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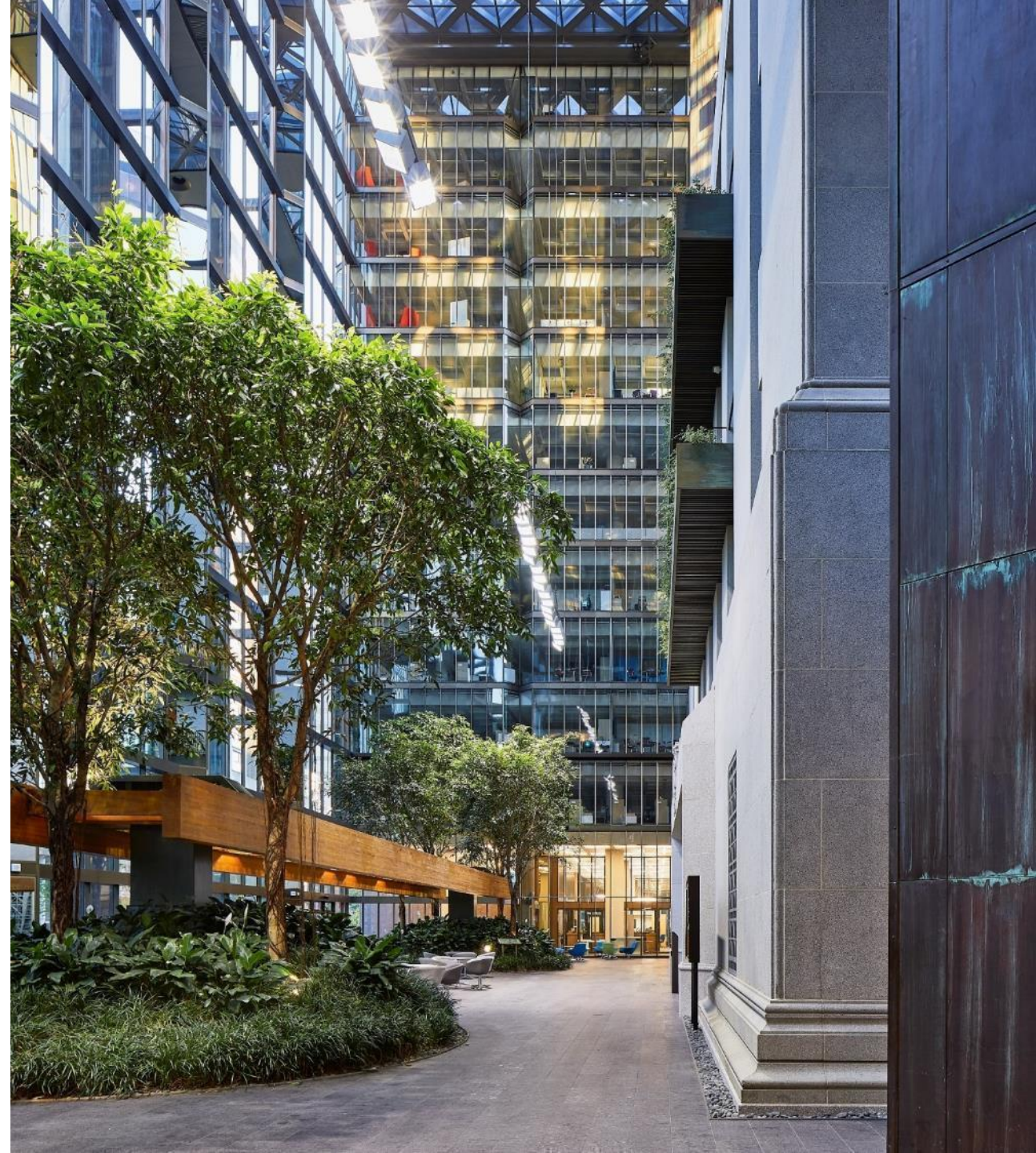
# Shifting Currents: China's Import Realignment

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# What we do in this paper and our main findings

**Research question:** Has China shifted its supply chains toward likeminded countries?

- › We compare two blocs: Beijing-friendly countries vs. countries leaning to the West
- › Method: Difference-in-differences analysis: post-2020 & post-2022 geopolitical shocks

## **Key findings:**

- › Shift detected toward Beijing-friendly countries
- › Concentrated in some sectors → especially raw materials
- › Selective realignment despite geopolitical tensions (not a broad decoupling)

# Motivation

- Increasing global geopolitical tensions
  - › Push for self-reliance and “friend-shoring” worldwide
- China’s policy shift (post-2020)
  - › Dual Circulation Strategy: Boost domestic consumption and innovation to **reduce reliance on foreign inputs**
  - › Xi (2020): “we must tighten international production chains' dependence on China, **forming a powerful countermeasure and deterrent capability against foreigners who would artificially cut off supply [to China]**”
- War in Ukraine and international sanctions (post-2022)
  - › Heightened political demand to increase trade with likeminded-countries

## Short literature review

- Global economic fragmentation:
  - › e.g. Alfrado and Chor (2023); Bosone and Stamato (2024); Gopinath et al. (2024); Pierce and Yu (2023); Qiu et al. (2024)
- China's decoupling from US and EU toward likeminded countries:
  - › Brühl (2025)
- China's use of economic coercion as a policy tool:
  - › e.g. Fuchs and Klann (2013); Kerola et al. (2024)
- Difference-in-differences in trade policy analysis:
  - › e.g. Cigna et al. (2020) & Davis and Ma (2025) (tariffs); Scheckenhofer et al. (2025) (sanctions evasion)

# China-specific criterion for country blocs: countries' position towards Taiwan

- Herscovitch (2025) places UN member states into five categories

**1) Team Taipei:** diplomatic relations with the Republic of China (Taiwan)

**2) Status Quoists:** maintain one-China policies, "take note of" PRC's claim that Taiwan is part of China

**3) Mixed Signallers:** maintain one-China policies, but do not endorse "one-China principle"

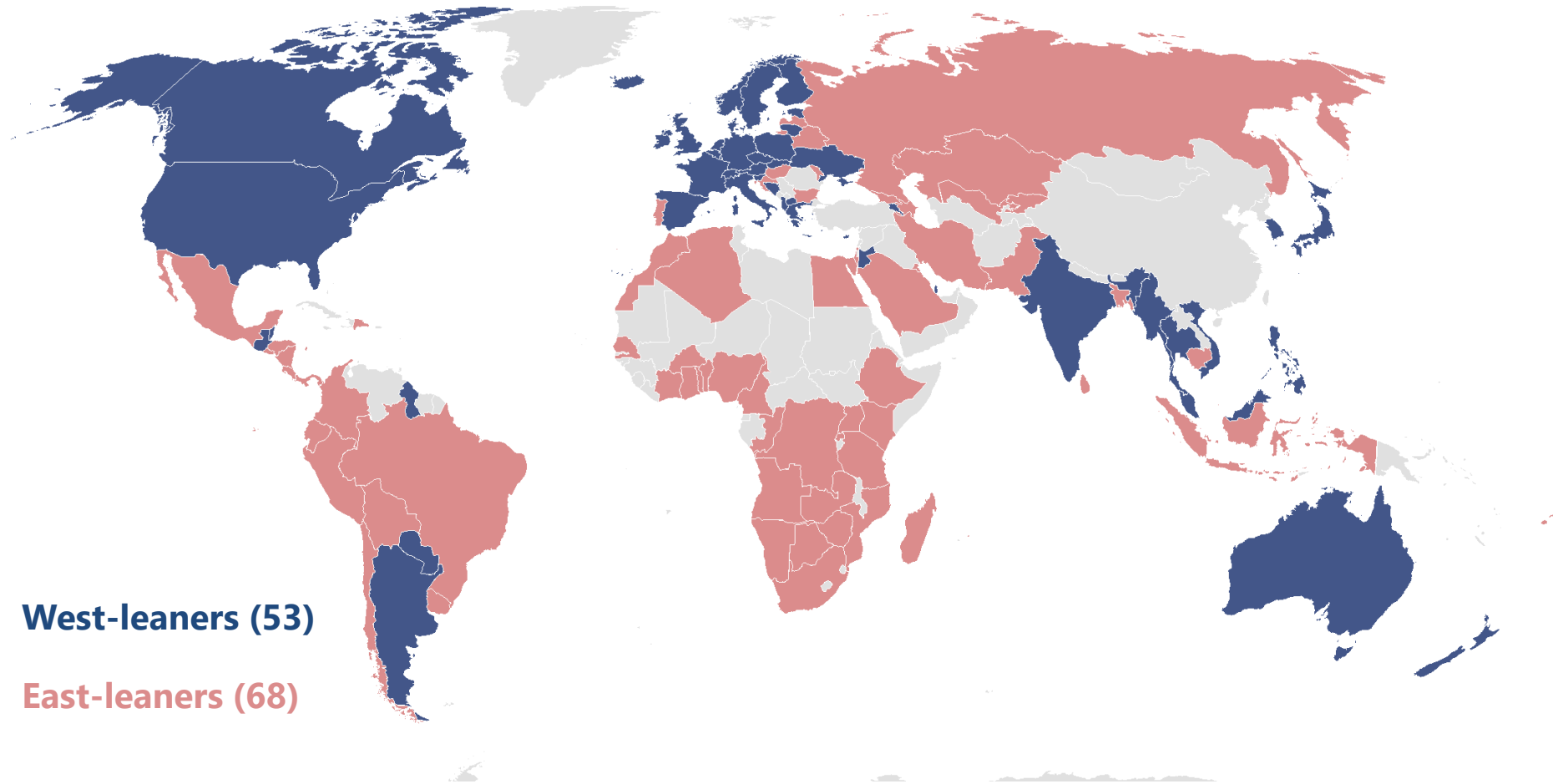
**4) Beijing Leaners:** endorse "one-China principle" and affirm China's sovereignty over Taiwan

**5) Beijing Backers:** support PRC to achieve reunification without specifying that the efforts should be peaceful

**West-leaning  
countries**

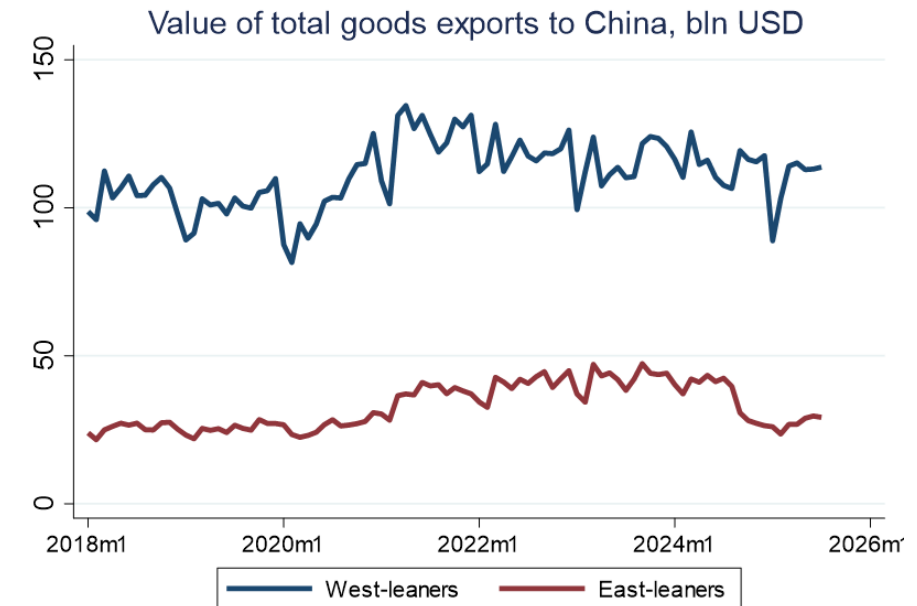
**East-leaning  
countries**

## Our sample of 121 countries



# Detailed goods trade data

- Exports to China + HK from 121 countries
  - › January 2018-July 2025, monthly frequency
- HS6-digit level data from Global Trade Tracker
  - › Total exports
  - › Breakdown by HS sections and subsections
  - › Sanctioned goods: common high priority items & economically critical goods (EU definition)
- Trade value in USD and volume in kg



Source: Global Trade Tracker and authors' calculations.  
Note: Value of exports to China and Hong Kong.

## Estimated equation: difference-in-differences

$$y_{c,i,t} = \beta_0 + \beta_1(d_c * T_t) + \beta_2 d_c + \beta_3 T_t + \alpha_c + u_{i,t}$$

- $y_{c,i,t} = \frac{X_{c,i,t}}{\sum_{c=1}^C X_{c,i,t}}$  : share (in %) of country  $c$ 's exports to China in the total exports to China by all countries in the sample for product group  $i$  at month  $t$
- $d$  treatment indicator = 1 for Western bloc countries
- $T$  time dummies: either annual OR monthly dummies
- $\beta_2$  permanent differences between two country groups
- $\beta_3$  time-variant trend common to both groups
- $\alpha_c$  country fixed effect
- $\beta_1$  diff-in-diff estimate = remaining differences in  $y$  between the two groups

# Total import shares in the different groups, $y_{c,i,t}$

## West-leaners' share of Chinese imports (total)

|               | 2019  | 2020  | 2021  | 2022  | 2023  | 2024  | 2025  |
|---------------|-------|-------|-------|-------|-------|-------|-------|
| <b>Mean</b>   | 1.51  | 1.50  | 1.48  | 1.41  | 1.38  | 1.49  | 1.78  |
| <b>Median</b> | 0.28  | 0.33  | 0.31  | 0.22  | 0.20  | 0.25  | 0.31  |
| <b>Min</b>    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| <b>Max</b>    | 12.07 | 12.30 | 11.59 | 11.22 | 10.73 | 10.70 | 11.98 |

## East-leaners' share of Chinese imports (total)

|               | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|---------------|------|------|------|------|------|------|------|
| <b>Mean</b>   | 0.32 | 0.33 | 0.37 | 0.42 | 0.47 | 0.45 | 0.50 |
| <b>Median</b> | 0.03 | 0.02 | 0.03 | 0.03 | 0.04 | 0.04 | 0.04 |
| <b>Min</b>    | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| <b>Max</b>    | 4.71 | 5.91 | 6.25 | 7.82 | 7.02 | 6.88 | 7.36 |

# Results: total exports to China

- Estimation results with annual dummies and West-leaning group's interactions. Trade value.

| VARIABLES            | total                |
|----------------------|----------------------|
| _2018_west           | 0.068**<br>(0.035)   |
| _2020_west           | -0.019<br>(0.035)    |
| _2021_west           | -0.104***<br>(0.035) |
| _2022_west           | -0.197***<br>(0.035) |
| _2023_west           | -0.263***<br>(0.035) |
| _2024_west           | -0.167***<br>(0.036) |
| _2025_west           | 0.019<br>(0.041)     |
| Constant             | 0.711***<br>(0.009)  |
| Observations         | 10,249               |
| R-squared            | 0.020                |
| Number of country_id | 121                  |

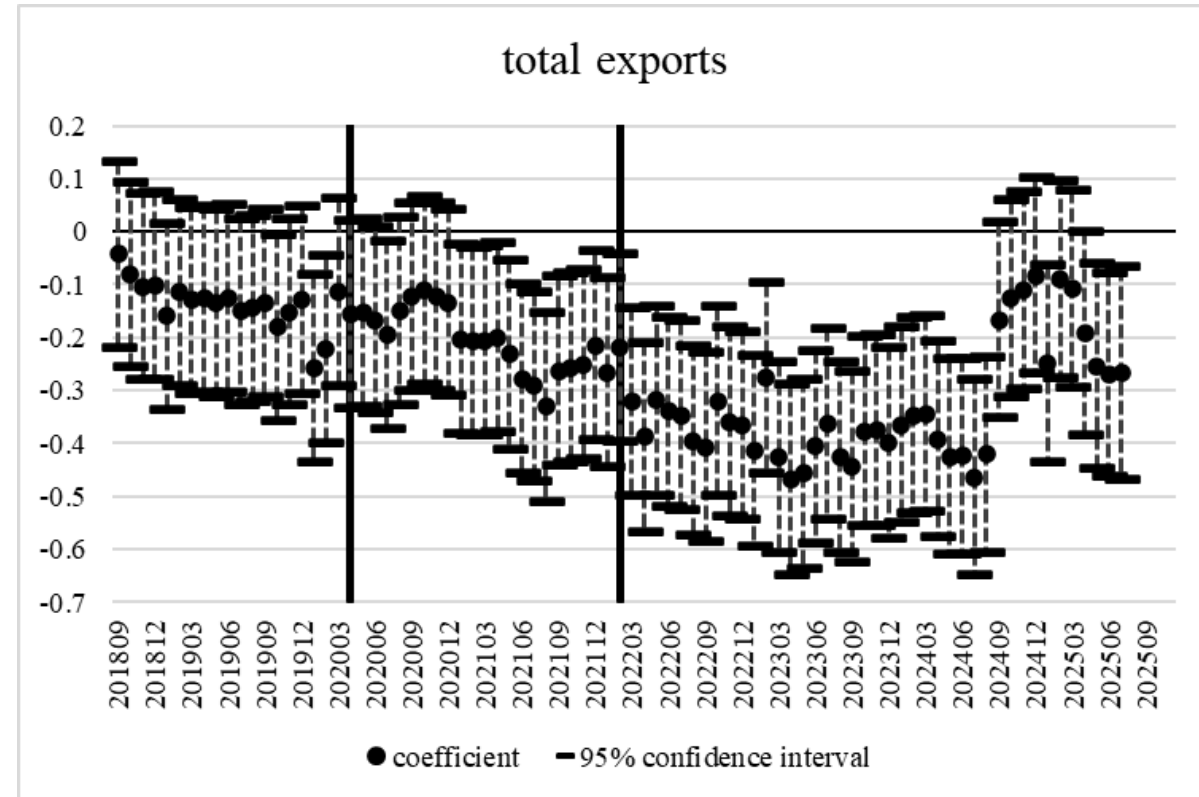
Standard errors in parentheses  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

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- Monthly difference-in-differences parameter estimates and their 95 % confidence intervals.

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# Results: by different goods sections

- Estimation results with annual dummies and West-leaning group's interactions. Trade value.

| VARIABLES            | live<br>animals,<br>animal<br>products<br>sec1 | vegetable<br>products<br>sec2 | animal or<br>vegetable<br>fats and<br>oils, waxes<br>sec3 | prepared<br>foodstuffs,<br>beverages,<br>tobacco<br>sec4 | mineral<br>products<br>sec5 | chemicals<br>sec6    | plastic and<br>rubber<br>sec7 | textiles,<br>footwear<br>sec81112 | wood and<br>pulp<br>sec910 | articles of<br>stone,<br>plaster,<br>cement<br>sec13 | pearls,<br>stones,<br>precious<br>metals<br>sec14 | base metals<br>and articles<br>thereof<br>sec15 | machinery,<br>electrical<br>equipment<br>sec16 | vehicles<br>and aircraft<br>sec17 | optical,<br>photographi<br>c,<br>measuring,<br>surgical<br>instruments<br>sec18 | arms and<br>ammunition<br>sec19 | misc. and<br>arts<br>sec2021 |
|----------------------|------------------------------------------------|-------------------------------|-----------------------------------------------------------|----------------------------------------------------------|-----------------------------|----------------------|-------------------------------|-----------------------------------|----------------------------|------------------------------------------------------|---------------------------------------------------|-------------------------------------------------|------------------------------------------------|-----------------------------------|---------------------------------------------------------------------------------|---------------------------------|------------------------------|
| _2018_west           | 0.076<br>(0.075)                               | -0.398*<br>(0.227)            | 0.148<br>(0.269)                                          | 0.057<br>(0.072)                                         | -0.062<br>(0.117)           | -0.027<br>(0.098)    | 0.115<br>(0.102)              | 0.407***<br>(0.093)               | 0.085<br>(0.097)           | 0.031<br>(0.115)                                     | 0.062<br>(0.260)                                  | 0.139<br>(0.112)                                | 0.069<br>(0.092)                               | 0.002<br>(0.179)                  | 0.013<br>(0.100)                                                                | 17.008<br>(11.262)              | 0.239<br>(0.167)             |
| _2020_west           | -0.027<br>(0.075)                              | 0.246<br>(0.227)              | 0.430*<br>(0.259)                                         | -0.009<br>(0.072)                                        | 0.262**<br>(0.117)          | 0.070<br>(0.097)     | -0.017<br>(0.101)             | -0.047<br>(0.093)                 | -0.014<br>(0.097)          | -0.047<br>(0.114)                                    | -0.164<br>(0.261)                                 | -0.171<br>(0.113)                               | 0.017<br>(0.092)                               | 0.024<br>(0.180)                  | -0.008<br>(0.100)                                                               | 0.182<br>(6.304)                | 0.020<br>(0.170)             |
| _2021_west           | -0.032<br>(0.075)                              | 0.364<br>(0.228)              | -0.327<br>(0.260)                                         | -0.170**<br>(0.072)                                      | 0.057<br>(0.117)            | -0.000<br>(0.098)    | 0.025<br>(0.101)              | -0.018<br>(0.094)                 | -0.007<br>(0.098)          | -0.036<br>(0.114)                                    | 0.018<br>(0.261)                                  | -0.172<br>(0.111)                               | 0.023<br>(0.092)                               | 0.012<br>(0.178)                  | -0.046<br>(0.100)                                                               | 0.576<br>(6.540)                | 0.031<br>(0.167)             |
| _2022_west           | -0.294***<br>(0.076)                           | 0.280<br>(0.230)              | -0.730***<br>(0.270)                                      | -0.227***<br>(0.073)                                     | -0.114<br>(0.117)           | -0.137<br>(0.098)    | 0.012<br>(0.102)              | 0.053<br>(0.094)                  | -0.099<br>(0.098)          | 0.054<br>(0.115)                                     | 0.158<br>(0.259)                                  | -0.627***<br>(0.111)                            | 0.020<br>(0.092)                               | -0.071<br>(0.177)                 | -0.050<br>(0.101)                                                               | -10.008<br>(6.770)              | 0.026<br>(0.169)             |
| _2023_west           | -0.384***<br>(0.076)                           | -0.123<br>(0.231)             | -1.618***<br>(0.272)                                      | -0.252***<br>(0.073)                                     | -0.354***<br>(0.118)        | -0.093<br>(0.098)    | 0.034<br>(0.102)              | 0.005<br>(0.094)                  | -0.188*<br>(0.098)         | 0.052<br>(0.115)                                     | 0.116<br>(0.262)                                  | -0.685***<br>(0.112)                            | 0.023<br>(0.092)                               | 0.038<br>(0.178)                  | -0.040<br>(0.100)                                                               | -2.705<br>(6.904)               | 0.006<br>(0.169)             |
| _2024_west           | -0.409***<br>(0.078)                           | 0.088<br>(0.234)              | -1.026***<br>(0.275)                                      | -0.258***<br>(0.073)                                     | -0.487***<br>(0.119)        | -0.042<br>(0.099)    | 0.011<br>(0.103)              | -0.004<br>(0.096)                 | -0.292***<br>(0.100)       | 0.087<br>(0.116)                                     | 0.181<br>(0.266)                                  | -0.673***<br>(0.113)                            | 0.035<br>(0.093)                               | 0.018<br>(0.179)                  | -0.029<br>(0.101)                                                               | -4.402<br>(6.711)               | -0.010<br>(0.170)            |
| _2025_west           | -0.502***<br>(0.090)                           | -0.448*<br>(0.267)            | -2.151***<br>(0.311)                                      | -0.203**<br>(0.085)                                      | -1.011***<br>(0.149)        | -0.329***<br>(0.123) | -0.225*<br>(0.127)            | -0.217*<br>(0.122)                | -0.798***<br>(0.125)       | -0.350**<br>(0.144)                                  | -0.220<br>(0.325)                                 | -1.173***<br>(0.149)                            | -0.307**<br>(0.125)                            | -0.354<br>(0.235)                 | -0.517***<br>(0.131)                                                            | 1.069<br>(11.704)               | -0.408*<br>(0.210)           |
| Constant             | 1.048***<br>(0.024)                            | 1.086***<br>(0.074)           | 1.717***<br>(0.088)                                       | 0.975***<br>(0.021)                                      | 1.070***<br>(0.040)         | 0.982***<br>(0.033)  | 0.937***<br>(0.035)           | 0.862***<br>(0.033)               | 1.010***<br>(0.033)        | 0.991***<br>(0.041)                                  | 1.138***<br>(0.067)                               | 0.872***<br>(0.036)                             | 0.678***<br>(0.029)                            | 1.386***<br>(0.060)               | 0.997***<br>(0.034)                                                             | 6.960***<br>(0.992)             | 1.156***<br>(0.054)          |
| Observations         | 8,298                                          | 7,873                         | 5,159                                                     | 8,411                                                    | 8,020                       | 8,128                | 7,829                         | 8,720                             | 8,338                      | 6,269                                                | 6,465                                             | 8,639                                           | 8,604                                          | 6,249                             | 7,074                                                                           | 1,173                           | 6,878                        |
| R-squared            | 0.015                                          | 0.003                         | 0.026                                                     | 0.007                                                    | 0.021                       | 0.006                | 0.006                         | 0.015                             | 0.014                      | 0.007                                                | 0.002                                             | 0.021                                           | 0.005                                          | 0.004                             | 0.007                                                                           | 0.010                           | 0.004                        |
| Number of country_id | 121                                            | 120                           | 109                                                       | 121                                                      | 115                         | 120                  | 120                           | 120                               | 118                        | 117                                                  | 115                                               | 120                                             | 120                                            | 119                               | 120                                                                             | 44                              | 119                          |

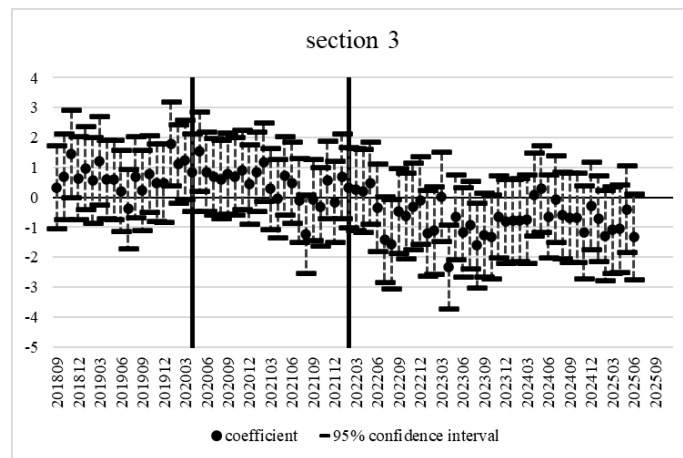
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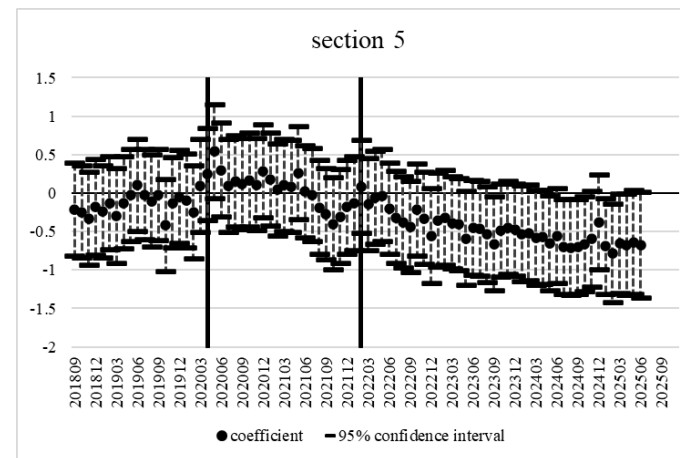
# Results: by different goods sections

- Monthly difference-in-differences parameter estimates and their 95 % confidence intervals.

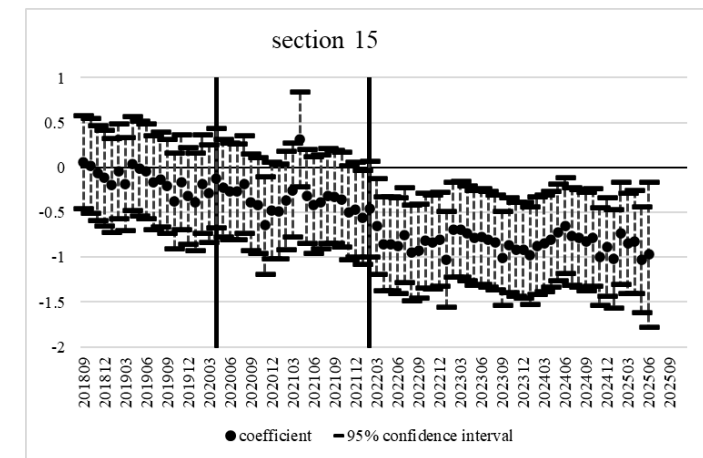
Animal or vegetable fats and oils



Mineral products



Base metals and articles of base metals



Source: Global Trade Tracker and authors' estimations.

Note: The first of the two vertical lines denotes April 2020, the introduction of the Dual Circulation Strategy by President Xi Jinping. The second line denotes February 2022, the onset of Russia's full-scale invasion of Ukraine.

# Results: by subcategories – base metals and mineral products

- Estimation results with annual dummies and west-leader interactions.

## Subcategories of section 5

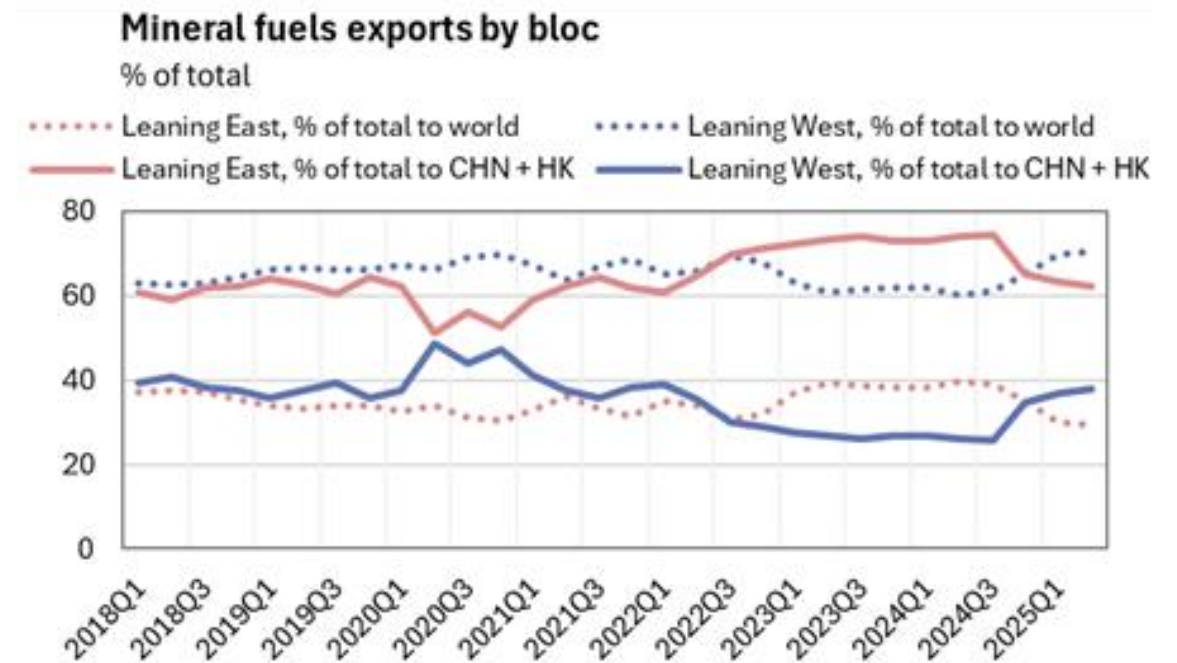
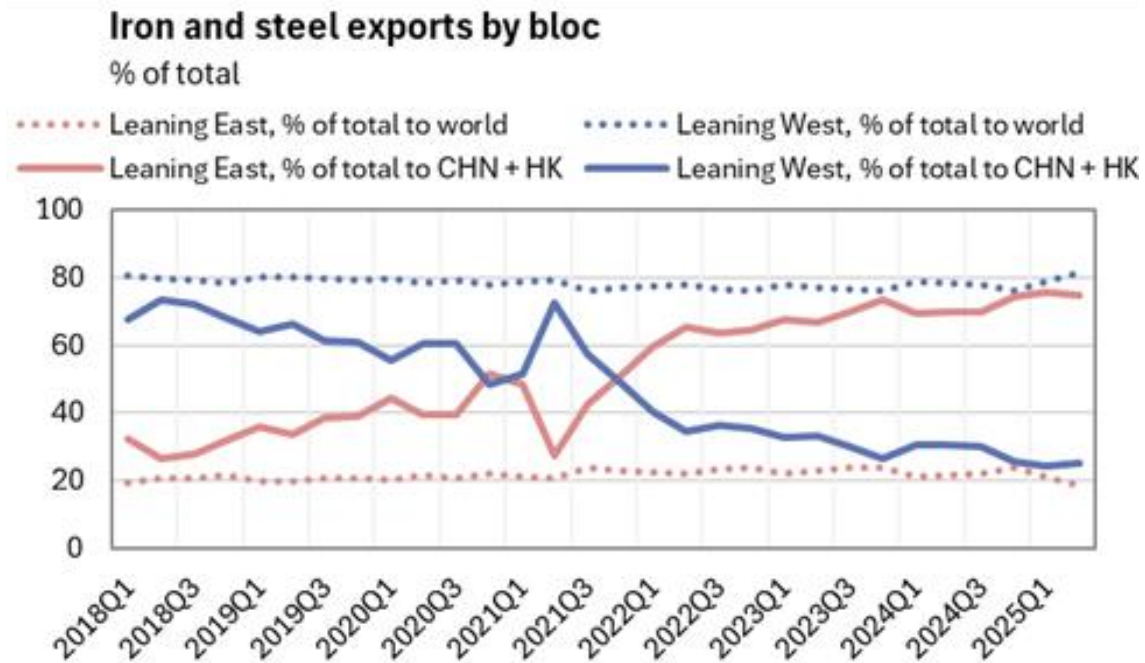
### Subcategories of section 15

| VARIABLES            | iron and steel<br>sub72 | articles of iron and steel<br>sub73 | copper and articles thereof<br>sub74 | nickel and articles thereof<br>sub75 | aluminium and articles thereof<br>sub76 | lead and articles thereof<br>sub78 | zinc and articles thereof<br>sub79 | tin and articles thereof<br>sub80 | other base metals, cermets, articles thereof<br>sub81 | tools, implements, cutlery, parts thereof of base metal<br>sub82 | miscellaneous articles of base metal<br>sub83 | salt, sulphur, earths and stone, plastering materials, lime and cement<br>sub25 | ores, slag and ash<br>sub26 | mineral fuels, mineral oils and products of their distillation, mineral waxes<br>sub27 |
|----------------------|-------------------------|-------------------------------------|--------------------------------------|--------------------------------------|-----------------------------------------|------------------------------------|------------------------------------|-----------------------------------|-------------------------------------------------------|------------------------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------|-----------------------------|----------------------------------------------------------------------------------------|
| _2018_west           | 0.683**<br>(0.300)      | 0.060<br>(0.045)                    | -0.275*<br>(0.156)                   | -0.119<br>(0.222)                    | 0.026<br>(0.072)                        | 0.027<br>(0.031)                   | 0.381***<br>(0.055)                | 0.032<br>(0.062)                  | -0.000<br>(0.020)                                     | 0.040<br>(0.029)                                                 | 0.026<br>(0.016)                              | 0.175<br>(0.275)                                                                | -0.304***<br>(0.108)        | 0.151<br>(0.195)                                                                       |
| _2020_west           | -0.623**<br>(0.301)     | -0.330***<br>(0.045)                | 0.036<br>(0.158)                     | -0.499**<br>(0.230)                  | -0.108<br>(0.071)                       | -0.035<br>(0.030)                  | 0.036<br>(0.055)                   | -0.102<br>(0.064)                 | -0.007<br>(0.020)                                     | -0.159***<br>(0.030)                                             | -0.087***<br>(0.016)                          | -0.016<br>(0.273)                                                               | 0.212*<br>(0.108)           | 0.354*<br>(0.199)                                                                      |
| _2021_west           | -1.092***<br>(0.297)    | -0.415**<br>(0.044)                 | 0.355**<br>(0.155)                   | 0.026<br>(0.220)                     | -0.058<br>(0.069)                       | -0.044<br>(0.031)                  | 0.028<br>(0.054)                   | -0.019<br>(0.062)                 | -0.031<br>(0.020)                                     | -0.182***<br>(0.030)                                             | -0.096***<br>(0.016)                          | 0.059<br>(0.270)                                                                | -0.056<br>(0.109)           | 0.239<br>(0.198)                                                                       |
| _2022_west           | -2.201***<br>(0.300)    | -0.515***<br>(0.044)                | 0.130<br>(0.154)                     | -0.894***<br>(0.225)                 | -0.168**<br>(0.070)                     | -0.036<br>(0.037)                  | 0.034<br>(0.057)                   | -0.750***<br>(0.066)              | -0.048**<br>(0.020)                                   | -0.221***<br>(0.030)                                             | -0.124***<br>(0.016)                          | 0.441<br>(0.270)                                                                | -0.153<br>(0.109)           | -0.017<br>(0.200)                                                                      |
| _2023_west           | -2.604***<br>(0.297)    | -0.478**<br>(0.044)                 | 0.209<br>(0.154)                     | -1.302***<br>(0.227)                 | -0.286***<br>(0.069)                    | -0.024<br>(0.033)                  | 0.086<br>(0.056)                   | -0.728***<br>(0.063)              | -0.055***<br>(0.020)                                  | -0.219***<br>(0.029)                                             | -0.125***<br>(0.016)                          | 0.332<br>(0.273)                                                                | -0.237**<br>(0.110)         | -0.483**<br>(0.198)                                                                    |
| _2024_west           | -2.743***<br>(0.303)    | -0.393***<br>(0.044)                | 0.424***<br>(0.153)                  | -2.591***<br>(0.227)                 | -0.212***<br>(0.068)                    | -0.022<br>(0.030)                  | 0.082<br>(0.056)                   | -0.640***<br>(0.063)              | -0.032<br>(0.021)                                     | -0.196***<br>(0.029)                                             | -0.105***<br>(0.016)                          | -0.072<br>(0.275)                                                               | -0.561***<br>(0.111)        | -0.382*<br>(0.200)                                                                     |
| _2025_west           | -3.336***<br>(0.491)    | -0.425***<br>(0.070)                | 0.493**<br>(0.241)                   | -2.695***<br>(0.359)                 | 0.049<br>(0.105)                        | -0.018<br>(0.048)                  | -0.015<br>(0.091)                  | -0.639***<br>(0.092)              | -0.084**<br>(0.034)                                   | -0.200***<br>(0.047)                                             | -0.099***<br>(0.025)                          | 0.034<br>(0.331)                                                                | -1.049***<br>(0.132)        | -1.498***<br>(0.239)                                                                   |
| Constant             | 1.773***<br>(0.100)     | 0.610***<br>(0.015)                 | 1.843***<br>(0.055)                  | 0.347***<br>(0.066)                  | 0.299***<br>(0.025)                     | 0.055***<br>(0.009)                | 0.264***<br>(0.017)                | 0.016<br>(0.015)                  | 0.143***<br>(0.006)                                   | 0.282***<br>(0.010)                                              | 0.179***<br>(0.005)                           | 1.410***<br>(0.096)                                                             | 1.614***<br>(0.038)         | 1.689***<br>(0.067)                                                                    |
| Observations         | 4,785                   | 5,748                               | 6,520                                | 2,771                                | 6,144                                   | 1,759                              | 3,005                              | 1,832                             | 3,193                                                 | 4,438                                                            | 4,702                                         | 6,424                                                                           | 5,600                       | 5,385                                                                                  |
| R-squared            | 0.050                   | 0.120                               | 0.036                                | 0.095                                | 0.021                                   | 0.042                              | 0.079                              | 0.205                             | 0.024                                                 | 0.120                                                            | 0.111                                         | 0.002                                                                           | 0.026                       | 0.030                                                                                  |
| Number of country_id | 99                      | 98                                  | 93                                   | 64                                   | 97                                      | 69                                 | 73                                 | 53                                | 72                                                    | 96                                                               | 94                                            | 109                                                                             | 102                         | 107                                                                                    |

Standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

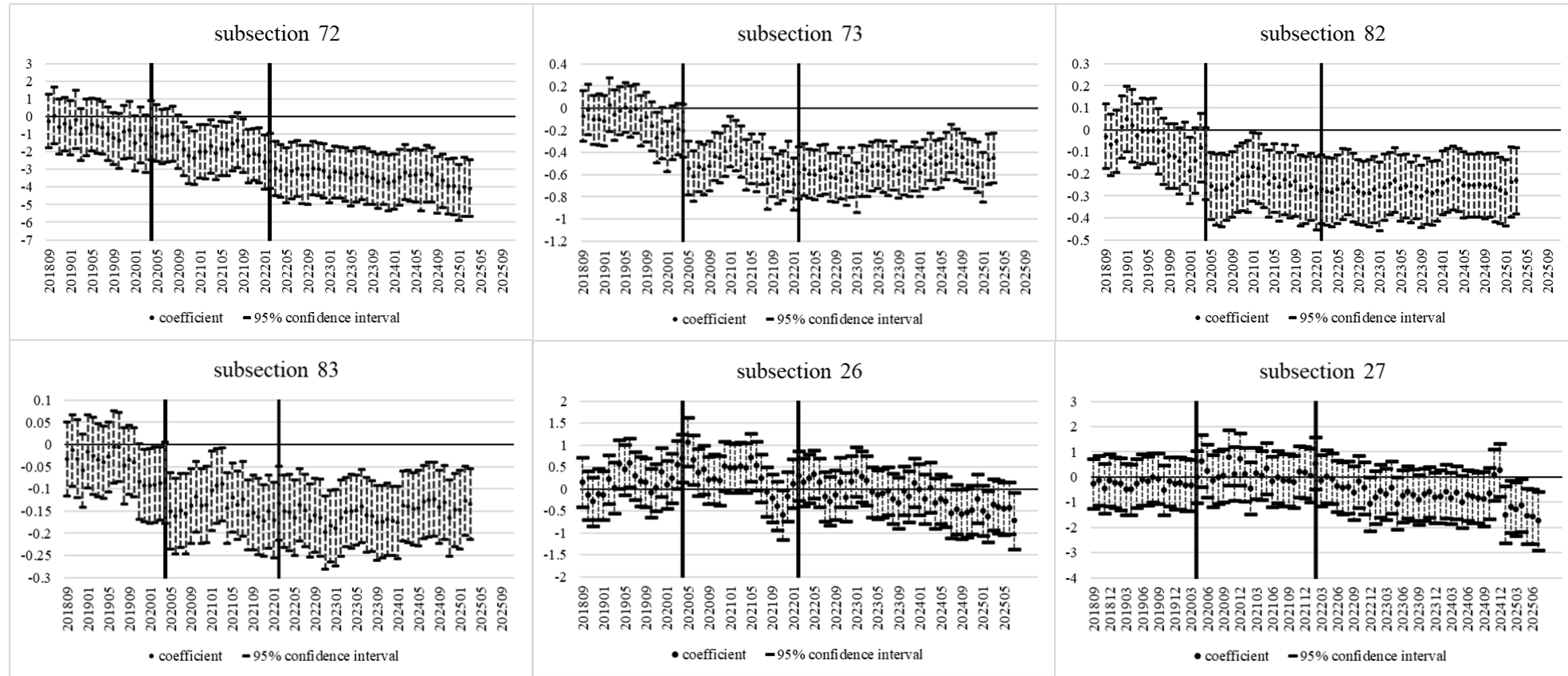
# Results in context: iron and steel (subcategory 72) and mineral fuels (subcategory 27)



Source: Global Trade Tracker and authors' estimations.

# Results: By subcategories - base metals & mineral products

- Monthly difference-in-differences parameter estimates and their 95 % confidence intervals. Subcategories of section 15 and 5 goods.



Source: Global Trade Tracker and authors' estimations.

Note: The first of the two vertical lines denotes April 2020, the introduction of the Dual Circulation Strategy by President Xi Jinping. The second line denotes February 2022, the onset of Russia's full-scale invasion of Ukraine.

# Results: Sanctioned goods

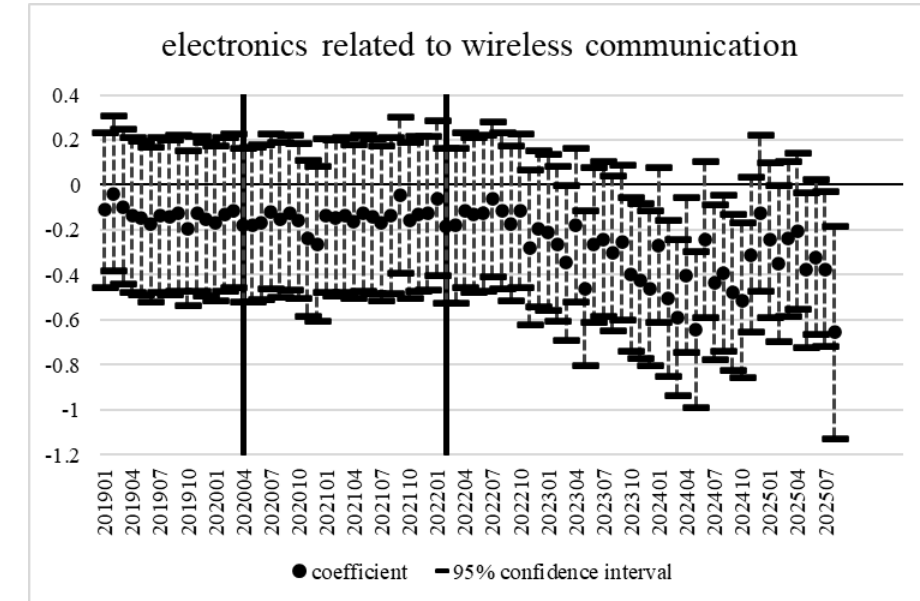
- Estimation results with annual dummies and west-leaning interactions. Sanctioned goods.

| VARIABLES            | non-sanctioned goods | Common high priority items | Integrated circuits | Electronics related to wireless communication | discrete electronic components, electrical plugs and connectors, navigation equipment | mechanical and non-electronic components | manufacturing equipment for production of electronic components and circuits | computer numerical control machine tools for working metal | economically critical goods: e.g., articles of iron and steel, machinery, electronics, vehicles, ships |
|----------------------|----------------------|----------------------------|---------------------|-----------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| _2018_west           | 0.077*<br>(0.042)    | 0.045<br>(0.054)           | 0.033<br>(0.060)    | 0.059<br>(0.067)                              | 0.093<br>(0.083)                                                                      | 0.006<br>(0.210)                         | 0.027<br>(0.104)                                                             | 0.002<br>(0.089)                                           | 0.008<br>(0.041)                                                                                       |
| _2020_west           | -0.009<br>(0.042)    | -0.017<br>(0.054)          | -0.027<br>(0.059)   | -0.015<br>(0.068)                             | -0.018<br>(0.083)                                                                     | -0.024<br>(0.209)                        | 0.008<br>(0.103)                                                             | -0.000<br>(0.088)                                          | 0.005<br>(0.041)                                                                                       |
| _2021_west           | -0.086**<br>(0.043)  | -0.002<br>(0.054)          | -0.007<br>(0.059)   | 0.019<br>(0.068)                              | -0.025<br>(0.083)                                                                     | -0.028<br>(0.209)                        | 0.005<br>(0.103)                                                             | -0.002<br>(0.088)                                          | -0.024<br>(0.041)                                                                                      |
| _2022_west           | -0.183***<br>(0.042) | -0.009<br>(0.054)          | -0.008<br>(0.059)   | -0.033<br>(0.068)                             | -0.025<br>(0.083)                                                                     | -0.050<br>(0.210)                        | -0.011<br>(0.103)                                                            | -0.001<br>(0.088)                                          | -0.049<br>(0.041)                                                                                      |
| _2023_west           | -0.264***<br>(0.042) | -0.010<br>(0.054)          | 0.010<br>(0.060)    | -0.231***<br>(0.068)                          | -0.047<br>(0.083)                                                                     | -0.030<br>(0.210)                        | -0.003<br>(0.103)                                                            | -0.003<br>(0.088)                                          | -0.077*<br>(0.041)                                                                                     |
| _2024_west           | -0.152***<br>(0.043) | -0.002<br>(0.054)          | 0.008<br>(0.060)    | -0.198***<br>(0.068)                          | -0.034<br>(0.084)                                                                     | -0.036<br>(0.210)                        | 0.024<br>(0.103)                                                             | -0.009<br>(0.088)                                          | -0.035<br>(0.041)                                                                                      |
| _2025_west           | -0.210***<br>(0.051) | 0.059<br>(0.064)           | 0.068<br>(0.075)    | -0.134<br>(0.082)                             | 0.046<br>(0.100)                                                                      | 0.053<br>(0.266)                         | 0.154<br>(0.132)                                                             | 0.142<br>(0.119)                                           | -0.042<br>(0.065)                                                                                      |
| Constant             | 0.971***<br>(0.015)  | 0.980***<br>(0.019)        | 1.019***<br>(0.021) | 1.008***<br>(0.024)                           | 0.992***<br>(0.029)                                                                   | 1.022***<br>(0.074)                      | 1.024***<br>(0.036)                                                          | 1.043***<br>(0.031)                                        | 1.010***<br>(0.015)                                                                                    |
| Observations         | 9,407                | 9,428                      | 9,096               | 9,459                                         | 9,304                                                                                 | 9,069                                    | 9,020                                                                        | 8,872                                                      | 8,613                                                                                                  |
| R-squared            | 0.015                | 0.001                      | 0.001               | 0.004                                         | 0.001                                                                                 | 0.000                                    | 0.000                                                                        | 0.001                                                      | 0.001                                                                                                  |
| Number of country_id | 119                  | 119                        | 110                 | 117                                           | 119                                                                                   | 113                                      | 111                                                                          | 106                                                        | 99                                                                                                     |

Standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

- Monthly difference-in-differences parameter estimates and their 95 % confidence intervals.



Source: Global Trade Tracker and authors' estimations.

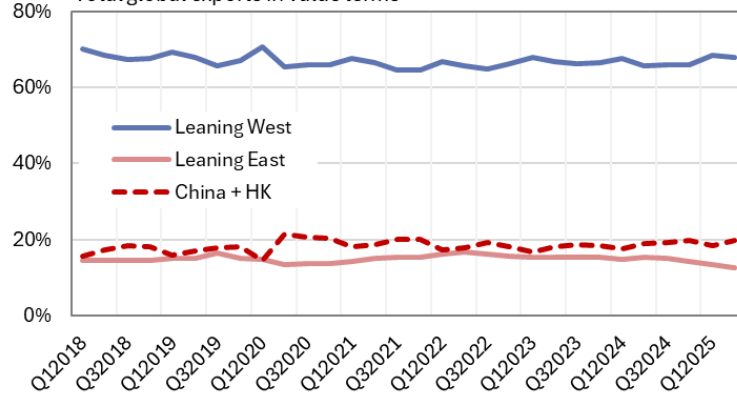
## Discussion of results

- Industries dominated by SOEs are likely the key implementers of politically motivated shifts in trade patterns
  - › For example, bans on Australian coal and agricultural products during 2020–2023
- Many goods imported from the West-leaning countries are hard to replace
  - › High-tech components and advanced machinery
  - › No evidence that China has been able to find East-leaning suppliers to replace advanced technology products that are currently subject to export restrictions by some Western countries
- Policy-driven shifts are feasible only if alternative suppliers are readily available or domestic production can be increased easily
  - › Import realignment is not visible in the majority of electronic and dual-use goods, whose exports to Russia are currently under Western sanctions

# Results are not driven by West's declining global market share

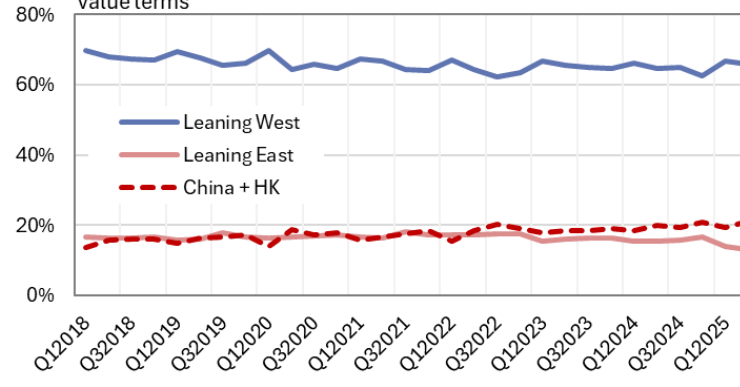
**Market shares of country blocs**

Total global exports in value terms



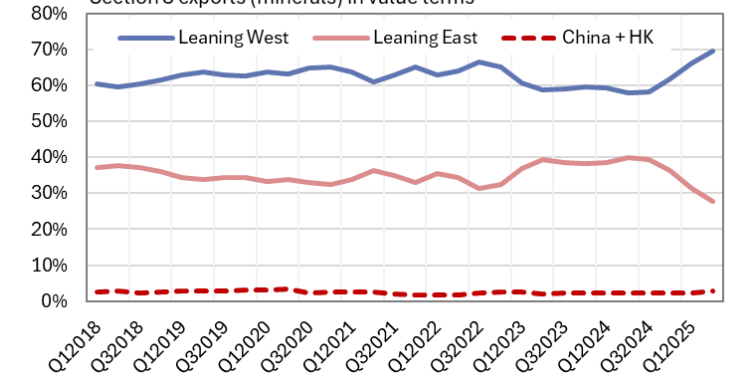
**Market shares of country blocs**

Section 15 exports (base metals and articles of base metal) in value terms



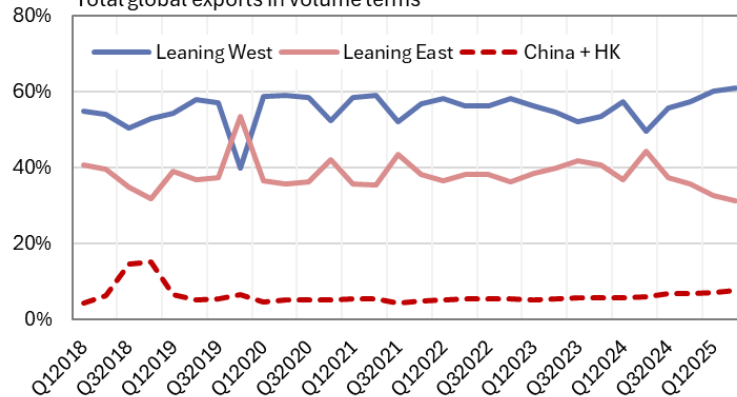
**Market shares of country blocs**

Section 5 exports (minerals) in value terms



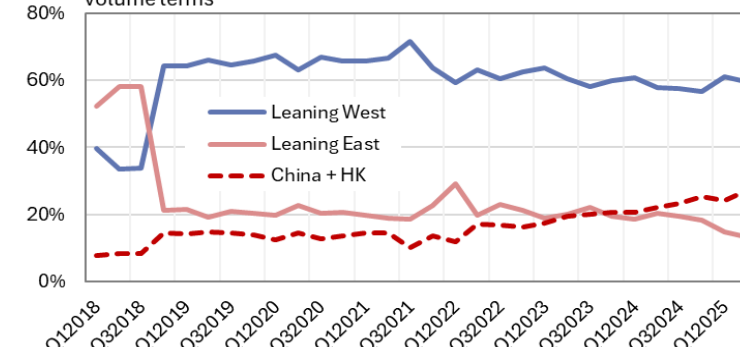
**Market shares of country blocs**

Total global exports in volume terms



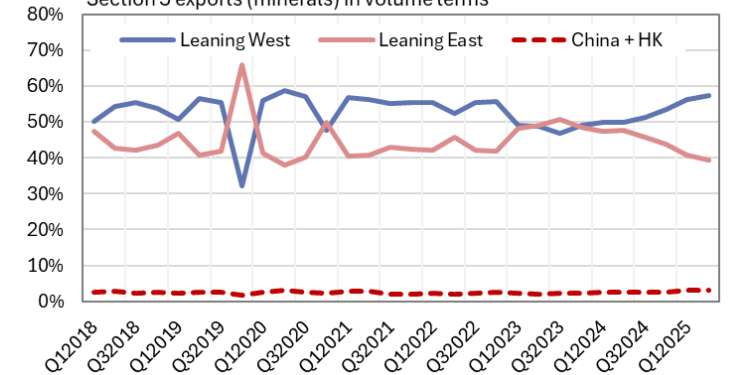
**Market shares of country blocs**

Section 15 exports (base metals and articles of base metals) in volume terms



**Market shares of country blocs**

Section 5 exports (minerals) in volume terms



## Robustness checks

- The results remain consistent when accounting for potential sources of bias and alternative definitions of geopolitical groupings:
  - 1) Using **volumes instead of values** – findings remain robust, including for base metals and minerals
  - 2) **Excluding Russia from the sample** – findings remain robust, including for base metals and minerals
  - 3) A **three-bloc (east-neutral-west) geopolitical classification** – stronger results for the West-leaning bloc than for the neutral group, reinforcing our main findings
  - 4) Alternative **geopolitical classification**: West-leaning bloc include **countries imposing sanctions on Russia** – results are broadly consistent with the baseline analysis
  - 5) Using the **log of export value**, rather than the export share of each country – results are not sensitive to the choice of measurement
  - 6) Utilising **China's reported import** rather than exporters' reported export data – results are not sensitive to the use of mirror statistics

## Conclusions

- China began reducing its imports from the West-leaning countries in 2020, and the trend has intensified since then.
  - › Both value and volume data support these findings.
- Shifts are concentrated mostly in raw materials, especially mineral products and base metals, as well as agricultural and wood products
  - › A West-leaning country's import share in value terms is 3.3 p.p. lower for iron and steel, 2.7 p.p. for nickel, and 1.5 p.p. for mineral fuels and oils in 2025 compared to an East-leaning country.
- Broader realignment, especially in higher value-added products, is likely constrained by a lack of substitutes and high-tech reliance.
- Current shifts may reflect early stages of a strategic transition — domestic capacity building and supplier diversification take time.

A low-angle, upward-looking perspective of several modern skyscrapers with glass facades. The buildings are arranged in a way that they appear to converge towards the top of the frame, creating a strong sense of height and scale. The glass reflects the sky and clouds, adding depth and texture to the image. The sky is a vibrant blue with scattered white clouds. A semi-transparent dark grey horizontal band is positioned across the middle of the image, serving as a background for the text.

Thank you!

# Results: Goods section results in volumes

- Estimation results with annual dummies and west-leaning interactions. All goods sections in volumes.

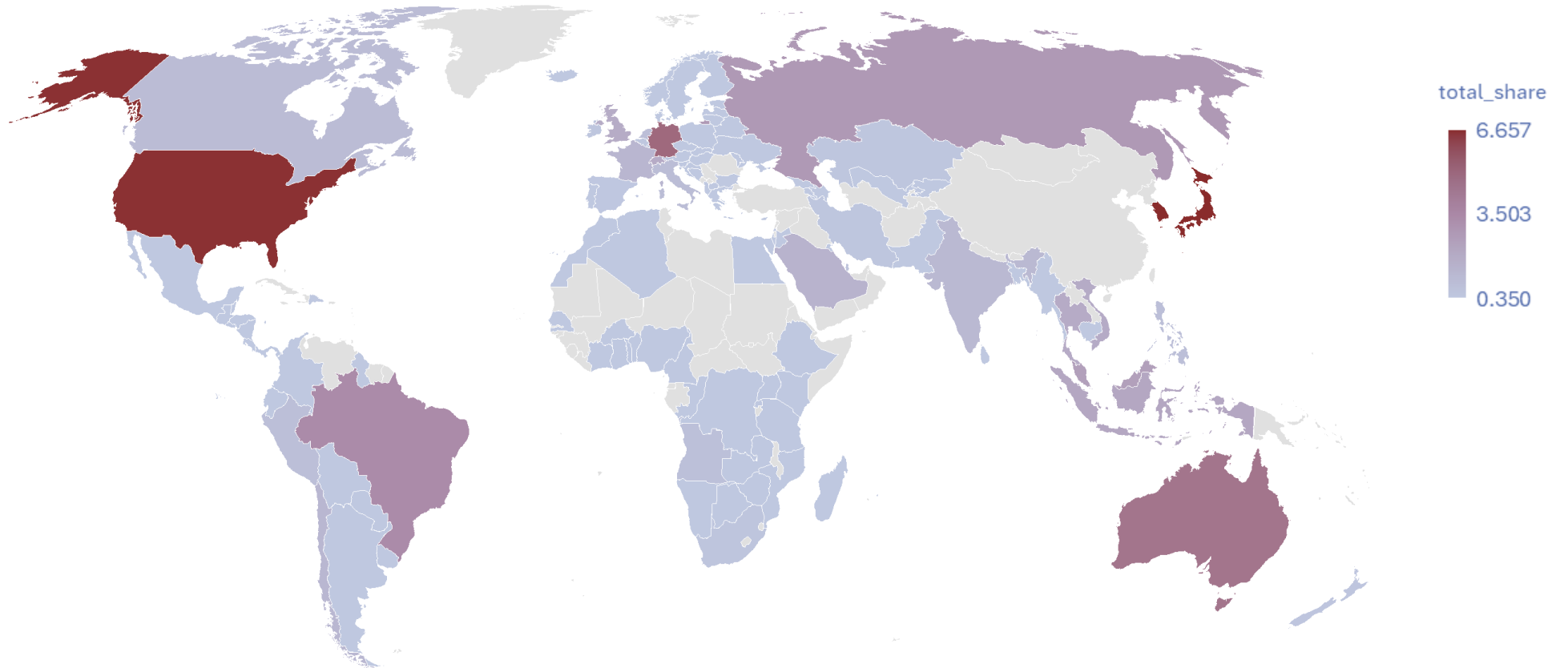
| VARIABLES            | food,<br>beverages<br>sec1_4 | mineral<br>products<br>sec5 | chemicals<br>sec6    | plastic and<br>rubber<br>sec7 | textiles,<br>footwear<br>sec81112 | wood and<br>pulp<br>sec910 | articles of<br>stone,<br>plaster,<br>cement<br>sec13 | pearls,<br>stones,<br>precious<br>metals<br>sec14 | base<br>metals and<br>articles<br>thereof<br>sec15 | machinery,<br>electrical<br>equipment<br>sec16 | vehicles<br>and aircraft<br>sec17 | optical,<br>photograph<br>ic,<br>measuring,<br>surgical<br>instrument<br>s<br>sec18 | arms and<br>ammunitio<br>n<br>sec19 | misc. and<br>arts<br>sec2021 |
|----------------------|------------------------------|-----------------------------|----------------------|-------------------------------|-----------------------------------|----------------------------|------------------------------------------------------|---------------------------------------------------|----------------------------------------------------|------------------------------------------------|-----------------------------------|-------------------------------------------------------------------------------------|-------------------------------------|------------------------------|
| _2018_west           | -0.200<br>(0.166)            | -0.028<br>(0.100)           | 0.215**<br>(0.089)   | 0.118<br>(0.078)              | 0.240**<br>(0.118)                | -0.056<br>(0.088)          | -0.032<br>(0.175)                                    | -0.138<br>(0.469)                                 | 0.303**<br>(0.146)                                 | -0.013<br>(0.179)                              | -0.017<br>(0.266)                 | -0.007<br>(0.182)                                                                   | 3.961<br>(14.044)                   | 0.014<br>(0.123)             |
| _2020_west           | 0.269<br>(0.166)             | 0.039<br>(0.099)            | -0.088<br>(0.089)    | -0.127<br>(0.078)             | 0.085<br>(0.118)                  | -0.008<br>(0.089)          | 1.008***<br>(0.174)                                  | -2.155***<br>(0.469)                              | -0.269*<br>(0.147)                                 | 0.009<br>(0.180)                               | -0.069<br>(0.268)                 | 0.033<br>(0.184)                                                                    | -2.020<br>(7.875)                   | -0.090<br>(0.125)            |
| _2021_west           | 0.414**<br>(0.167)           | -0.146<br>(0.099)           | -0.130<br>(0.090)    | -0.059<br>(0.078)             | 0.025<br>(0.118)                  | -0.040<br>(0.089)          | 0.329*<br>(0.173)                                    | -0.683<br>(0.470)                                 | -0.343**<br>(0.145)                                | -0.364**<br>(0.180)                            | 0.054<br>(0.264)                  | -0.022<br>(0.184)                                                                   | -3.873<br>(8.159)                   | -0.063<br>(0.123)            |
| _2022_west           | 0.309*<br>(0.167)            | -0.074<br>(0.099)           | -0.204**<br>(0.090)  | -0.063<br>(0.079)             | 0.167<br>(0.119)                  | 0.010<br>(0.090)           | 0.799***<br>(0.174)                                  | -0.447<br>(0.468)                                 | -0.752***<br>(0.145)                               | -0.038<br>(0.180)                              | -0.176<br>(0.266)                 | -0.043<br>(0.184)                                                                   | -8.946<br>(8.723)                   | -0.155<br>(0.126)            |
| _2023_west           | -0.184<br>(0.169)            | -0.346***<br>(0.100)        | -0.270***<br>(0.090) | -0.022<br>(0.078)             | 0.030<br>(0.119)                  | -0.092<br>(0.090)          | 0.681***<br>(0.174)                                  | -0.534<br>(0.473)                                 | -1.092***<br>(0.145)                               | -0.075<br>(0.181)                              | -0.078<br>(0.266)                 | -0.113<br>(0.184)                                                                   | 2.077<br>(8.798)                    | -0.328***<br>(0.125)         |
| _2024_west           | -0.041<br>(0.171)            | -0.319***<br>(0.101)        | -0.334***<br>(0.090) | -0.111<br>(0.079)             | -0.107<br>(0.121)                 | -0.104<br>(0.091)          | 0.865***<br>(0.176)                                  | -0.733<br>(0.480)                                 | -1.170***<br>(0.147)                               | -0.072<br>(0.183)                              | -0.122<br>(0.267)                 | -0.020<br>(0.184)                                                                   | -2.066<br>(8.362)                   | -0.347***<br>(0.126)         |
| _2025_west           | -0.039<br>(0.206)            | -0.243**<br>(0.122)         | -0.621***<br>(0.108) | -0.985***<br>(0.094)          | -0.452***<br>(0.149)              | -0.350***<br>(0.112)       | 0.158<br>(0.211)                                     | 0.777<br>(0.580)                                  | -1.128***<br>(0.178)                               | -1.175***<br>(0.223)                           | -1.404***<br>(0.322)              | -0.953***<br>(0.225)                                                                | -7.761<br>(10.672)                  | -1.310***<br>(0.152)         |
| Constant             | 0.974***<br>(0.058)          | 1.131***<br>(0.035)         | 1.112***<br>(0.032)  | 1.168***<br>(0.027)           | 1.056***<br>(0.041)               | 1.083***<br>(0.031)        | 1.469***<br>(0.060)                                  | 1.497***<br>(0.163)                               | 1.022***<br>(0.051)                                | 1.053***<br>(0.063)                            | 1.543***<br>(0.091)               | 1.381***<br>(0.064)                                                                 | 8.127***<br>(1.347)                 | 1.371***<br>(0.043)          |
| Observations         | 9,394                        | 8,000                       | 8,064                | 7,774                         | 8,653                             | 8,264                      | 6,191                                                | 6,003                                             | 8,675                                              | 8,581                                          | 5,790                             | 6,596                                                                               | 1,049                               | 6,527                        |
| R-squared            | 0.008                        | 0.019                       | 0.028                | 0.056                         | 0.016                             | 0.011                      | 0.029                                                | 0.008                                             | 0.027                                              | 0.010                                          | 0.012                             | 0.012                                                                               | 0.009                               | 0.041                        |
| Number of country_id | 120                          | 115                         | 119                  | 120                           | 120                               | 118                        | 117                                                  | 112                                               | 120                                                | 120                                            | 115                               | 117                                                                                 | 40                                  | 118                          |

Standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

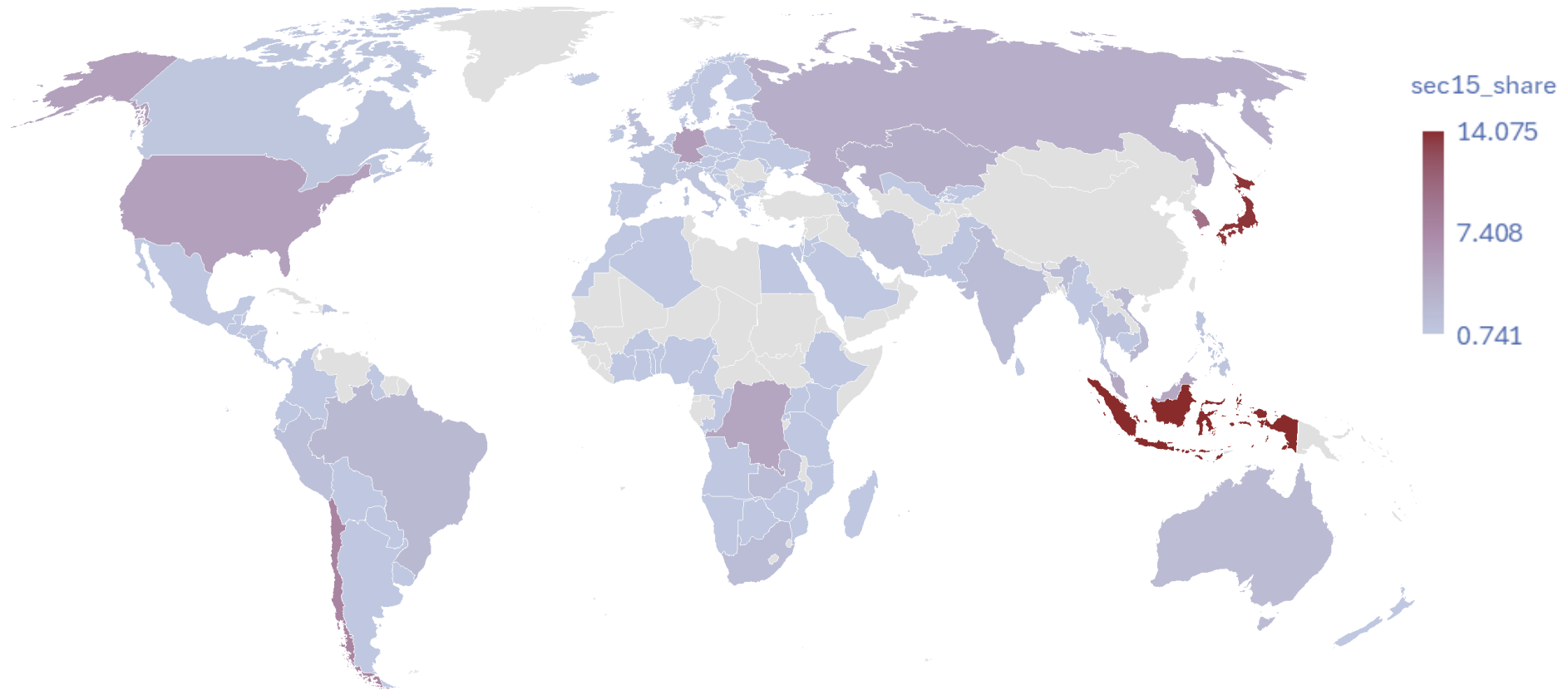
# Import share by country – total imports

Average import share (%) over sample period.



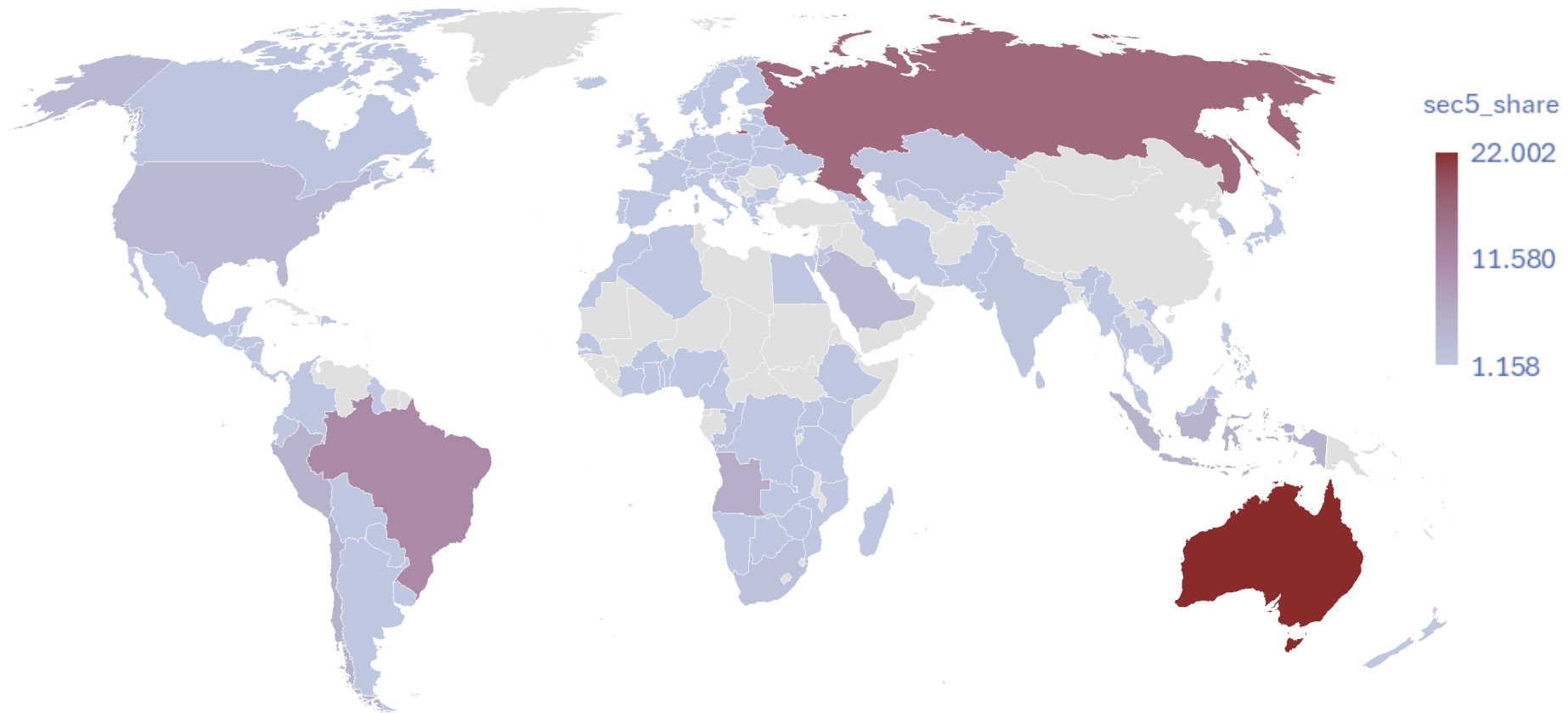
# Import share by country – base metals

Average import share (%) of section 15 (base metals) over sample period.



# Import share by country – mineral products

Average import share (%) of section 5 (mineral products) over sample period.



# Common High Priority Items

## TIER 1

| HS code (4) | Text                                                                                                                                                                                    |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8542.31     | Electronic integrated circuits: Processors and controllers, whether or not combined with memories, converters, logic circuits, amplifiers, clock and timing circuits, or other circuits |
| 8542.32     | Electronic integrated circuits: Memories                                                                                                                                                |
| 8542.33     | Electronic integrated circuits: Amplifiers                                                                                                                                              |
| 8542.39     | Electronic integrated circuits: Other                                                                                                                                                   |

## TIER 2

| HS code (5) | Text                                                                                                                                              |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| 8517.62     | Machines for the reception, conversion and transmission or regeneration of voice, images or other data, including switching and routing apparatus |
| 8526.91     | Radio navigational aid apparatus                                                                                                                  |
| 8532.21     | Other fixed capacitors: Tantalum capacitors                                                                                                       |
| 8532.24     | Other fixed capacitors: Ceramic dielectric, multilayer                                                                                            |
| 8548.00     | Electrical parts of machinery or apparatus, not specified or included elsewhere in chapter 85                                                     |

## TIER 3.A

| HS code (16) | Text                                                                                                                                                                                                                                                                                                                |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8471.50      | Processing units other than those of subheading 8471 41 or 8471 49, whether or not containing in the same housing one or two of the following types of unit: storage units, input units, output units                                                                                                               |
| 8504.40      | Static converters                                                                                                                                                                                                                                                                                                   |
| 8517.69      | Other apparatus for the transmission or reception of voice, images or other data, including apparatus for communication in a wired or wireless network                                                                                                                                                              |
| 8525.89      | Other television cameras, digital cameras and video camera recorders                                                                                                                                                                                                                                                |
| 8529.10      | Aerials and aerial reflectors of all kinds; parts suitable for use therewith                                                                                                                                                                                                                                        |
| 8529.90      | Other parts suitable for use solely or principally with the apparatus of headings 8524 to 8528                                                                                                                                                                                                                      |
| 8536.69      | Plugs and sockets for a voltage not exceeding 1 000 V                                                                                                                                                                                                                                                               |
| 8536.90      | Electrical apparatus for switching electrical circuits, or for making connections to or in electrical circuits, for a voltage not exceeding 1000 V (excluding fuses, automatic circuit breakers and other apparatus for protecting electrical circuits, relays and other switches, lamp holders, plugs and sockets) |
| 8541.10      | Diodes, other than photosensitive or light-emitting diodes (LED)                                                                                                                                                                                                                                                    |
| 8541.21      | Transistors, other than photosensitive transistors with a dissipation rate of less than 1 W                                                                                                                                                                                                                         |
| 8541.29      | Other transistors, other than photosensitive transistors                                                                                                                                                                                                                                                            |
| 8541.30      | Thyristors, diacs and triacs (excl. photosensitive semiconductor devices)                                                                                                                                                                                                                                           |
| 8541.49      | Photosensitive semiconductor devices (excl. Photovoltaic generators and cells)                                                                                                                                                                                                                                      |
| 8541.51      | Other semiconductor devices: Semiconductor-based transducers                                                                                                                                                                                                                                                        |
| 8541.59      | Other semiconductor devices                                                                                                                                                                                                                                                                                         |
| 8541.60      | Mounted piezo-electric crystals                                                                                                                                                                                                                                                                                     |

## TIER 3.B

| HS code (9) | Text                                                                                                                                                                  |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8482.10     | Ball bearings                                                                                                                                                         |
| 8482.20     | Tapered roller bearings, including cone and tapered roller assemblies                                                                                                 |
| 8482.30     | Spherical roller bearings                                                                                                                                             |
| 8482.50     | Other cylindrical roller bearings, including cage and roller assemblies                                                                                               |
| 8807.30     | Other parts of aeroplanes, helicopters or unmanned aircraft                                                                                                           |
| 9013.10     | Telescopic sights for fitting to arms; periscopes; telescopes designed to form parts of machines, appliances, instruments or apparatus of this chapter or Section XVI |
| 9013.80     | Other optical devices, appliances and instruments                                                                                                                     |
| 9014.20     | Instruments and appliances for aeronautical or space navigation (other than compasses)                                                                                |
| 9014.80     | other navigational instruments and appliances                                                                                                                         |

## TIER 4.A

| HS code (11) | Text                                                                                                                        |
|--------------|-----------------------------------------------------------------------------------------------------------------------------|
| 8471.80      | Units for automatic data-processing machines (excl. processing units, input or output units and storage units)              |
| 8486.10      | Machines and apparatus for the manufacture of boules or wafers                                                              |
| 8486.20      | Machines and apparatus for the manufacture of semiconductor devices or of electronic integrated circuits                    |
| 8486.40      | Machines and apparatus specified in note 11(C) to this chapter                                                              |
| 8534.00      | Printed circuits                                                                                                            |
| 8543.20      | Signal generators                                                                                                           |
| 9027.50      | Other instruments and apparatus using optical radiations (ultraviolet, visible, infrared)                                   |
| 9030.20      | Oscilloscopes and oscillographs                                                                                             |
| 9030.32      | Multimeters with recording device                                                                                           |
| 9030.39      | Instruments and apparatus for measuring or checking voltage, current, resistance or electrical power, with recording device |
| 9030.82      | Instruments and apparatus for measuring or checking semiconductor wafers or devices                                         |

## TIER 4.B

| HS code (5) | Text                                                                                                                                                                                                                                 |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8457.10     | Machining centres for working metal                                                                                                                                                                                                  |
| 8458.11     | Horizontal lathes, including turning centres, for removing metal, numerically controlled                                                                                                                                             |
| 8458.91     | Lathes (including turning centres) for removing metal, numerically controlled (excluding horizontal lathes)                                                                                                                          |
| 8459.61     | Milling machines for metals, numerically controlled (excluding lathes and turning centres of heading 8458, way-type unit head machines, drilling machines, boring-milling machines, boring machines, and knee-type milling machines) |
| 8466.93     | Parts and accessories suitable for use solely or principally with the machines of headings 8456 to 8461, n.e.s.                                                                                                                      |

# Economically Critical Goods

| HS code | Description                                                                                                                                                                                                                                                                                                                                                                                      |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7308 90 | Structures and parts of structures, of iron or steel, n.e.s. (excl. bridges and bridge-sections, towers and lattice masts, doors and windows and their frames, thresholds for doors, props and similar equipment for scaffolding, shuttering, propping or pit-propping)                                                                                                                          |
| 8409 91 | Parts suitable for use solely or principally with spark-ignition internal combustion piston engine, n.e.s.                                                                                                                                                                                                                                                                                       |
| 8412 21 | Hydraulic power engines and motors, linear acting "cylinders"                                                                                                                                                                                                                                                                                                                                    |
| 8413 50 | Reciprocating positive displacement pumps for liquids, power-driven (excl. those of subheading 8413.11 and 8413.19, fuel, lubricating or cooling medium pumps for internal combustion piston engine and concrete pumps)                                                                                                                                                                          |
| 8419 50 | Heat-exchange units (excl. those used with boilers)                                                                                                                                                                                                                                                                                                                                              |
| 8419 89 | Machinery, plant or laboratory equipment, whether or not electrically heated, for the treatment of materials by a process involving a change of temperature such as heating, cooking, roasting, sterilising, pasteurising, steaming, evaporating, vaporising, condensing or cooling, n.e.s. (excl. machinery used for domestic purposes and furnaces, ovens and other equipment of heading 8514) |

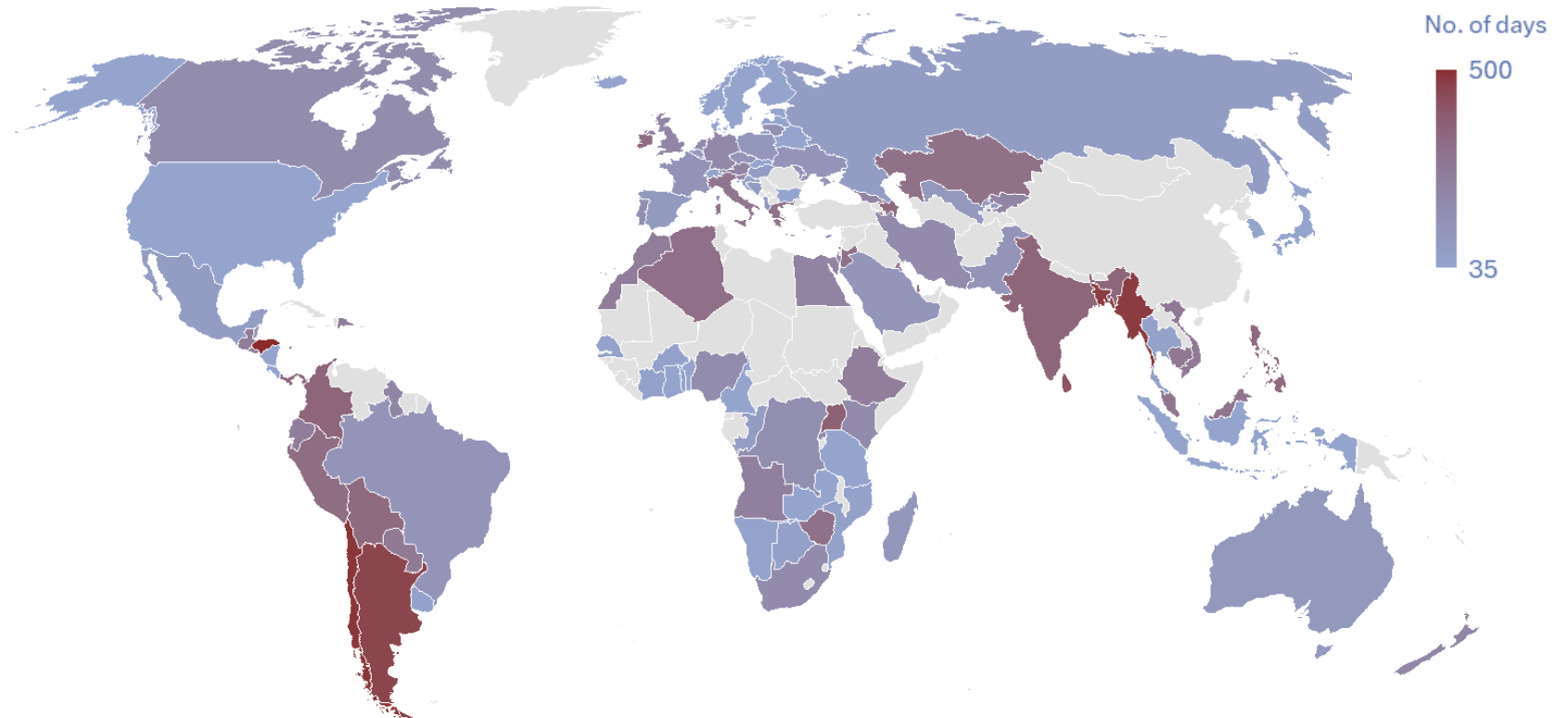
|         |                                                                                                                                                                                                                                            |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8419 90 | Parts of machinery, plant and laboratory equipment, whether or not electrically heated, for the treatment of materials by a process involving a change of temperature, and of non-electric instantaneous and storage water heaters, n.e.s. |
| 8421 23 | Oil or petrol filters for internal combustion engines                                                                                                                                                                                      |
| 8421 29 | Machinery and apparatus for filtering or purifying liquids (excl. such machinery and apparatus for water and other beverages, oil or petrol-filters for internal combustion engines and artificial kidneys)                                |
| 8421 39 | Machinery and apparatus for filtering or purifying gases (excl. isotope separators and intake air filters for internal combustion engines)                                                                                                 |
| 8421 99 | Parts of machinery and apparatus for filtering or purifying liquids or gases, n.e.s.                                                                                                                                                       |
| 8424 30 | Steam or sand blasting machines and similar jet projecting machines, incl. water cleaning appliances with built-in motor (excl. appliances for cleaning special containers)                                                                |
| 8428 33 | Continuous-action elevators and conveyors for goods or materials, belt type (excl. those for underground use)                                                                                                                              |
| 8428 39 | Continuous-action elevators and conveyors, for goods or materials (excl. those for underground use and bucket, belt or pneumatic types)                                                                                                    |
| 8428 90 | Machinery for lifting, handling, loading or unloading, n.e.s.                                                                                                                                                                              |
| 8477 20 | Extruders for working rubber or plastics                                                                                                                                                                                                   |

|         |                                                                                                                                                                                                                                                                           |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8477 80 | Machinery for working rubber or plastics or for the manufacture of products from these materials, not specified or included elsewhere in this chapter                                                                                                                     |
| 8479 10 | Machinery for public works, building or the like, n.e.s.                                                                                                                                                                                                                  |
| 8479 82 | Mixing, kneading, crushing, grinding, screening, sifting, homogenising, emulsifying or stirring machines, n.e.s. (excl. industrial robots)                                                                                                                                |
| 8479 89 | Machines and mechanical appliances, n.e.s.                                                                                                                                                                                                                                |
| 8481 80 | Appliances for pipes, boiler shells, tanks, vats or the like (excl. pressure-reducing valves, valves for the control of pneumatic power transmission, check "non-return" valves and safety or relief valves)                                                              |
| 8502 20 | Generating sets with spark-ignition internal combustion piston engine                                                                                                                                                                                                     |
| 8507 10 | Lead-acid accumulators of a kind used for starting piston engine "starter batteries" (excl. spent)                                                                                                                                                                        |
| 8537 10 | Boards, cabinets and similar combinations of apparatus for electric control or the distribution of electricity, for a voltage $\leq 1.000$ v                                                                                                                              |
| 8538 90 | Parts suitable for use solely or principally with the apparatus of heading 8535, 8536 or 8537, n.e.s. (excl. boards, panels, consoles, desks, cabinets and other bases for the goods of heading 8537, not equipped with their apparatus)                                  |
| 8701 21 | Road tractors for semi-trailers, with only compression-ignition internal combustion piston engine "diesel or semi-diesel"                                                                                                                                                 |
| 8708 99 | Parts and accessories, for tractors, motor vehicles for the transport of ten or more persons, motor cars and other motor vehicles principally designed for the transport of persons, motor vehicles for the transport of goods and special purpose motor vehicles, n.e.s. |
| 8716 39 | Trailers and semi-trailers for the transport of goods, not designed for running on rails (excl. self-loading or self-unloading trailers and semi-trailers for agricultural purposes and tanker trailers and tanker semi-trailers)                                         |
| 8716 90 | Parts of trailers and semi-trailers and other vehicles not mechanically propelled, n.e.s.                                                                                                                                                                                 |
| 8904 00 | Tugs and pusher craft                                                                                                                                                                                                                                                     |

# Strictness of government policies in response to the Covid-19 pandemic: length of strict controls

- The stringency index is a composite measure calculated based on nine key indicators of government response:
  - › School closures
  - › Workplace closures
  - › Cancellation of public events
  - › Restrictions on public gatherings
  - › Closures of public transport
  - › Stay-at-home requirements
  - › Public information campaigns
  - › Restrictions on internal movements
  - › International travel controls
- Daily stringency index is the mean level of national level strictness scored from 0 (no controls) to 100 (most stringent controls)

**Number of days where national controls >75 during  
1.1.2020 – 31.12.2022**



Source: Oxford COVID-19 Government Response Tracker (OxCGRT)

# Robustness analysis: estimation results (I)

## 1) Excluding Russia

| VARIABLES            | (1)<br>excluding<br>Russia<br>total | (2)<br>excluding<br>Russia<br>base metals | (3)<br>excluding<br>Russia<br>minerals |
|----------------------|-------------------------------------|-------------------------------------------|----------------------------------------|
| _2018_west           | 0.065**<br>(0.033)                  | 0.133<br>(0.111)                          | -0.049<br>(0.114)                      |
| _2020_west           | -0.027<br>(0.033)                   | -0.156<br>(0.112)                         | 0.206*<br>(0.113)                      |
| _2021_west           | -0.109***<br>(0.033)                | -0.155<br>(0.111)                         | 0.016<br>(0.114)                       |
| _2022_west           | -0.196***<br>(0.033)                | -0.627***<br>(0.111)                      | -0.092<br>(0.113)                      |
| _2023_west           | -0.230***<br>(0.033)                | -0.623***<br>(0.111)                      | -0.294**<br>(0.115)                    |
| _2024_west           | -0.166***<br>(0.034)                | -0.615***<br>(0.113)                      | -0.385***<br>(0.116)                   |
| _2025_west           | -0.013<br>(0.039)                   | -1.151***<br>(0.147)                      | -0.995***<br>(0.144)                   |
| Constant             | 0.866***<br>(0.012)                 | 0.991***<br>(0.039)                       | 0.959***<br>(0.040)                    |
| Observations         | 10,162                              | 8,557                                     | 7,938                                  |
| R-squared            | 0.021                               | 0.020                                     | 0.020                                  |
| Number of country_id | 120                                 | 119                                       | 114                                    |

Standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

## 2) Three country blocs

| VARIABLES            | (1)<br>three blocs<br>total | (2)<br>three blocs<br>base metals | (3)<br>three blocs<br>minerals |
|----------------------|-----------------------------|-----------------------------------|--------------------------------|
| west_2018            | 0.081**<br>(0.040)          | 0.164<br>(0.127)                  | -0.100<br>(0.137)              |
| west_2020            | -0.044<br>(0.040)           | -0.267**<br>(0.129)               | 0.378***<br>(0.137)            |
| west_2021            | -0.135***<br>(0.040)        | -0.378***<br>(0.128)              | 0.138<br>(0.137)               |
| west_2022            | -0.210***<br>(0.040)        | -0.695***<br>(0.128)              | -0.061<br>(0.137)              |
| west_2023            | -0.293***<br>(0.040)        | -0.759***<br>(0.128)              | -0.343**<br>(0.138)            |
| west_2024            | -0.204***<br>(0.041)        | -0.737***<br>(0.130)              | -0.516***<br>(0.139)           |
| west_2025            | -0.037<br>(0.047)           | -1.234***<br>(0.168)              | -0.899***<br>(0.172)           |
| neutral_2018         | 0.045<br>(0.048)            | 0.087<br>(0.153)                  | -0.002<br>(0.154)              |
| neutral_2020         | 0.023<br>(0.048)            | -0.017<br>(0.152)                 | 0.101<br>(0.153)               |
| neutral_2021         | -0.055<br>(0.048)           | 0.148<br>(0.150)                  | -0.054<br>(0.153)              |
| neutral_2022         | -0.176***<br>(0.048)        | -0.516***<br>(0.151)              | -0.186<br>(0.153)              |
| neutral_2023         | -0.214***<br>(0.048)        | -0.563***<br>(0.151)              | -0.370**<br>(0.153)            |
| neutral_2024         | -0.105**<br>(0.049)         | -0.569***<br>(0.152)              | -0.452***<br>(0.154)           |
| neutral_2025         | 0.115**<br>(0.056)          | -1.075***<br>(0.200)              | -1.175***<br>(0.194)           |
| Constant             | 0.891***<br>(0.012)         | 1.001***<br>(0.039)               | 1.095***<br>(0.041)            |
| Observations         | 10,249                      | 8,639                             | 8,020                          |
| R-squared            | 0.021                       | 0.023                             | 0.022                          |
| Number of country_id | 121                         | 120                               | 115                            |

Standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

## 3) Sanctioning countries as Western bloc

| VARIABLES            | (1)<br>sanction<br>groupings<br>total | (2)<br>sanction<br>groupings<br>base metals | (3)<br>sanction<br>groupings<br>minerals |
|----------------------|---------------------------------------|---------------------------------------------|------------------------------------------|
| sanctions_2018       | 0.065*<br>(0.036)                     | 0.181<br>(0.114)                            | -0.087<br>(0.119)                        |
| sanctions_2020       | -0.033<br>(0.036)                     | -0.376***<br>(0.115)                        | 0.285**<br>(0.119)                       |
| sanctions_2021       | -0.120***<br>(0.036)                  | -0.563***<br>(0.113)                        | 0.092<br>(0.119)                         |
| sanctions_2022       | -0.214***<br>(0.036)                  | -0.679***<br>(0.114)                        | -0.172<br>(0.119)                        |
| sanctions_2023       | -0.282***<br>(0.037)                  | -0.711***<br>(0.114)                        | -0.314***<br>(0.120)                     |
| sanctions_2024       | -0.202***<br>(0.037)                  | -0.670***<br>(0.115)                        | -0.448***<br>(0.120)                     |
| sanctions_2025       | -0.216***<br>(0.053)                  | -1.135***<br>(0.171)                        | -1.037***<br>(0.176)                     |
| Constant             | 0.890***<br>(0.021)                   | 0.587***<br>(0.084)                         | 0.757***<br>(0.083)                      |
| Observations         | 10,249                                | 8,639                                       | 8,020                                    |
| R-squared            | 0.021                                 | 0.020                                       | 0.020                                    |
| Number of country_id | 121                                   | 120                                         | 115                                      |

Standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

# Robustness analysis: estimation results (II)

## 4) Value of exports in logs

|                      | (1)                  | (2)                  | (3)                  |
|----------------------|----------------------|----------------------|----------------------|
| VARIABLES            | total in logs        | base metals in logs  | minerals in logs     |
| _2018_west           | -0.022<br>(0.067)    | -0.000<br>(0.120)    | -0.063<br>(0.145)    |
| _2020_west           | 0.030<br>(0.067)     | -0.040<br>(0.121)    | 0.629***<br>(0.144)  |
| _2021_west           | -0.097<br>(0.067)    | -0.085<br>(0.120)    | 0.131<br>(0.145)     |
| _2022_west           | -0.289***<br>(0.067) | -0.689***<br>(0.119) | -0.502***<br>(0.144) |
| _2023_west           | -0.338***<br>(0.068) | -0.821***<br>(0.120) | -0.906***<br>(0.146) |
| _2024_west           | -0.306***<br>(0.069) | -1.004***<br>(0.122) | -0.957***<br>(0.147) |
| _2025_west           | -0.324***<br>(0.080) | -0.996***<br>(0.159) | -0.671***<br>(0.184) |
| Constant             | 18.245***<br>(0.024) | 15.030***<br>(0.042) | 16.024***<br>(0.051) |
| Observations         | 10,197               | 8,729                | 8,109                |
| R-squared            | 0.022                | 0.039                | 0.030                |
| Number of country_id | 122                  | 121                  | 116                  |

Standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

## 5) Chinese imports in values

|                      | (1)                    |
|----------------------|------------------------|
| VARIABLES            | total imports to China |
| _2018_west           | 0.014<br>(0.019)       |
| _2020_west           | 0.053***<br>(0.019)    |
| _2021_west           | 0.006<br>(0.019)       |
| _2022_west           | -0.076***<br>(0.019)   |
| _2023_west           | -0.102***<br>(0.019)   |
| _2024_west           | -0.094***<br>(0.019)   |
| _2025_west           | -0.132***<br>(0.021)   |
| Constant             | 0.682***<br>(0.007)    |
| Observations         | 11,237                 |
| Number of country_id | 121                    |
| R-squared            | 0.017                  |

Standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

# Country List

| Country                | Bloc        | <i>Bloc: robustness 1</i> | <i>Bloc: robustness 2</i> | Country            | Bloc        | <i>Bloc: robustness 1</i> | <i>Bloc: robustness 2</i> |
|------------------------|-------------|---------------------------|---------------------------|--------------------|-------------|---------------------------|---------------------------|
| Albania                | Western     | <i>Neutral</i>            | <i>Western</i>            | Kenya              | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        |
| Angola                 | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        | Korea (Rep. of)    | Western     | <i>Western</i>            | <i>Western</i>            |
| Argentina              | Western     | <i>Western</i>            | <i>Like-minded</i>        | Kyrgyzstan         | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        |
| Armenia                | Western     | <i>Neutral</i>            | <i>Like-minded</i>        | Latvia             | Like-minded | <i>Like-minded</i>        | <i>Western</i>            |
| Australia              | Western     | <i>Western</i>            | <i>Western</i>            | Lithuania          | Western     | <i>Neutral</i>            | <i>Western</i>            |
| Austria                | Western     | <i>Western</i>            | <i>Western</i>            | Luxembourg         | Western     | <i>Western</i>            | <i>Western</i>            |
| Azerbaijan             | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        | Macao              | Western     | <i>Western</i>            | <i>Like-minded</i>        |
| Bahrain                | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        | Malaysia           | Western     | <i>Neutral</i>            | <i>Like-minded</i>        |
| Barbados               | Western     | <i>Western</i>            | <i>Like-minded</i>        | Malta              | Western     | <i>Western</i>            | <i>Western</i>            |
| Belgium                | Western     | <i>Western</i>            | <i>Western</i>            | Mauritius          | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        |
| Belize                 | Western     | <i>Western</i>            | <i>Like-minded</i>        | Mexico             | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        |
| Bolivia                | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        | Moldova (Rep. of)  | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        |
| Bosnia and Herzegovina | Western     | <i>Neutral</i>            | <i>Like-minded</i>        | Montenegro         | Western     | <i>Neutral</i>            | <i>Western</i>            |
| Brazil                 | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        | Morocco            | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        |
| Bulgaria               | Like-minded | <i>Like-minded</i>        | <i>Western</i>            | Myanmar            | Western     | <i>Neutral</i>            | <i>Like-minded</i>        |
| Burkina Faso           | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        | Namibia            | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        |
| Cameroon               | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        | Netherlands        | Western     | <i>Western</i>            | <i>Western</i>            |
| Canada                 | Western     | <i>Western</i>            | <i>Western</i>            | New Zealand        | Western     | <i>Western</i>            | <i>Western</i>            |
| Chile                  | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        | Nicaragua          | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        |
| Colombia               | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        | Nigeria            | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        |
| Costa Rica             | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        | Norway             | Western     | <i>Western</i>            | <i>Western</i>            |
| Côte d'Ivoire          | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        | Pakistan           | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        |
| Croatia                | Like-minded | <i>Like-minded</i>        | <i>Western</i>            | Panama             | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        |
| Cyprus                 | Western     | <i>Western</i>            | <i>Western</i>            | Paraguay           | Western     | <i>Western</i>            | <i>Like-minded</i>        |
| Czech Republic         | Western     | <i>Neutral</i>            | <i>Western</i>            | Peru               | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        |
| Denmark                | Western     | <i>Western</i>            | <i>Western</i>            | Philippines        | Western     | <i>Western</i>            | <i>Like-minded</i>        |
| Dominican Republic     | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        | Poland             | Western     | <i>Neutral</i>            | <i>Western</i>            |
| Ecuador                | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        | Portugal           | Like-minded | <i>Like-minded</i>        | <i>Western</i>            |
| Egypt                  | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        | Puerto Rico        | Western     | <i>Western</i>            | <i>Like-minded</i>        |
| El Salvador            | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        | North Macedonia    | Western     | <i>Neutral</i>            | <i>Western</i>            |
| Estonia                | Western     | <i>Neutral</i>            | <i>Western</i>            | Romania            | Like-minded | <i>Neutral</i>            | <i>Western</i>            |
| Ethiopia               | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        | Russian Federation | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        |
| Fiji                   | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        | Saudi Arabia       | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        |
| Finland                | Western     | <i>Western</i>            | <i>Western</i>            | Senegal            | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        |
| France                 | Western     | <i>Neutral</i>            | <i>Western</i>            | Serbia             | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        |
| Georgia                | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        | Singapore          | Western     | <i>Neutral</i>            | <i>Western</i>            |
| Germany                | Western     | <i>Neutral</i>            | <i>Western</i>            | Slovakia           | Western     | <i>Neutral</i>            | <i>Western</i>            |
| Ghana                  | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        | Slovenia           | Western     | <i>Neutral</i>            | <i>Western</i>            |
| Greece                 | Western     | <i>Western</i>            | <i>Western</i>            | South Africa       | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        |
| Guatemala              | Western     | <i>Western</i>            | <i>Like-minded</i>        | Spain              | Western     | <i>Western</i>            | <i>Western</i>            |
| Guyana                 | Western     | <i>Western</i>            | <i>Like-minded</i>        | Sri Lanka          | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        |
| Honduras               | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        | Sweden             | Western     | <i>Western</i>            | <i>Western</i>            |
| Hungary                | Like-minded | <i>Like-minded</i>        | <i>Western</i>            | Switzerland        | Western     | <i>Western</i>            | <i>Western</i>            |
| Iceland                | Western     | <i>Western</i>            | <i>Western</i>            | Thailand           | Western     | <i>Neutral</i>            | <i>Like-minded</i>        |
| India                  | Western     | <i>Western</i>            | <i>Like-minded</i>        | Togo               | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        |
| Indonesia              | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        | Turkey             | Western     | <i>Western</i>            | <i>Like-minded</i>        |
| Iran                   | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        | Ukraine            | Western     | <i>Neutral</i>            | <i>Western</i>            |
| Ireland                | Western     | <i>Western</i>            | <i>Western</i>            | United Kingdom     | Western     | <i>Western</i>            | <i>Western</i>            |
| Israel                 | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        | United States      | Western     | <i>Western</i>            | <i>Western</i>            |
| Italy                  | Western     | <i>Western</i>            | <i>Western</i>            | Uruguay            | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        |
| Japan                  | Western     | <i>Western</i>            | <i>Western</i>            | Uzbekistan         | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        |
| Jordan                 | Western     | <i>Neutral</i>            | <i>Like-minded</i>        | Zimbabwe           | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        |
| Kazakhstan             | Like-minded | <i>Like-minded</i>        | <i>Like-minded</i>        |                    |             |                           |                           |