences	10-K/20-F text
Substitution sentences	Annual-report measure (exploratory)	Substitution of materials or inputs, per 1,000 sentences	10-K/20-F text
Raw-material inventories	Other outcome	Log (1 + raw-material inventories, USD million)	Compustat
Patents	Other outcome	Log (1 + patents granted, by filing year)	KPSS patent data
Materials patents	Other outcome	Log (1 + patents in materials-related technology classes)	KPSS patent data
Green patents	Other outcome	Log (1 + patents in climate-change mitigation classes, CPC Y02)	KPSS patent data
ESG incidents	Other outcome	Log (1 + environmental and social incidents reported about the company)	RepRisk
Environmental incidents	Other outcome	Log (1 + environmental incidents reported about the company)	RepRisk
China revenue share	Control (robustness)	Share of revenue earned in China or Hong Kong, pre-event mean	FactSet Revere geographic revenue
Exposure confirmed by audit	Validation	1 if a sampled pre-event sentence describes input use of the restricted mineral	10-K/20-F text, classified
Form SD filer	Validation	Filed SEC Form SD (conflict minerals) in the year	SEC EDGAR index
Company size (t-1)	Control	Log total assets	Compustat
Leverage (t-1)	Control	Long-term debt plus debt in current liabilities, over assets	Compustat
Return on assets (t-1)	Control	Operating income before depreciation over assets	Compustat
Cash holdings (t-1)	Control	Cash and short-term investments over assets	Compustat
Tangibility (t-1)	Control	Net property, plant and equipment over assets	Compustat

Variable	Role	Construction	Source
Sales growth (t-1)	Control	Sales over the previous year's sales, minus one	Compustat
R&D intensity	Condition (examined)	Research and development expenditure over assets	Compustat
Industry	Fixed effect	Two-digit SIC code	Compustat

Table S3. Descriptive statistics before the restriction, exposed versus comparison company-events. Means and standard deviations over company-events of each company-event's pre-event average, so each company-event counts once; pre-event means quoted in the text and in Tables 1 and 2 average over pre-event company-years and differ slightly. Std. diff.: difference in means over the pooled standard deviation.

Variable	Exposed mean	s.d.	N	Comparison mean	s.d.	N	Std. diff.
Supply-base rule of law	1.238	0.492	882	1.316	0.385	59,885	−0.177
Rule of law of new suppliers	1.231	0.508	755	1.309	0.396	49,856	−0.173
Supply-base control of corruption	1.117	0.493	882	1.165	0.393	59,885	−0.108
Supply-base rule of law outside China	1.343	0.389	862	1.385	0.286	58,642	−0.121
Share of suppliers in weaker rule of law	0.117	0.200	882	0.068	0.180	59,886	0.260
China share of suppliers	0.060	0.147	886	0.052	0.169	60,449	0.048
China share of new suppliers	0.087	0.207	755	0.059	0.184	49,856	0.140
Other weaker rule-of-law share of new suppliers	0.067	0.172	755	0.033	0.117	49,856	0.232
Stronger rule-of-law share of new suppliers	0.862	0.248	755	0.924	0.195	49,856	−0.280
Supply-base agility	0.757	0.323	1,053	0.778	0.400	75,522	−0.056
Pricing power	0.483	0.254	1,325	0.498	0.273	99,760	−0.059
Disclosed supplier search	0.247	0.333	1,306	0.161	0.302	98,755	0.272
Supply-security attention	0.094	0.801	1,306	−0.082	0.614	98,755	0.246
Supply-disruption sentences	0.895	1.126	1,306	0.809	1.238	98,755	0.073
Export-control sentences	0.319	0.736	1,306	0.158	0.397	98,755	0.272
Geopolitical sentences	1.382	1.777	1,306	1.270	1.683	98,755	0.065
Supplier search, untransformed rate	0.254	0.364	1,306	0.166	0.332	98,755	0.252
Company size (t-1)	6.907	2.353	1,061	5.616	2.804	81,901	0.499
Leverage (t-1)	0.289	0.458	1,061	0.417	1.102	81,901	−0.152
Return on assets (t-1)	0.006	0.516	1,061	−0.310	1.570	81,514	0.270
Cash holdings (t-1)	0.171	0.185	1,061	0.293	0.295	81,901	−0.495
Tangibility (t-1)	0.246	0.175	1,061	0.198	0.218	81,847	0.242
Sales growth (t-1)	0.152	0.714	1,017	0.283	1.179	70,541	−0.134
Number of suppliers	11.590	19.733	886	12.376	30.689	60,449	−0.030
Supplier countries	4.410	4.644	886	3.729	4.876	60,449	0.143
Dependence reports	4.045	1.144	1,345	0.000	0.000	105,755	4.999
Dependence intensity	0.762	2.095	1,345	0.000	0.000	105,755	0.515
China-linked dependence	0.264	0.979	1,345	0.000	0.000	105,755	0.381
R&D intensity	0.051	0.134	1,345	0.120	0.281	105,755	−0.314

Table S4. Correlations among analysis variables (pre-event company-event means).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) Supply-base rule of law	1.00											
(2) China share of suppliers	-0.67	1.00										
(3) China share of new suppliers	-0.66	0.91	1.00									
(4) Agility	-0.03	0.02	0.01	1.00								
(5) Pricing power	0.01	-0.04	-0.03	0.01	1.00							
(6) Supplier search	-0.01	-0.02	-0.02	-0.01	0.05	1.00						
(7) ln assets	-0.09	0.04	0.02	0.06	0.13	0.03	1.00					
(8) Leverage	0.00	-0.03	-0.03	0.01	-0.05	-0.06	-0.35	1.00				
(9) ROA	-0.04	0.04	0.03	0.00	0.13	0.06	0.55	-0.63	1.00			
(10) Cash	0.04	0.01	0.01	-0.05	-0.04	0.06	-0.36	-0.01	-0.21	1.00		
(11) Tangibility	-0.06	0.02	0.02	-0.03	-0.00	-0.06	0.26	0.02	0.12	-0.42	1.00	
(12) Sales growth	-0.02	0.03	0.03	0.02	-0.06	0.03	-0.16	-0.00	-0.12	0.21	-0.10	1.00

Table S5. Full estimates for Table 1. Every coefficient of the seven models of Table 1 (dependent variable: supply-base rule of law), with standard errors clustered by company in parentheses and two-sided P values. Beneath the exposure coefficient: its standard error and P value when errors are clustered by two-digit SIC industry or two-way by company and fiscal year. Fixed effects absorb company-by-event and year-by-event means, so the controls are identified from within-company changes.

	(1) FE only	(2) + controls	(3) + ind.×yr×ev.	(4) Entropy-bal.	(5) Exposure $K = 1$	(6) Exploration	(7) Confirmation
Exposed × post	−0.064	−0.064	−0.062	−0.079	−0.059	−0.047	−0.083
	(0.020)	(0.020)	(0.020)	(0.021)	(0.019)	(0.026)	(0.031)
P	0.001	0.002	0.002	<0.001	0.002	0.072	0.008
s.e. [P], two-digit industry clusters	0.020 [0.002]	0.020 [0.002]	0.014 [<0.001]	0.019 [<0.001]	0.018 [0.001]	0.031 [0.130]	0.027 [0.003]
s.e. [P], company and fiscal year clusters	0.020 [0.004]	0.020 [0.004]	0.019 [0.004]	0.020 [<0.001]	0.019 [0.007]	0.025 [0.076]	0.029 [0.010]
Log total assets$_{t-1}$		0.002	0.001	0.002	0.002	0.013	−0.012
		(0.005)	(0.005)	(0.008)	(0.005)	(0.008)	(0.007)
P		0.737	0.847	0.826	0.737	0.102	0.074
Leverage$_{t-1}$		−0.006	−0.008	−0.020	−0.005	0.005	−0.021
		(0.009)	(0.009)	(0.025)	(0.009)	(0.007)	(0.017)
P		0.505	0.382	0.419	0.545	0.429	0.216
Return on assets$_{t-1}$		−0.002	−0.003	−0.014	−0.002	0.001	−0.007
		(0.006)	(0.006)	(0.012)	(0.006)	(0.010)	(0.007)
P		0.669	0.621	0.236	0.675	0.889	0.277
Cash holdings$_{t-1}$		−0.025	−0.019	−0.002	−0.024	−0.001	−0.052
		(0.019)	(0.019)	(0.030)	(0.019)	(0.026)	(0.027)
P		0.193	0.330	0.949	0.209	0.963	0.058
Tangibility$_{t-1}$		0.012	0.019	0.003	0.012	0.036	−0.017
		(0.031)	(0.031)	(0.046)	(0.031)	(0.043)	(0.045)
P		0.695	0.555	0.950	0.689	0.402	0.710
Sales growth$_{t-1}$		−0.001	−0.001	0.000	−0.001	−0.001	−0.002
		(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.002)
P		0.211	0.341	0.823	0.211	0.453	0.320
Lagged controls	No	Yes	Yes	Yes	Yes	Yes	Yes
Company×event FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year×event FE	Yes	Yes	Nested	Yes	Yes	Yes	Yes
Industry×year×event FE	No	No	Yes	No	No	No	No
Entropy-balancing weights	No	No	No	Yes	No	No	No
Clusters: companies	5,199	5,199	5,199	4,973	5,213	2,594	2,605
Clusters: industries; fiscal years	57; 19	57; 19	57; 19	57; 19	57; 19	55; 19	56; 19
Company-event-years	76,477	76,477	76,477	72,661	76,612	38,233	38,244
Exposed company-events	237	237	237	211	268	119	118
Within R^2	0.0005	0.0008	0.0007	0.0010	0.0007	0.0012	0.0023
Mean of dependent variable	1.283	1.283	1.283	1.285	1.283	1.280	1.287
Pre-event s.d. of dependent variable	0.395	0.395	0.395	0.395	0.396	0.398	0.393

Table S6. Full estimates for Table 2. Every coefficient of the six models of Table 2 except the condition-by-year-by-event terms, with standard errors clustered by company in parentheses and two-sided P values. Condition: agility in column 1 and pricing power in column 2, each standardized across company-events. Beneath each coefficient other than the controls: its standard error and P value when errors are clustered by two-digit SIC industry or two-way by company and fiscal year.

	(1) Agility	(2) Pricing power	(3) Both	(4) Search	(5) Search and exposure	(6) Exposure only
Exposed × post	−0.074	−0.063	−0.072	0.058	−0.062	−0.065
	(0.020)	(0.020)	(0.020)	(0.018)	(0.021)	(0.021)
P	<0.001	0.002	<0.001	0.002	0.002	0.002
s.e. [P], two-digit industry clusters	0.017 [<0.001]	0.018 [0.001]	0.016 [<0.001]	0.018 [0.002]	0.021 [0.004]	0.021 [0.003]
s.e. [P], company and fiscal year clusters	0.019 [0.001]	0.020 [0.005]	0.019 [0.002]	0.021 [0.013]	0.020 [0.006]	0.020 [0.005]
Exposed × post × condition	−0.067	0.047				
	(0.031)	(0.025)				
P	0.031	0.063				
s.e. [P], two-digit industry clusters	0.042 [0.114]	0.018 [0.011]				
s.e. [P], company and fiscal year clusters	0.026 [0.021]	0.026 [0.086]				
Exposed × post × agility			−0.063			
			(0.031)			
P			0.042			
s.e. [P], two-digit industry clusters			0.041 [0.127]			
s.e. [P], company and fiscal year clusters			0.027 [0.029]			
Exposed × post × pricing power			0.041			
			(0.025)			
P			0.099			
s.e. [P], two-digit industry clusters			0.016 [0.011]			
s.e. [P], company and fiscal year clusters			0.026 [0.126]			
Disclosed supplier search					−0.042	
					(0.013)	
P					0.001	
s.e. [P], two-digit industry clusters					0.013 [0.002]	
s.e. [P], company and fiscal year clusters					0.014 [0.007]	
Log total assets$_{t-1}$	0.002	0.002	0.002	0.011	0.002	0.002
	(0.005)	(0.005)	(0.005)	(0.004)	(0.006)	(0.006)
P	0.771	0.701	0.736	0.008	0.662	0.726
Leverage$_{t-1}$	−0.006	−0.006	−0.006	−0.005	−0.007	−0.007
	(0.009)	(0.009)	(0.009)	(0.005)	(0.009)	(0.009)
P	0.531	0.477	0.502	0.270	0.447	0.463
Return on assets$_{t-1}$	−0.002	−0.003	−0.002	−0.007	−0.002	−0.002
	(0.006)	(0.006)	(0.006)	(0.003)	(0.006)	(0.006)
P	0.795	0.620	0.741	0.033	0.716	0.755
Cash holdings$_{t-1}$	−0.020	−0.025	−0.021	0.014	−0.026	−0.027
	(0.019)	(0.019)	(0.019)	(0.014)	(0.019)	(0.019)
P	0.287	0.187	0.280	0.329	0.168	0.160
Tangibility$_{t-1}$	0.015	0.013	0.016	0.009	0.009	0.008
	(0.031)	(0.031)	(0.031)	(0.025)	(0.031)	(0.031)
P	0.631	0.668	0.601	0.703	0.778	0.788
Sales growth$_{t-1}$	−0.001	−0.001	−0.001	0.001	−0.001	−0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
P	0.184	0.209	0.180	0.371	0.258	0.243
Lagged controls	Yes	Yes	Yes	Yes	Yes	Yes
Company×event and year×event FE	Yes	Yes	Yes	Yes	Yes	Yes
Condition×year×event FE	Yes	Yes	Yes	No	No	No
Dependent variable	Rule of law	Rule of law	Rule of law	Search	Rule of law	Rule of law
Clusters: companies	5,048	5,195	5,044	5,169	5,169	5,169
Clusters: industries; fiscal years	57; 19	57; 19	57; 19	57; 19	57; 19	57; 19
Company-event-years	73,715	76,371	73,631	75,492	75,492	75,492
Exposed company-events	214	236	213	236	236	236
Within R^2	0.0046	0.0016	0.0054	0.0020	0.0017	0.0008
Mean of dependent variable	1.285	1.283	1.285	0.196	1.283	1.283
Pre-event s.d. of dependent variable	0.395	0.395	0.395	0.326	0.395	0.395

Table S7. Standardized effects of every regressor in the main models. Effect: change in the dependent variable for the stated change in the regressor (one standard deviation in the estimation sample for continuous regressors; from 0 to 1 for exposure; one standard deviation of the pre-event condition for interactions). % of mean: the effect relative to the pre-event mean of the dependent variable among exposed company-events for exposure terms, and relative to its estimation-sample mean otherwise. In s.d.: the effect in pre-event standard deviations of the dependent variable. Standard errors clustered by company. Control variables are lagged one year; their coefficients are not given a causal interpretation.

Model	Dependent variable	Regressor	Coef.	s.e.	P	Change in regressor	Effect	% of mean	In s.d.
Table 1, column 2	Rule of law	Exposed × post	−0.064	0.020	0.002	0 to 1	−0.0638	−5.17	−0.161
Table 1, column 2	Rule of law	Log total assets$_{t-1}$	0.002	0.005	0.737	2.230	0.0041	0.32	0.010
Table 1, column 2	Rule of law	Leverage$_{t-1}$	−0.006	0.009	0.505	0.423	−0.0025	−0.19	−0.006
Table 1, column 2	Rule of law	Return on assets$_{t-1}$	−0.002	0.006	0.669	0.572	−0.0014	−0.11	−0.004
Table 1, column 2	Rule of law	Cash holdings$_{t-1}$	−0.025	0.019	0.193	0.253	−0.0063	−0.49	−0.016
Table 1, column 2	Rule of law	Tangibility$_{t-1}$	0.012	0.031	0.695	0.218	0.0026	0.21	0.007
Table 1, column 2	Rule of law	Sales growth$_{t-1}$	−0.001	0.001	0.211	1.082	−0.0014	−0.11	−0.004
Table 2, column 1	Rule of law	Exposed × post × agility	−0.067	0.031	0.031	1 s.d. of condition	−0.0670	−5.43	−0.170
Table 2, column 2	Rule of law	Exposed × post × pricing power	0.047	0.025	0.063	1 s.d. of condition	0.0473	3.83	0.120
Table 2, column 3	Rule of law	Exposed × post × agility	−0.063	0.031	0.042	1 s.d. of condition	−0.0632	−5.11	−0.160
Table 2, column 3	Rule of law	Exposed × post × pricing power	0.041	0.025	0.099	1 s.d. of condition	0.0413	3.34	0.104
Table 2, column 4	Search	Exposed × post	0.058	0.018	0.002	0 to 1	0.0579	21.48	0.178
Table 2, column 5	Rule of law	Disclosed supplier search	−0.042	0.013	0.001	0.335	−0.0142	−1.11	−0.036

Table S8. Export-restriction events. The catalogue from which the nine restrictions studied were drawn (inclusion rule in Supplementary Note 4). The two rows of 2015 are liftings; the lifting of the rare-earth quotas, like the relaxation of Indonesia's nickel-ore ban from January 2017, is used only in the reversal tests (Supplementary Table S12). The row of December 2024 (Announcement No. 46) bans exports of gallium, germanium and antimony to US end users; it intensifies restrictions already studied and falls inside the windows of the 2023 and 2024 events, so it is not a separate event. Supplier relationships can be followed after the six restrictions of 2010 to 2024; the three of 2025 enter only the exposure counts.

Event	Country	Items	Document	Announced	Effective	Direction
CN2010_REE	CHN	rare earth elements (all)	MOFCOM 2010 second-batch rare earth export quota notice	2010-07-08	2010-07-08	tighten
CN2015_REE_LIFT	CHN	rare earth elements (all)	MOFCOM 2014 Announcement No. 96 (2015 export licence management catalogue); State Council Customs Tariff Commission 2015 No. 3	2014-12-31	2015-01-01	relax
CN2015_W_MO_LIFT	CHN	tungsten, molybdenum	MOFCOM 2014 Announcement No. 96	2014-12-31	2015-01-01	relax
CN2023_GA_GE	CHN	8 gallium-related and 6 germanium-related items (metal, GaN, GaAs, GaP, GaSe, Ga2O3, InGaP; Ge metal, GeO2, GeCl4, ZnGeP2, Ge epitaxial)	MOFCOM-GACC Announcement No. 23 (2023)	2023-07-03	2023-08-01	tighten
CN2023_GRAPHITE	CHN	high-purity/high-strength/high-density synthetic graphite; natural flake graphite and products (spherical, expanded)	MOFCOM-GACC Announcement No. 39 (2023)	2023-10-20	2023-12-01	tighten
CN2024_SB	CHN	antimony ores, raw materials, metal, oxides, compounds; superhard materials	MOFCOM-GACC Announcement No. 33 (2024)	2024-08-15	2024-09-15	tighten
CN2024_US_BAN	CHN	Ga, Ge, Sb, superhard materials to US end users banned in principle; stricter end-use review for graphite to US	MOFCOM Announcement No. 46 (2024)	2024-12-03	2024-12-03	tighten
CN2025_W_TE_BI_MO_IN	CHN	tungsten, tellurium, bismuth, molybdenum, indium related items (ECCN-style codes 1C117, 1C004, 1E004, 1E101.b, 6C002, 6C001)	MOFCOM-GACC Announcement No. 10 (2025)	2025-02-04	2025-02-04	tighten
CN2025_REE_HEAVY	CHN	samarium, gadolinium, terbium, dysprosium, lutetium, scandium, yttrium and their oxides, alloys, compounds, mixtures; NdFeB magnets containing Tb/Dy	MOFCOM-GACC Announcement No. 18 (2025)	2025-04-04	2025-04-04	tighten
ID2014_NI	IDN	nickel ore (unprocessed)	Law 4/2009 (Mining) implementing regulation PP 1/2014	2014-01-12	2014-01-12	tighten
ID2020_NI	IDN	nickel ore	ESDM Regulation 11/2019	2019-08-30	2020-01-01	tighten
CD2025_CO	COD	cobalt (hydroxide, concentrates)	ARECOMS Decision No. 001/ARECOMS/2025	2025-02-22	2025-02-22	tighten

Table S9. Validity of the text-based exposure measure. Convergent: share of companies with an active FactSet supplier whose business classification names the mineral, among companies whose reports name it as an input (exposed) and among all others. Criterion: share filing an SEC Form SD (conflict-minerals report). Ratios of 0 arise where no exposed company had such a supplier (few exposed companies).

Check	Window	Mineral	Companies	Exposed	Share (exposed)	Share (others)	Ratio
Convergent (FactSet producer supplier)	2005 to 2009	Rare earths	3,831	16	0.125	0.009	14.0
Convergent (FactSet producer supplier)	2005 to 2009	Graphite	3,831	12	0.083	0.054	1.5
Convergent (FactSet producer supplier)	2005 to 2009	Tungsten	3,831	15	0.000	0.005	0.0
Convergent (FactSet producer supplier)	2005 to 2009	Lithium	3,831	26	0.038	0.033	1.2
Convergent (FactSet producer supplier)	2005 to 2009	Cobalt	3,831	27	0.074	0.004	20.1
Convergent (FactSet producer supplier)	2005 to 2009	Nickel	3,831	78	0.115	0.015	7.6
Convergent (FactSet producer supplier)	2005 to 2009	Molybdenum	3,831	21	0.143	0.018	7.9
Convergent (FactSet producer supplier)	2016 to 2022	Rare earths	5,641	69	0.087	0.015	5.6
Convergent (FactSet producer supplier)	2016 to 2022	Graphite	5,641	31	0.419	0.055	7.7
Convergent (FactSet producer supplier)	2016 to 2022	Tungsten	5,641	77	0.052	0.006	9.3
Convergent (FactSet producer supplier)	2016 to 2022	Antimony	5,641	4	0.000	0.001	0.0
Convergent (FactSet producer supplier)	2016 to 2022	Lithium	5,641	119	0.303	0.053	5.7
Convergent (FactSet producer supplier)	2016 to 2022	Cobalt	5,641	85	0.118	0.008	15.2
Convergent (FactSet producer supplier)	2016 to 2022	Nickel	5,641	127	0.197	0.028	7.0
Convergent (FactSet producer supplier)	2016 to 2022	Molybdenum	5,641	34	0.382	0.027	14.2
Criterion (Form SD filed)	reports 2010 to 2013; Form SD 2014 to 2016	Tungsten, tantalum, tin	6,127	83	0.747	0.208	

Table S10. Audit of the exposure measure for the exposed company-events of the six analysed events. Up to two flagged sentences from one randomly drawn pre-event annual report per company-event, classified twice, independently, against a written rubric (Supplementary Note 3); disagreements resolved by a third classification. A company-event is confirmed when any sentence describes input use. Clopper-Pearson 95% intervals.

Event	Unit	N	Input use (%)	95% lo	95% hi	Cohen's κ
All six events	agreement	424	96			0.90
China 2010 rare earths	sentences	34	50	32	68	
China 2010 rare earths	company-events confirmed	23	57	34	77	
China 2023 gallium, germanium	sentences	52	40	27	55	
China 2023 gallium, germanium	company-events confirmed	35	49	31	66	
China 2023 graphite	sentences	46	63	48	77	
China 2023 graphite	company-events confirmed	34	65	46	80	
China 2024 antimony	sentences	2	50	1	99	
China 2024 antimony	company-events confirmed	2	50	1	99	
Indonesia 2014 nickel ore	sentences	149	74	66	81	
Indonesia 2014 nickel ore	company-events confirmed	98	78	68	85	
Indonesia 2020 nickel ore	sentences	141	86	79	91	
Indonesia 2020 nickel ore	company-events confirmed	91	90	82	95	
All six events	sentences	424	71	66	75	
All six events	company-events confirmed	283	75	69	80	

Table S11. Robustness and falsification of the main estimate. Stacked difference-in-differences on the six events with lagged controls, company×event and year×event fixed effects and standard errors clustered by company unless stated. Row R4 is estimated in stacks that contain only base-metal users and comparison companies; the corresponding row of Supplementary Table S12 comes from one regression that also contains exposed companies, hence the different N.

Check	Outcome	Coef.	s.e.	95% lo	95% hi	P	N	Exposed
Main (Table 1, col. 2)	Rule of law	−0.064	0.020	−0.103	−0.024	0.002	76,477	237
R1 control of corruption	Control of corruption	−0.071	0.023	−0.115	−0.026	0.002	76,477	237
R2 rule of law excluding China and Hong Kong suppliers	Rule of law, excl. China/HK	−0.019	0.019	−0.055	0.018	0.312	74,789	233
R3 share of suppliers in below-mean rule of law	Share below-mean rule of law	0.023	0.011	0.002	0.044	0.031	76,478	237
R4 placebo exposure: copper/aluminium/zinc users	Rule of law	−0.023	0.011	−0.044	−0.002	0.029	75,156	1,713
R5 placebo timing (event moved 3 years earlier)	Rule of law	0.020	0.028	−0.034	0.074	0.461	45,224	211
R6 leave out China 2010 rare earths	Rule of law	−0.057	0.022	−0.099	−0.014	0.009	62,580	218
R6 leave out Indonesia 2014 nickel ore	Rule of law	−0.074	0.028	−0.129	−0.019	0.008	65,625	155
R6 leave out Indonesia 2020 nickel ore	Rule of law	−0.044	0.022	−0.087	−0.001	0.046	60,274	155
R6 leave out China 2023 gallium and germanium	Rule of law	−0.069	0.022	−0.113	−0.026	0.002	63,978	208
R6 leave out China 2023 graphite	Rule of law	−0.071	0.021	−0.112	−0.030	<0.001	64,005	214
R6 leave out China 2024 antimony	Rule of law	−0.063	0.020	−0.103	−0.024	0.002	65,923	235
R7 balanced window -3 to $+3$	Rule of law	−0.113	0.034	−0.181	−0.046	0.001	20,127	78
R8 ≥ 5 suppliers pre-event	Rule of law	−0.026	0.020	−0.064	0.013	0.190	34,103	95
R9 window -3 to $+3$	Rule of law	−0.069	0.019	−0.106	−0.031	<0.001	62,789	228
R10 two-way clustered (company, year)	Rule of law	−0.064	0.020	−0.105	−0.023	0.004	76,477	237
R11 no controls (company-years without lagged controls kept)	Rule of law	−0.064	0.020	−0.105	−0.024	0.002	93,884	244
R12 contemporaneous controls	Rule of law	−0.061	0.021	−0.101	−0.020	0.003	87,629	241
R13 US-headquartered companies only	Rule of law	−0.066	0.022	−0.110	−0.022	0.003	62,641	199

Table S12. Specificity, outcome construction, rival shocks, selection and the composition of new suppliers. Stacked difference-in-differences on the six events (supplier data through calendar 2024), lagged controls, company×event and year×event fixed effects and standard errors clustered by company unless stated. Poisson (PPML) coefficients are log changes in the number of suppliers added; the meta-analysis (Hartung-Knapp) combines the six per-event estimates; N for the meta-analysis is the number of events.

Check	Outcome	Estimator	Coef.	s.e.	95% lo	95% hi	P	N	Exposed
Main estimate (Table 1, col. 2), FY $\leq$ 2024	Rule of law	OLS	−0.064	0.020	−0.103	−0.024	0.002	76,477	237
Joint regression: restricted users vs companies naming no metal	Rule of law	OLS	−0.066	0.020	−0.106	−0.027	0.001	76,477	237
Base-metal users vs companies naming no metal	Rule of law	OLS	−0.023	0.011	−0.044	−0.002	0.029	76,477	2,210
Contrast: restricted users minus base-metal users	Rule of law	Contrast	−0.043	0.022	−0.087	0.001	0.054	76,477	237
Joint regression without aluminium users	Rule of law	OLS	−0.065	0.020	−0.105	−0.026	0.001	70,289	237
Copper and zinc users vs companies naming no metal	Rule of law	OLS	0.004	0.019	−0.034	0.041	0.850	70,289	601
Contrast without aluminium users	Rule of law	Contrast	−0.069	0.027	−0.123	−0.015	0.012	70,289	237
Base-metal users as the only comparison group	Rule of law	OLS	−0.052	0.023	−0.097	−0.008	0.022	9,690	237
Non-nickel events (China 2010, 2023, 2024)	Rule of law	OLS	−0.049	0.029	−0.106	0.008	0.095	49,422	73
Nickel events (Indonesia 2014, 2020)	Rule of law	OLS	−0.071	0.025	−0.121	−0.021	0.005	27,055	164
Companies already exposed in an earlier stack dropped	Rule of law	OLS	−0.032	0.025	−0.082	0.018	0.212	76,012	169
Fiscal 2020 to 2021 dropped	Rule of law	OLS	−0.067	0.021	−0.108	−0.026	0.001	60,602	235
Form SD filers dropped from the 2010 stack	Rule of law	OLS	−0.059	0.021	−0.101	−0.017	0.006	71,276	225
Manufacturing companies only (SIC 20-39)	Rule of law	OLS	−0.064	0.023	−0.108	−0.019	0.005	37,488	208
Corrective stack weights (Wing, Freedman & Hollingsworth 2024)	Rule of law	OLS	−0.064	0.020	−0.104	−0.024	0.002	76,477	237
Meta-analysis across events (all six events)	Rule of law	Meta-analysis	−0.055	0.024	−0.115	0.006	0.068	6	
Meta-analysis across events (without antimony (2 companies))	Rule of law	Meta-analysis	−0.050	0.025	−0.118	0.018	0.113	5	
Composition only: country scores fixed at their 2005 to 2023 means	Rule of law, fixed scores	OLS	−0.090	0.022	−0.133	−0.047	<0.001	76,477	237
Links disclosed by the customer itself	Rule of law, company-disclosed links	OLS	0.014	0.030	−0.044	0.072	0.632	56,691	177
Links disclosed by the supplier or a third party	Rule of law, other-disclosed links	OLS	−0.060	0.022	−0.103	−0.017	0.006	53,736	203
Customer-side placebo: rule of law of the company's customers' countries	Customers' rule of law	OLS	0.022	0.018	−0.012	0.057	0.207	75,390	247
$\geq$ 3 disclosed suppliers before the event	Rule of law	OLS	−0.060	0.022	−0.103	−0.016	0.007	47,630	131
Pre-event supplier-count tercile: low	Rule of law	OLS	−0.060	0.057	−0.171	0.051	0.290	18,520	65
Pre-event supplier-count tercile: mid	Rule of law	OLS	−0.132	0.048	−0.226	−0.039	0.005	25,172	62
Pre-event supplier-count tercile: high	Rule of law	OLS	−0.022	0.017	−0.056	0.012	0.209	30,023	87
Any disclosed supplier (FactSet-covered companies)	Any supplier	OLS	−0.002	0.018	−0.038	0.034	0.919	113,515	274
Ln(1 + disclosed suppliers)	ln(1 + suppliers)	OLS	0.057	0.047	−0.034	0.148	0.222	113,515	274
China share of all suppliers	China share	OLS	0.029	0.008	0.013	0.045	<0.001	77,178	239
China share of all suppliers, industry × year × event FE	China share	OLS	0.015	0.009	−0.002	0.032	0.086	77,178	239
Main estimate, industry × year × event FE	Rule of law	OLS	−0.062	0.020	−0.101	−0.022	0.002	76,477	237
Ln(1 + supplier countries)	ln(1 + countries)	OLS	0.032	0.025	−0.017	0.081	0.202	77,178	239
Country concentration of suppliers (HHI)	Country HHI	OLS	−0.011	0.013	−0.037	0.015	0.423	77,178	239
New suppliers: all	New suppliers (count)	PPML	0.264	0.133	0.004	0.525	0.047	92,535	274
New suppliers: China incl. Hong Kong	New suppliers (count)	PPML	0.353	0.107	0.143	0.563	<0.001	30,173	274
New suppliers: China, materials value chain	New suppliers (count)	PPML	0.199	0.109	−0.016	0.413	0.070	17,053	274
New suppliers: China, other industries	New suppliers (count)	PPML	0.457	0.153	0.156	0.757	0.003	24,950	274

Check	Outcome	Estimator	Coef.	s.e.	95% lo	95% hi	P	N	Exposed
New suppliers: other below-mean rule of law	New suppliers (count)	PPML	0.068	0.132	−0.192	0.327	0.609	25,619	274
New suppliers: above-mean rule of law	New suppliers (count)	PPML	0.230	0.134	−0.032	0.492	0.086	90,293	274
New suppliers: United States, FTA partners and Japan	New suppliers (count)	PPML	0.207	0.141	−0.070	0.483	0.143	86,741	274
New suppliers: foreign entities of concern	New suppliers (count)	PPML	0.293	0.110	0.077	0.510	0.008	30,732	274
Share of active suppliers in foreign entities of concern	Share in FEOC	OLS	0.028	0.008	0.013	0.044	<0.001	76,478	237
Share of active suppliers in the US, FTA partners and Japan	Share in US, FTA, Japan	OLS	−0.028	0.015	−0.057	0.000	0.050	76,478	237
Dose-response: exposed × post (at two reports)	Rule of law	OLS	−0.066	0.037	−0.138	0.005	0.069	76,477	237
Dose-response: per additional pre-event report naming the mineral	Rule of law	OLS	0.001	0.016	−0.030	0.032	0.942	76,477	
Pre-event China revenue share × year × event FE	Rule of law	OLS	−0.063	0.021	−0.104	−0.023	0.002	73,433	222
Pre-event China supplier share and ln(suppliers) × year × event FE	Rule of law	OLS	−0.066	0.020	−0.106	−0.027	0.001	73,715	214
Reversal: 2015 lifting of China's rare-earth quotas (FY2011 to 2019)	Rule of law	OLS	0.131	0.056	0.020	0.241	0.020	12,531	17
Reversal: 2017 relaxation of Indonesia's nickel-ore ban (FY2014 to 2019)	Rule of law	OLS	−0.003	0.029	−0.060	0.054	0.912	8,902	76

Table S13. Further checks of the main estimate. Stacked difference-in-differences with lagged controls, company×event and year×event fixed effects and standard errors clustered by company. K1: the entropy-balancing sample of Table 1, column 4, without and with the weights. K2: weights balancing the lagged controls only, not the pre-event level of the outcome. K3: company-events weighted by their pre-event number of disclosed suppliers. K4: the three terciles of the pre-event number of suppliers (as in Fig. 4c) in one regression with tercile-specific year-by-event fixed effects; test that the three effects are equal: $F(2, 5{,}047) = 2.54$, P = 0.079. K5: pre-event company size interacted with year-by-event fixed effects. K6: the reference year dropped. K7: Indonesia's 2020 ban, with comparison companies and either first-time exposed companies or companies exposed in an earlier stack.

Check	Coef.	s.e.	95% lo	95% hi	P	N	Exposed
Main estimate (Table 1, column 2)	−0.064	0.020	−0.103	−0.024	0.002	76,477	237
K1 entropy-balancing sample, unweighted	−0.064	0.020	−0.103	−0.024	0.002	72,661	211
K1 entropy-balancing sample, weighted (Table 1, column 4)	−0.079	0.021	−0.119	−0.039	<0.001	72,661	211
K2 entropy balancing on the lagged controls only	−0.054	0.020	−0.094	−0.014	0.008	72,661	211
K3 weighted by the pre-event number of suppliers	−0.024	0.019	−0.062	0.014	0.211	73,715	214
K4 tercile low, one regression	−0.061	0.057	−0.172	0.050	0.278	73,715	65
K4 tercile mid, one regression	−0.132	0.048	−0.225	−0.038	0.006	73,715	62
K4 tercile high, one regression	−0.022	0.017	−0.056	0.012	0.211	73,715	87
K5 pre-event company size × year × event fixed effects	−0.057	0.020	−0.097	−0.017	0.005	72,661	211
K6 year −1 (reference year) dropped	−0.061	0.023	−0.106	−0.015	0.009	64,646	237
K7 Indonesia 2020, first-time exposed companies only	0.022	0.098	−0.170	0.213	0.825	15,819	30
K7 Indonesia 2020, companies exposed in an earlier stack only	−0.133	0.043	−0.217	−0.049	0.002	16,052	52

Table S14. Where newly added suppliers are headquartered. Share of a year's new rated suppliers headquartered in China (including Hong Kong), in other jurisdictions with rule of law below the world mean, and in jurisdictions above it; stacked difference-in-differences with year×event fixed effects, and with industry×year×event fixed effects.

New suppliers in	Pre-event share (%)	Change (pp)	95% lo	95% hi	P	Change, ind. FE (pp)	95% lo	95% hi	P
China	8.270	3.533	1.795	5.270	$<$0.001	2.266	0.377	4.155	0.019
Other weak rule of law	6.857	−0.166	−1.990	1.658	0.858	−0.032	−1.817	1.754	0.972
Strong rule of law	86.442	−2.747	−5.022	−0.472	0.018	−1.714	−4.180	0.751	0.173

Table S15. Who discloses the supplier relationships of US-listed companies. FactSet Revere relationships of US-listed companies in the sample, 2005 to 2024, counted once per relationship and year, by the headquarters of the supplier; the remainder is disclosed by the supplier or a third party.

Relationships	Supplier headquarters	Relationship-years	Disclosed by the customer (%)
Active on 31 December	China, including Hong Kong	58,807	20
Active on 31 December	United States	366,763	40
Active on 31 December	All other countries	357,911	28
Started in the year	China, including Hong Kong	49,553	16
Started in the year	United States	292,386	35
Started in the year	All other countries	304,871	23

Table S16. Sensitivity to a linear pre-restriction trend. Stacked event studies (years -4 to $+4$, reference -1). Slope: linear trend through the lead coefficients anchored at year -1; average after: mean of the coefficients for years 0 to 4; net of trend: the same after subtracting the extrapolated trend (the linear case of Rambachan and Roth's bounds). Annual-report measures: sentences per 1,000 in the supplier-data sample.

Series	P leads	Pre-trend slope	Average after	P	Net of trend	95% lo	95% hi	P
Supply-base rule of law (Fig. 2b)	0.290	0.005	−0.079	<0.001	−0.094	−0.194	0.006	0.066
Disclosed supplier search, supplier-data sample (Table 2, column 4; Fig. 5a)	0.055	0.014	0.053	0.016	0.009	−0.064	0.083	0.799
Disclosed supplier search, all annual reports (all annual reports)	0.324	0.010	0.038	0.027	0.008	−0.049	0.064	0.787
Report sentences: supplier search (diversifying, qualifying or adding suppliers)	0.055	0.014	0.053	0.016	0.009	−0.064	0.083	0.799
Report sentences: supply disruption	0.263	0.045	0.184	0.027	0.051	−0.204	0.306	0.697
Report sentences: export controls	0.193	0.007	0.038	0.077	0.017	−0.040	0.074	0.559
Report sentences: geopolitics, tariffs, sanctions	0.015	0.070	0.006	0.949	−0.203	−0.488	0.083	0.164
Report sentences: responsible sourcing, due diligence	0.196	−0.004	0.049	0.152	0.062	−0.040	0.164	0.231
Report sentences: supply chain and China	0.128	0.013	0.009	0.645	−0.029	−0.096	0.037	0.385
Report sentences: stockpiles, safety stocks	0.135	0.003	0.029	0.088	0.020	−0.041	0.082	0.518
Report sentences: long-term supply agreements	0.296	−0.032	0.026	0.496	0.122	−0.035	0.279	0.128
Report sentences: vertical integration	0.025	0.010	0.015	0.344	−0.016	−0.064	0.032	0.518
Report sentences: substitution	0.775	0.005	0.001	0.959	−0.014	−0.105	0.076	0.754
Report sentences: recycling, circularity	0.559	0.009	0.034	0.472	0.008	−0.128	0.144	0.909
Report sentences: domestic sourcing, reshoring	0.772	0.003	0.003	0.848	−0.005	−0.054	0.044	0.839
Report sentences: input price volatility	0.266	0.008	0.032	0.069	0.009	−0.046	0.065	0.740

Table S17. Robustness of the exploratory conditions (agility and pricing power) to their measurement.

Measure	Interaction	s.e.	95% lo	95% hi	P	N	Exposed
Pricing power (main): gross-margin percentile within industry-year	0.047	0.025	−0.003	0.097	0.063	76,371	236
Pricing power: gross margin clipped to [-1, 1]	0.070	0.033	0.005	0.136	0.036	76,371	236
Pricing power: gross margin winsorized 1/99 (outlier-sensitive)	0.067	0.016	0.036	0.099	$<$0.001	76,371	236
Pricing power: operating margin clipped to [-1, 1]	0.007	0.033	−0.057	0.071	0.831	76,371	236
Agility (main): new-link rate	−0.067	0.031	−0.128	−0.006	0.031	73,715	214
Agility: supplier churn rate	−0.065	0.034	−0.131	0.001	0.052	73,715	214
Agility: ln(1 + new links)	0.010	0.019	−0.028	0.048	0.606	73,715	214
Agility: new-link rate, >= 3 suppliers pre-event	−0.025	0.047	−0.118	0.067	0.588	47,630	131

Table S18. False-discovery-rate control across all outcomes, characteristics and measures examined. Benjamini-Hochberg q-values within each family (outcomes; pre-event characteristics; candidate channels, that is supplier-network, accounting, patent, incident and annual-report measures, tested by the joint-significance rule $P = \max(P_a, P_b)$), separately for the exploration half, the confirmation half and the full sample. Tests: number of estimates in the family (two emissions outcomes are estimated in the full sample only). Every estimate is listed in Supplementary Table S19.

Family	Measure reported	Sample	Tests	$P < 0.05$	$q < 0.05$	P	q
Candidate channels	Disclosed supplier search	confirm	42	4	0	0.022	0.458
Candidate channels	Disclosed supplier search	explore	42	5	2	0.428	0.839
Candidate channels	Disclosed supplier search	full	42	10	4	0.016	0.095
Outcomes	Supply-base rule of law	confirm	82	18	4	0.008	0.133
Outcomes	Supply-base rule of law	explore	82	13	0	0.072	0.295
Outcomes	Supply-base rule of law	full	84	26	12	0.002	0.015
Pre-event characteristics	Agility	confirm	52	6	2	0.032	0.277
Pre-event characteristics	Agility	explore	52	9	5	0.363	0.754
Pre-event characteristics	Agility	full	52	7	2	0.031	0.323
Pre-event characteristics	Pricing power	confirm	52	6	2	0.375	0.813
Pre-event characteristics	Pricing power	explore	52	9	5	0.082	0.329
Pre-event characteristics	Pricing power	full	52	7	2	0.063	0.363

Table S19. Every estimate in each false-discovery-rate family. Outcomes: coefficient on exposed × post (stacked difference-in-differences, six events, lagged controls, company×event and year×event fixed effects, standard errors clustered by company). Pre-event characteristics: interaction of exposure with the characteristic, standardized over company-events, with characteristic×year×event fixed effects; dependent variable supply-base rule of law. Candidate channels: joint test $P = \max(P_a, P_b)$ of the change in the channel after a restriction and its association with supply-base rule of law (no single estimate). q: Benjamini-Hochberg within the family in the full sample. Rows are ordered by q within each family.

Family	Measure	Estimate	P, exploration	P, confirmation	P, full	q, full
Outcomes	China share of new suppliers	0.037	0.007	0.001	<0.001	0.003
Outcomes	Log raw-material inventories	0.123	0.020	0.001	<0.001	0.006
Outcomes	Log new suppliers in China	0.127	0.002	0.043	<0.001	0.006
Outcomes	China share of suppliers	0.029	0.001	0.050	<0.001	0.007
Outcomes	Log patents	−0.161	0.004	0.032	<0.001	0.007
Outcomes	Log new suppliers in below-mean rule-of-law countries	0.120	0.017	0.010	<0.001	0.007
Outcomes	Log materials patents	−0.068	0.192	<0.001	<0.001	0.007
Outcomes	Rule of law of new suppliers	−0.078	0.137	<0.001	0.001	0.011
Outcomes	Supply-base rule of law	−0.064	0.072	0.008	0.002	0.015
Outcomes	Report sentences: supply disruption	0.192	0.012	0.070	0.002	0.016
Outcomes	Log green patents	−0.080	0.062	0.016	0.003	0.023
Outcomes	Log Chinese suppliers dropped	0.084	0.008	0.177	0.003	0.024
Outcomes	Report sentences: geopolitics, tariffs, sanctions	0.199	0.065	0.082	0.010	0.062
Outcomes	Share of suppliers producing the mineral	−0.022	0.114	0.048	0.011	0.066
Outcomes	Inventories / sales	0.015	0.095	0.022	0.013	0.068
Outcomes	Report sentences: digital supply chain	−0.020	0.061	0.088	0.013	0.068
Outcomes	Report sentences: supply chain and China	0.039	0.185	0.039	0.015	0.070
Outcomes	Raw-material inventories / sales	0.007	0.116	0.030	0.015	0.070
Outcomes	Report sentences: supplier search (diversifying, qualifying or adding suppliers)	0.046	0.428	0.014	0.016	0.070
Outcomes	Below-mean rule-of-law share of new suppliers	0.027	0.255	0.025	0.018	0.075
Outcomes	Report sentences on the mineral: supply disruption	0.017	0.096	0.089	0.019	0.076
Outcomes	Report sentences: export controls	0.121	0.161	0.028	0.022	0.084
Outcomes	Below-mean rule-of-law share of suppliers	0.023	0.069	0.205	0.031	0.112
Outcomes	Log new suppliers	0.091	0.041	0.381	0.039	0.137
Outcomes	Report sentences: emissions	0.178	0.111	0.128	0.041	0.137
Outcomes	Report sentences: responsible sourcing, due diligence	0.053	0.089	0.331	0.048	0.156
Outcomes	Log incidents in China	0.029	0.134	0.215	0.065	0.202
Outcomes	Log environmental incidents	0.034	0.222	0.209	0.083	0.238
Outcomes	Cash / assets	0.008	0.037	0.935	0.085	0.238
Outcomes	Log pollution incidents	0.034	0.215	0.227	0.086	0.238
Outcomes	Log incidents abroad	0.035	0.043	0.906	0.088	0.238
Outcomes	Report sentences: stockpiles, safety stocks	0.030	0.054	0.593	0.092	0.242
Outcomes	Leverage	−0.022	0.213	0.138	0.103	0.258
Outcomes	Log sales	−0.037	0.212	0.211	0.104	0.258
Outcomes	Log severe incidents	0.027	0.027	0.726	0.121	0.291
Outcomes	Days of inventory	5.638	0.461	0.095	0.142	0.332
Outcomes	Log inventories	0.042	0.459	0.199	0.157	0.357
Outcomes	Any environmental incident	0.022	0.488	0.223	0.163	0.360
Outcomes	Raw-material inventories / assets	0.002	0.255	0.478	0.178	0.383
Outcomes	Log disclosed emissions intensity	0.139			0.182	0.383
Outcomes	Log number of suppliers	0.055	0.372	0.338	0.193	0.389
Outcomes	Report sentences: recycling, circularity	0.185	0.076	0.395	0.195	0.389
Outcomes	Log number of supplier countries	0.032	0.537	0.198	0.202	0.394
Outcomes	Report sentences: vertical integration	0.021	0.933	0.085	0.206	0.394
Outcomes	Log disclosed scope 1 and 2 emissions	0.115			0.223	0.417
Outcomes	Report sentences: input price volatility	0.028	0.033	0.959	0.242	0.425
Outcomes	Log new suppliers in above-mean rule-of-law countries	0.051	0.192	0.750	0.242	0.425
Outcomes	Any supply-chain incident	−0.012	0.670	0.196	0.247	0.425
Outcomes	Report sentences on the mineral: long-term supply agreements	0.007	0.258	0.768	0.248	0.425
Outcomes	Log incidents in high-risk mining countries	0.011	0.132	0.686	0.257	0.432
Outcomes	Report sentences on the mineral: responsible sourcing	0.003	0.242	0.781	0.264	0.435
Outcomes	Log human and labour rights incidents	0.020	0.069	0.520	0.274	0.442
Outcomes	Log new suppliers outside China	0.044	0.338	0.648	0.312	0.495
Outcomes	Log ESG incidents, all	0.025	0.152	0.892	0.320	0.497
Outcomes	Log upstream scope 3 emissions	0.071	0.258	0.981	0.360	0.550
Outcomes	Log employees	−0.015	0.477	0.593	0.372	0.556

Family	Measure	Estimate	P, exploration	P, confirmation	P, full	q, full
Outcomes	Any ESG incident	0.015	0.669	0.421	0.377	0.556
Outcomes	Log social incidents	0.018	0.122	0.528	0.395	0.573
Outcomes	Log new suppliers in other below-mean rule-of-law countries	0.022	0.845	0.100	0.402	0.573
Outcomes	Country concentration of suppliers (HHI)	−0.011	0.774	0.083	0.423	0.592
Outcomes	Report sentences: domestic sourcing, reshoring	0.012	0.343	0.826	0.452	0.623
Outcomes	Any social incident	0.013	0.322	0.840	0.474	0.642
Outcomes	Log suppliers dropped	0.029	0.134	0.581	0.489	0.652
Outcomes	Sales growth	−0.018	0.505	0.882	0.516	0.677
Outcomes	Report sentences: long-term supply agreements	−0.027	0.929	0.298	0.533	0.689
Outcomes	Report sentences: China	0.096	0.476	0.640	0.627	0.778
Outcomes	Report sentences on the mineral: domestic sourcing, reshoring	0.000	0.201	0.330	0.628	0.778
Outcomes	Return on assets	−0.008	0.472	0.495	0.630	0.778
Outcomes	Log supply-chain incidents	−0.007	0.813	0.080	0.645	0.785
Outcomes	R&D / assets	0.002	0.192	0.367	0.665	0.798
Outcomes	Report sentences on the mineral: substitution	0.001	0.890	0.697	0.689	0.815
Outcomes	Log circular-economy patents	−0.001	0.136	0.332	0.735	0.858
Outcomes	Share of suppliers in other below-mean rule-of-law countries	−0.003	0.454	0.926	0.755	0.869
Outcomes	Report sentences on the mineral: recycling, circularity	−0.002	0.997	0.708	0.767	0.871
Outcomes	Inventories / assets	0.001	0.990	0.731	0.793	0.888
Outcomes	Report sentences on the mineral: diversification	0.001	0.264	0.043	0.807	0.892
Outcomes	Report sentences: substitution	0.004	0.491	0.424	0.839	0.914
Outcomes	Other below-mean rule-of-law share of new suppliers	−0.002	0.239	0.526	0.858	0.914
Outcomes	Cost of goods sold / sales	−0.065	0.999	0.344	0.880	0.914
Outcomes	Gross margin	0.065	0.999	0.344	0.880	0.914
Outcomes	Capital expenditure / assets	0.000	0.875	0.998	0.881	0.914
Outcomes	Tobin's q	−0.043	0.267	0.544	0.910	0.933
Outcomes	Report sentences on the mineral: stockpiles, safety stocks	0.001	0.172	0.322	0.930	0.941
Outcomes	Log supply-chain environmental and social incidents	0.000	0.562	0.179	0.982	0.982
Pre-event characteristics	Pre-event reports naming the mineral together with China	0.016	<0.001	0.004	<0.001	<0.001
Pre-event characteristics	Pre-event gross margin	0.076	<0.001	<0.001	<0.001	<0.001
Pre-event characteristics	Pre-event report sentences: digital supply chain	0.336	0.019	0.974	0.004	0.076
Pre-event characteristics	Pre-event report sentences: emissions	0.037	0.023	0.464	0.025	0.323
Pre-event characteristics	Pre-event supply-base agility (new suppliers per supplier)	−0.066	0.363	0.032	0.031	0.323
Pre-event characteristics	Pre-event report sentences: geopolitics, tariffs, sanctions	0.043	0.066	0.334	0.046	0.338
Pre-event characteristics	Pre-event log ESG incidents, all	0.028	0.250	0.065	0.047	0.338
Pre-event characteristics	Pre-event supplier churn	−0.064	0.361	0.075	0.052	0.338
Pre-event characteristics	Pre-event pricing power (gross-margin rank in industry and year)	0.047	0.082	0.375	0.063	0.363
Pre-event characteristics	Pre-event log materials patents	0.009	0.169	0.270	0.071	0.363
Pre-event characteristics	Pre-event China share of suppliers	−0.058	0.258	0.462	0.080	0.363
Pre-event characteristics	Pre-event company age	0.025	0.951	0.004	0.084	0.363
Pre-event characteristics	Pre-event share of suppliers producing the mineral	0.018	0.168	0.194	0.096	0.383
Pre-event characteristics	Pre-event report sentences: vertical integration	0.014	0.002	0.826	0.121	0.450
Pre-event characteristics	Pre-event report sentences: critical minerals	0.014	<0.001	0.856	0.136	0.472
Pre-event characteristics	Pre-event suppliers dropped per supplier	−0.051	0.455	0.262	0.169	0.548
Pre-event characteristics	Pre-event report sentences: long-term supply agreements	0.020	0.054	0.748	0.197	0.573
Pre-event characteristics	Pre-event any supplier in China	−0.024	0.689	0.102	0.203	0.573
Pre-event characteristics	Pre-event R&D / assets	−0.049	0.677	<0.001	0.228	0.573

Family	Measure	Estimate	P, exploration	P, confirmation	P, full	q, full
Pre-event characteristics	Pre-event log patents	−0.013	0.578	0.203	0.240	0.573
Pre-event characteristics	Pre-event log total assets	0.027	0.411	0.200	0.241	0.573
Pre-event characteristics	Pre-event Tobin's q	0.260	0.186	0.503	0.243	0.573
Pre-event characteristics	Pre-event log number of suppliers	0.020	0.403	0.554	0.281	0.627
Pre-event characteristics	Pre-event report sentences: China	−0.031	0.866	0.024	0.291	0.627
Pre-event characteristics	Pre-event supply-base rule of law	0.028	0.482	0.609	0.301	0.627
Pre-event characteristics	Pre-event report sentences: supplier search (diversifying, qualifying or adding suppliers)	0.018	0.047	0.661	0.335	0.670
Pre-event characteristics	Pre-event log circular-economy patents	0.007	0.530	0.253	0.397	0.726
Pre-event characteristics	Pre-event capital expenditure / assets	−0.019	0.110	0.527	0.402	0.726
Pre-event characteristics	Pre-event any revenue from China	−0.028	0.726	0.318	0.405	0.726
Pre-event characteristics	Pre-event log China revenue	−0.014	0.856	0.345	0.540	0.916
Pre-event characteristics	Pre-event log number of Chinese suppliers	−0.010	0.897	0.472	0.546	0.916
Pre-event characteristics	Pre-event China revenue share	−0.012	0.873	0.353	0.579	0.917
Pre-event characteristics	Pre-event leverage	0.029	0.663	0.777	0.582	0.917
Pre-event characteristics	Pre-event report sentences: domestic sourcing, reshoring	0.010	0.904	0.680	0.640	0.924
Pre-event characteristics	Pre-event report sentences: supply disruption	0.011	0.107	0.331	0.650	0.924
Pre-event characteristics	Pre-event country concentration of suppliers (HHI)	0.010	0.352	0.938	0.662	0.924
Pre-event characteristics	Pre-event log number of supplier countries	0.007	0.862	0.803	0.671	0.924
Pre-event characteristics	Pre-event report sentences: substitution	−0.004	0.030	0.103	0.694	0.924
Pre-event characteristics	Pre-event inventories / sales	0.015	0.842	0.874	0.709	0.924
Pre-event characteristics	Pre-event reports naming the mineral as an input	−0.007	0.129	0.722	0.711	0.924
Pre-event characteristics	Pre-event tangibility	0.008	0.861	0.526	0.765	0.942
Pre-event characteristics	Pre-event report sentences: stockpiles, safety stocks	0.006	0.688	0.950	0.778	0.942
Pre-event characteristics	Pre-event input-related mentions of the mineral per 1,000 sentences	−0.031	<0.001	0.808	0.791	0.942
Pre-event characteristics	Pre-event report sentences: recycling, circularity	−0.002	0.387	0.411	0.815	0.942
Pre-event characteristics	Pre-event below-mean rule-of-law share of suppliers	0.006	0.786	0.893	0.839	0.942
Pre-event characteristics	Pre-event report sentences: supply chain and China	0.004	0.293	0.489	0.844	0.942
Pre-event characteristics	Pre-event cash / assets	0.006	0.846	0.931	0.851	0.942
Pre-event characteristics	Pre-event report sentences: responsible sourcing, due diligence	0.004	0.065	0.249	0.874	0.947
Pre-event characteristics	Pre-event foreign income share	−0.002	0.770	0.705	0.898	0.947
Pre-event characteristics	Pre-event raw-material inventories / assets	0.001	0.716	0.579	0.929	0.947
Pre-event characteristics	Pre-event return on assets	−0.006	0.683	0.246	0.929	0.947
Pre-event characteristics	Pre-event log supply-chain incidents	0.001	0.957	0.674	0.983	0.983
Candidate channels	China share of new suppliers		0.007	0.001	<0.001	0.001
Candidate channels	Log new suppliers in China		0.002	0.043	<0.001	0.004
Candidate channels	China share of suppliers		0.001	0.050	<0.001	0.004

Family	Measure	Estimate	P, exploration	P, confirmation	P, full	q, full
Candidate channels	Supply-security attention index		0.027	0.097	0.003	0.029
Candidate channels	Report sentences: geopolitics, tariffs, sanctions		0.082	0.082	0.010	0.080
Candidate channels	Report sentences: supply chain and China		0.185	0.102	0.015	0.095
Candidate channels	Report sentences: supplier search (diversifying, qualifying or adding suppliers)		0.428	0.022	0.016	0.095
Candidate channels	Report sentences: supply disruption		0.012	0.479	0.036	0.184
Candidate channels	Log new suppliers		0.056	0.381	0.039	0.184
Candidate channels	Report sentences: responsible sourcing, due diligence		0.121	0.331	0.048	0.202
Candidate channels	Cash / assets		0.664	0.935	0.085	0.323
Candidate channels	Report sentences: stockpiles, safety stocks		0.054	0.593	0.092	0.323
Candidate channels	Log Chinese suppliers dropped		0.116	0.611	0.131	0.422
Candidate channels	Log number of supplier countries		0.537	0.198	0.202	0.606
Candidate channels	Report sentences: input price volatility		0.307	0.959	0.249	0.697
Candidate channels	Log number of suppliers		0.460	0.500	0.311	0.746
Candidate channels	Log new suppliers outside China		0.338	0.648	0.312	0.746
Candidate channels	Log ESG incidents, all		0.443	0.892	0.320	0.746
Candidate channels	Log materials patents		0.581	0.649	0.359	0.781
Candidate channels	Log sales		0.752	0.377	0.372	0.781
Candidate channels	Report sentences on the mineral: long-term supply agreements		0.379	0.768	0.486	0.934
Candidate channels	Log suppliers dropped		0.147	0.924	0.489	0.934
Candidate channels	Report sentences on the mineral: domestic sourcing, reshoring		0.208	0.330	0.628	0.989
Candidate channels	Log supply-chain incidents		0.813	0.080	0.645	0.989
Candidate channels	Report sentences on the mineral: supply disruption		0.096	0.750	0.663	0.989
Candidate channels	R&D / assets		0.665	0.621	0.665	0.989
Candidate channels	Report sentences on the mineral: responsible sourcing		0.883	0.781	0.665	0.989
Candidate channels	Leverage		0.377	0.920	0.692	0.989
Candidate channels	Report sentences on the mineral: recycling, circularity		0.997	0.708	0.767	0.989
Candidate channels	Report sentences on the mineral: diversification		0.831	0.190	0.807	0.989
Candidate channels	Log inventories		0.661	0.386	0.838	0.989
Candidate channels	Report sentences: substitution		0.752	0.424	0.839	0.989
Candidate channels	Cost of goods sold / sales		0.999	0.344	0.880	0.989
Candidate channels	Gross margin		0.999	0.344	0.880	0.989
Candidate channels	Capital expenditure / assets		0.875	0.998	0.881	0.989
Candidate channels	Inventories / sales		0.820	0.772	0.907	0.989
Candidate channels	Sales growth		0.505	0.882	0.916	0.989
Candidate channels	Report sentences: export controls		0.653	0.553	0.918	0.989
Candidate channels	Report sentences on the mineral: stockpiles, safety stocks		0.945	0.942	0.956	0.989

Family	Measure	Estimate	P, exploration	P, confirmation	P, full	q, full
Candidate channels	Raw-material inventories / sales		0.149	0.349	0.965	0.989
Candidate channels	Raw-material inventories / assets		0.347	0.478	0.983	0.989
Candidate channels	Report sentences on the mineral: substitution		0.890	0.879	0.989	0.989

Table S20. The two pre-event characteristics whose interaction with exposure passes false-discovery-rate control. Interaction of exposure with the characteristic (dependent variable supply-base rule of law), as examined and with extreme values tamed. Untransformed gross margin ranges down to -159 among company-events (1st percentile among exposed company-events -19.3), because a few companies have negligible sales. Reports naming the mineral together with China are non-zero for 22 of 237 exposed company-events; with so few, cluster-robust standard errors are unreliable, and the permutation P value permutes the count among exposed company-events within each event (499 draws).

Characteristic	Measurement	Interaction	s.e.	P	P, permutation
Untransformed gross margin	as examined (standardized over all company-events)	0.0758	0.0183	$<$0.001	
Untransformed gross margin	winsorized at the exposed 1st and 99th percentiles	0.0754	0.0081	$<$0.001	
Untransformed gross margin	percentile rank	0.0280	0.0260	0.280	
Untransformed gross margin	five most extreme exposed company-events dropped	0.5308	1.2912	0.681	
Pre-event reports naming the mineral with China	as examined (standardized over all company-events)	0.0161	0.0005	$<$0.001	0.208
Pre-event reports naming the mineral with China	indicator: at least one such report	0.6968	0.0207	$<$0.001	0.074
Pre-event reports naming the mineral with China	winsorized at the exposed 1st and 99th percentiles	0.0181	0.0005	$<$0.001	
Pre-event reports naming the mineral with China	percentile rank	0.0258	0.0008	$<$0.001	
Pre-event reports naming the mineral with China	five most extreme exposed company-events dropped	0.0129	0.0017	$<$0.001	

Table S21. Other outcomes that pass false-discovery-rate control, with the checks applied to the main outcome. Stacked difference-in-differences as in Table 1, column 2; ind. FE: with industry×year×event fixed effects; P leads: joint test of the three event-study leads; net of trend: average post-restriction event-study coefficient after extrapolating the linear trend of the leads.

Outcome	Coef.	95% lo	95% hi	P	Coef., ind. FE	P	P leads	Net of trend	P	Exposed
Raw-material inventories, ln(1 + USD m)	0.123	0.059	0.186	<0.001	0.037	0.272	<0.001	−0.081	0.106	259
Patents, ln(1 + count)	−0.161	−0.251	−0.072	<0.001	−0.069	0.137	0.647	−0.222	0.012	280
Materials patents, ln(1 + count)	−0.068	−0.106	−0.029	<0.001	−0.037	0.054	0.140	−0.038	0.404	280
Green patents, ln(1 + count)	−0.080	−0.133	−0.027	0.003	−0.018	0.505	0.315	−0.068	0.088	280
Chinese suppliers dropped, ln(1 + count)	0.084	0.028	0.140	0.003	0.053	0.066	0.134	0.165	0.002	239

Table S22. Environmental and social incidents reported about exposed companies (RepRisk). Stacked difference-in-differences, six events, lagged controls, company×event and year×event fixed effects.

ln(1 + incidents)	Coef.	s.e.	95% lo	95% hi	P	N	Exposed companies	Pre-event mean
All incidents	0.025	0.025	−0.024	0.073	0.320	94,227	183	0.415
Environmental	0.034	0.020	−0.004	0.073	0.083	94,227	183	0.226
Social	0.018	0.021	−0.024	0.060	0.395	94,227	183	0.306
Supply-chain issues	−0.007	0.015	−0.036	0.022	0.645	94,227	183	0.070
Human and labour rights	0.020	0.018	−0.016	0.056	0.274	94,227	183	0.202
Pollution and waste	0.034	0.020	−0.005	0.073	0.086	94,227	183	0.226
Severe (severity >= 2)	0.027	0.017	−0.007	0.061	0.121	94,227	183	0.234
Located outside the company's home country	0.035	0.021	−0.005	0.076	0.088	94,227	183	0.186
Located in high-risk mining countries	0.011	0.010	−0.008	0.030	0.257	94,227	183	0.085
Located in China	0.029	0.016	−0.002	0.060	0.065	94,227	183	0.068
Supply-chain environmental/social	0.000	0.013	−0.026	0.026	0.982	94,227	183	0.062

Table S23. Annualized quarterly Compustat versus the annual file.

Fiscal year	N	r sales	r COGS	r inventories	r assets	r R&D	r capex
2015	11,037	0.997	0.995	1.000	1.000	0.999	1.000
2016	10,939	0.999	0.999	1.000	1.000	0.997	1.000
2017	10,880	1.000	0.999	1.000	1.000	1.000	1.000
2018	10,962	0.999	0.998	1.000	1.000	0.999	1.000
2019	11,115	0.999	0.999	1.000	1.000	1.000	1.000
2020	11,286	0.998	0.997	1.000	1.000	1.000	1.000
2021	11,641	1.000	0.999	1.000	1.000	1.000	1.000
2022	11,921	0.998	0.997	1.000	1.000	1.000	1.000
2023	11,654	1.000	0.999	1.000	1.000	1.000	1.000
2024	4,995	1.000	1.000	1.000	1.000	1.000	1.000

Table S24. Inference with the restriction events as the units of inference. Main estimate (Table 1, column 2) with standard errors clustered by event (six clusters) or with the two Indonesian nickel bans, which share most exposed companies, as one cluster (five clusters); and tests on the six per-event estimates (Fig. 2c). CR2: bias-reduced variance with Imbens-Kolesár degrees of freedom, computed with the fixed effects absorbed (exact because they are nested within events). Wild cluster restricted bootstrap: null imposed, every draw enumerated, 95% interval by inverting the bootstrap test (unbounded: the test does not reject at any value on that side within eight standard errors). With six clusters, the smallest attainable two-sided P value is 0.031 for Rademacher weights and for the sign-change test. Comparison companies recur in every stack, so event clusters are not strictly independent (Supplementary Note 5).

Unit	Method	Clusters	Estimate	95% lo	95% hi	d.f.	P
Companies	Company-clustered standard errors (Table 1, column 2)	5,199	−0.064	−0.103	−0.024	5,198	0.002
Six events	Cluster-robust (CR1), $t(G-1)$	6	−0.064	−0.113	−0.015	5.00	0.021
Six events	Bias-reduced (CR2), Imbens-Kolesár degrees of freedom	6	−0.064	−0.137	0.010	2.54	0.068
Six events	Wild cluster restricted bootstrap-t, Rademacher weights (all 64 draws)	6	−0.064	−0.132	0.011		0.094
Six events	Wild cluster restricted bootstrap-t, Webb weights (all 46,656 draws)	6	−0.064	−0.142	0.014		0.092
Six events	Leave-one-cluster-out jackknife, $t(G-1)$	6	−0.064	−0.123	−0.005	5.00	0.039
Five clusters	Cluster-robust (CR1), $t(G-1)$	5	−0.064	−0.099	−0.028	4.00	0.007
Five clusters	Bias-reduced (CR2), Imbens-Kolesár degrees of freedom	5	−0.064	−0.143	0.015	1.55	0.069
Five clusters	Wild cluster restricted bootstrap-t, Rademacher weights (all 32 draws)	5	−0.064	unbounded	unbounded		0.188
Five clusters	Wild cluster restricted bootstrap-t, Webb weights (all 7,776 draws)	5	−0.064	unbounded	0.007		0.104
Five clusters	Leave-one-cluster-out jackknife, $t(G-1)$	5	−0.064	−0.109	−0.018	4.00	0.018
Six per-event estimates	t test on the per-event estimates (Ibragimov-Müller)	6	−0.071	−0.143	0.000	5.00	0.050
Six per-event estimates	Sign-change randomization test on the per-event estimates (all 64 sign changes)	6	−0.071	unbounded	unbounded		0.063
Six per-event estimates	Random-effects meta-analysis (Hartung-Knapp-Sidik-Jonkman)	6	−0.055	−0.115	0.006	5.00	0.068

Table S25. Supplier location beyond the headquarters: what FactSet records. Supplier-years of active links of Compustat-matched customer companies, calendar years 2005 to 2024; shares in per cent. Parent: a company of which the supplier is named a subsidiary in any FactSet relationship (followed up to five levels). Operating subsidiary: the subsidiary of the supplier through which a relationship runs, when FactSet identifies it as a company. Corporate equity holder: FactSet 'Investor' or 'Equity Investment' relationship naming a company with operating products (an RBICS record and no product under Finance; banks, asset managers, clearing nominees and governments are excluded) (Supplementary Note 6).

	Suppliers in China (incl. Hong Kong)	Elsewhere	All
Supplier-years (links of Compustat-matched customers, 2005 to 2024)	57,867	776,262	834,129
Distinct suppliers	4,725	40,687	45,412
All FactSet addresses (headquarters and secondary, incorporation or regional addresses) in the HQ country	75.5	93.3	92.1
otherwise: an address in the Cayman Islands, Bermuda or British Virgin Islands (share of the rest)	82.2	14.9	29.3
FactSet names a parent company	6.3	9.0	8.8
parent headquartered outside the supplier's HQ country (share of those with a parent)	18.6	32.1	31.5
parent headquartered in China or Hong Kong (share of those with a parent)	91.7	1.5	5.9
FactSet identifies the supplier-side subsidiary of at least one active link	1.3	3.6	3.5
that subsidiary outside the supplier's HQ country (share of those identified)	30.7	33.5	33.5
No parent named, a corporate equity holder with operating products disclosed	23.0	30.4	29.9
holder headquartered outside the supplier's HQ country (share of those disclosed)	47.8	54.6	54.2
holder headquartered in China or Hong Kong (share of those disclosed)	67.0	5.8	9.0
Supplier-years attributed to another country under the parent-or-holder rule	12.6	19.6	19.1
Supplier in midstream refining or processing (RBICS)	10.6	8.5	8.7
Supplier of components (RBICS)	27.5	20.9	21.4

Table S26. The main estimate when suppliers are attributed to their operating subsidiary, parent or owner. Dependent variable: supply-base rule of law with each supplier attributed as stated; stacked difference-in-differences as in Table 1, column 2 (six events, lagged controls, company×event and year×event fixed effects, standard errors clustered by company).

Attribution of each supplier	Coef.	s.e.	95% lo	95% hi	P	N	Exposed
Main outcome (Table 1, column 2; averaged over link records)	−0.064	0.020	−0.103	−0.024	0.002	76,477	237
Headquarters, one value per supplier (reference)	−0.063	0.020	−0.103	−0.024	0.002	76,477	237
Operating subsidiary's headquarters, where identified	−0.061	0.020	−0.101	−0.021	0.003	76,477	237
Parent's headquarters, where named	−0.067	0.020	−0.106	−0.027	<0.001	76,477	237
Parent's, else corporate equity holder's headquarters	−0.045	0.018	−0.081	−0.009	0.015	76,477	237

Table S27. Suppliers added after a restriction, by stage of the value chain. Poisson pseudo-maximum-likelihood estimates of exposed × post on the number of suppliers whose relationship starts in the year, with lagged controls, company×event and year×event fixed effects and standard errors clustered by company (FactSet-covered companies). Stage from RBICS product paths, with priority midstream > upstream > components > other: midstream, primary metals and inorganic chemicals (refining, smelting and processing); upstream, metal-ore and nonmetallic-mineral mining; components, electronic components and products naming semiconductors, batteries or magnets, metal parts and electrical components. Added after events: suppliers added by exposed companies in post-event years. In China or with a parent there: midstream suppliers headquartered in China or Hong Kong or with a FactSet parent there. N: company-years with variation in the outcome (pseudo-likelihood drops company-events with no additions). The stage counts sum to one more than all stages because one supplier added in 2023 is recorded as Chinese only in the stage classification.

Suppliers added per year	Coef.	s.e.	% change	P	Added after events	N
In China: all stages	0.353	0.107	42.3	<0.001	1,406	30,173
In China: midstream processing and refining	0.110	0.181	11.7	0.541	272	5,728
In China: upstream extraction	0.905	1.050	147.2	0.389	6	1,192
In China: components	0.270	0.118	31.0	0.023	509	11,602
In China: other goods and services	0.423	0.129	52.6	0.001	620	27,004
In China or with a parent there: midstream processing and refining	0.111	0.181	11.8	0.537	272	5,754
All countries: midstream	0.165	0.132	18.0	0.212	1,639	34,263
All countries: upstream	0.091	0.296	9.6	0.757	100	7,013
All countries: components	0.205	0.111	22.8	0.064	2,423	52,445
All countries: other goods and services	0.309	0.141	36.2	0.029	5,262	90,993

Table S28. China's imports from Indonesia of nickel ore and of processed nickel. RESSET all-port customs data, imports from Indonesia: HS 2604 (nickel ores and concentrates), HS 720260 (ferro-nickel, including nickel pig iron) and HS 7501 (nickel mattes, oxide sinters and other intermediate products of nickel metallurgy). Indonesia banned ore exports from January 2014, relaxed the ban from January 2017 and reinstated it from January 2020. Indonesia's share: of China's ferro-nickel imports from all partners, by value. Ore quantity for 2016 is missing in the source; values are in current US dollars.

Year	Ore (Mt)	Ore (US$ bn)	Ferro-nickel (US$ bn)	Intermediates (US$ bn)	Indonesia's share (%)
2009	7.2	0.32	0.02	0.24	2
2010	12.2	0.80	0.00	0.17	1
2011	25.6	2.72	0.00	0.19	
2012	33.6	2.96	0.00	0.25	
2013	41.1	3.00	0.00	0.13	0
2014	10.6	0.76	0.02	0.18	2
2015	0.2	0.00	0.29	0.17	17
2016		0.00	0.90	0.11	51
2017	3.9	0.21	1.38	0.09	52
2018	15.0	0.96	0.92	0.01	37
2019	23.8	1.71	2.23	0.11	50
2020	3.4	0.19	4.66	0.00	66
2021	0.9	0.05	6.80	0.24	73
2022	1.1	0.05	13.05	4.54	82
2023	0.3	0.01	14.77	5.56	86
2024	0.0	0.00	12.90	6.31	92
2025	0.0	0.00	15.42	8.15	94

Table S29. Policy shock or secular trend: estimates that allow exposed companies their own trends. Supply-base rule of law, six events, lagged controls, company×event and year×event fixed effects and standard errors clustered by company unless stated. Company-by-event linear trends: a separate intercept and slope in event time for every company-event, estimated over the whole window. Pre-restriction trends, extrapolated: each company-event's linear trend over its pre-restriction years (at least three) is subtracted from its outcome in every year before estimation. Coverage expansion: FactSet began covering Asian public companies in 2013, so only events whose windows begin after 2013 are kept. Suppliers already covered or recorded: supply-base rule of law computed only over suppliers that FactSet covered as companies (in any relationship) or had recorded as suppliers before 1 January of the event year. 2010 rare-earth quotas: the 2010 stack alone, with exposure interacted with fiscal 2010 to 2012 and 2013 to 2014 (company and year fixed effects).

Check	Coef.	s.e.	95% lo	95% hi	P	N	Exposed
Main estimate (Table 1, column 2)	−0.064	0.020	−0.103	−0.024	0.002	76,477	237
Company-by-event linear trends, whole window	−0.055	0.027	−0.107	−0.003	0.040	76,477	237
Company-by-event linear pre-restriction trends, extrapolated	−0.110	0.044	−0.196	−0.024	0.012	59,846	163
Suppliers already recorded as suppliers in FactSet before each event	−0.024	0.020	−0.063	0.015	0.229	75,007	233
Suppliers already covered by FactSet (any relationship) before each event	−0.038	0.020	−0.078	0.001	0.055	75,467	234
Events with windows after FactSet's 2013 coverage expansion (2020, 2023, 2024)	−0.065	0.031	−0.126	−0.005	0.035	51,728	136
2010 rare-earth quotas, exposed × fiscal 2010 to 2012 versus fiscal 2005 to 2009	−0.131	0.073	−0.274	0.012	0.073	13,897	19
2010 rare-earth quotas, exposed × fiscal 2013 to 2014 versus fiscal 2005 to 2009	−0.151	0.070	−0.289	−0.013	0.032	13,897	19

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