



# INTERSECTIONS

Technology, National Security, and US-China Strategic Competition

*Intersections*, a news digest published by CNA’s China and Indo-Pacific Security Affairs Division, describes the interplay between the People’s Republic of China’s (PRC’s) technology acquisition efforts, US and partner nation responses to these efforts, and the critical and emerging technology risks for the US defense industrial base. This issue features a section on the actions US allies and partners are taking to secure supply chains for critical minerals vital to their national security. We also cover recent examples of policy measures the PRC is taking to promote acquisition of foreign technology, including using the domestic legal system against foreign firms. Although these specific measures are new, many reflect recurring tactics that the PRC uses to protect and promote domestic industries. Click [here](#) to read *Intersections* in your [browser](#).

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## PARTNER RESPONSES TO CHIP EXPORT CONTROLS

Support from allies and partners is a key element in the potential effectiveness of the US semiconductor export controls.<sup>1</sup> In particular, the US needs the support of key countries in the chip-making supply chain, most importantly Japan, the Netherlands, South Korea, and Taiwan. In the previous issue of [Intersections](#), published in January, we reported on Japan's and Taiwan's initial reactions to the US export controls. In this issue, we give an update on Japan's reactions and summarize debates on US export controls in the Netherlands and South Korea.

**Japan and the Netherlands join trilateral agreement with the US that would restrict exports of semiconductor manufacturing equipment to the PRC.**<sup>2</sup> On January 27, the *Financial Times* reported that the US, Japan, and the Netherlands have reached a tentative [trilateral agreement](#) to restrict the export of semiconductor manufacturing tools to the PRC. The agreement follows the unilaterally imposed export restrictions on chip-making equipment by the US in October 2022 and is the fruit of two years of US negotiations with Japan and the Netherlands.<sup>3</sup>

On March 8, the Netherlands trade minister [confirmed](#) key details of this agreement in a letter to the Dutch parliament.<sup>4</sup> While the letter did not specify exactly which technologies would be restricted, it did note that the Netherlands' existing export controls, which since 2019 have prohibited the export of state-of-the-art Extreme Ultraviolet Lithography (EUV) chip-making machines to the PRC, would be "expanded" to include other "most advanced" types of equipment. In a [statement](#) responding to the letter, leading Dutch chip-making equipment manufacturer ASML said it had not received any additional information about the definition of "most advanced" equipment, but would interpret the letter as referring to select types of "immersion DUV" chip-making machines—a slightly less cutting-edge but still very advanced technology.<sup>5</sup> ASML is the world's sole manufacturer of EUV, and a major manufacturer of immersion DUV machines.<sup>6</sup>

The US, Japan, and the Netherlands are home to some of the world's most advanced chip-making equipment companies, including KLA, Tokyo Electron, and ASML. The *Straits Times* cites analysts who state that denying the PRC access to the most advanced US, Dutch, and Japanese chip-making equipment would prevent it from developing its own cutting-edge semiconductor chip-manufacturing capabilities.<sup>7</sup> However, as of early March, the Japanese government has still not given specifics on what export controls it will implement. Akira Amari, an influential Japanese lawmaker, has said that Japan is likely to [implement](#) less stringent restrictions than the US.<sup>8</sup> Whether Japan joins the US and Netherlands in rigorously implementing the trilateral agreement will have a significant impact on the US and Dutch controls' effectiveness.

**South Korea faces numerous challenges to comply with US chip export controls.** As discussed above, Japan and the Netherlands have signed a trilateral agreement with the US in support of the US semiconductor export controls. In addition, as covered in the [previous issue](#) of *Intersections*, Taiwan has said it will support the controls.<sup>9</sup> Although South Korea has not decided how it will respond to the US controls, its decision whether to support or not will have a significant impact on their effectiveness, given the size of leading South Korean chip producers and their extensive investments in the PRC.

South Korea faces key challenges to complying with the US export controls. First, South Korean chip producers Samsung and SK Hynix have plants in the PRC. Samsung operates two chip fabrication plants ("fab plants") in the city of Xi'an, which represented nearly [43 percent](#) (in 2021) of the company's "total NAND flash production capacity" (a particular type of memory chip).<sup>10</sup> Second, SK Hynix, which also

produces memory chips, is facing potential restrictions on upgrading lithography equipment in its Wuxi, China, plant because of the US restrictions.<sup>11</sup> Samsung and SK Hynix have both been “granted a one-year [waiver](#) to temporarily steer clear of chip-making tools import restrictions to their Chinese fab plants,” according to the *Korea Herald*.<sup>12</sup> Finally, and of note, South Korea also relies heavily on China as a market for its semiconductors, with chip exports to China representing 40.6 percent of the country’s total volume.<sup>13</sup>

## ALLY AND PARTNER TECH PROTECTION

### US PARTNERS, ALLIES DEVELOPING CRITICAL MINERALS STRATEGIES

US allies and partners have taken significant steps toward reducing reliance on the PRC for critical minerals production. The US Geological Survey defines a [critical mineral](#) as one that is “necessary for the manufacture of high technology devices, national defense applications, and green growth-related industries,” yet “is at risk for supply disruption.”<sup>14</sup> Minerals can be critical either because of uneven or scarce geographic distribution or because certain countries dominate extraction, refining, and processing. For example, China [controls](#) about 90 percent of worldwide rare earths processing and 60 percent of lithium processing.<sup>15</sup>

**Canada releases new Critical Minerals Strategy.** In December 2022, Canada unveiled a new [Critical Minerals Strategy](#) designed to shape the nation’s approach to mining, processing, and utilizing critical minerals.<sup>16</sup> The strategy notes Canada’s “extremely fortunate position of possessing significant amounts of many of the world’s most critical minerals” and calls increased demand for critical minerals in green energy and other applications “a generational opportunity.” The strategy lays out several measures, including streamlining Canada’s mine permitting process, providing support and tax incentives for companies seeking permits in certain prioritized minerals, and pledging to support projects that “decrease or remove reliance on foreign critical mineral inputs.” Also of note, the strategy pledges to “seek regulatory harmonization” with the US and has also been coordinated with similar strategies in Australia, Japan, and other countries.

**Australia taking steps to overhaul critical minerals strategy, including promoting alternatives to PRC investment.** The Australian government and companies have recently expressed an intention to reduce Australia’s reliance on the PRC for refining and processing of critical minerals, seeking instead to develop its own capacity in these areas. The following are examples:

- In November 2022, a government scientific research agency issued an [Australian Silicon Action Plan](#) that addresses the potential for Australia to exploit its considerable silicon resources—a key material for solar panels—to develop a domestic solar panel supply chain.<sup>17</sup>
- In November 2022, two Australian cabinet officials gave [speeches](#) to a mining industry gathering in which they emphasized Australia’s critical minerals sector as a strategic opportunity.<sup>18</sup>
- Australian mining firms are investing in friendly countries. According to an October 2022 BBC [report](#), Australian firm Lynas Rare Earths has been contracted by the US Department of Defense to build a “multimillion-dollar processing facility” in the US.<sup>19</sup>

These steps and others are building up to Australia’s expected update to its [critical minerals strategy](#), which is to be released in 2023.<sup>20</sup> Of note, in the meantime, PRC firms continue to seek investments into Australia’s critical minerals industry. In December 2022, for example, PRC firm Tianqi Lithium announced it was seeking a [joint investment](#) in Western Australia with an Australian firm to develop a lithium processing facility.<sup>21</sup>

**European Union (EU) seeking to reduce economic reliance on PRC for critical minerals.** In recent months, EU leaders have made statements about the EU's economic reliance on the PRC and are considering actions to reduce this reliance in strategic areas, notably critical minerals, while continuing to maintain robust trade ties with China. Notable recent developments in this area include the following:

- In January 2023, Europe's largest [deposit](#) of rare earths was discovered in Sweden. Currently, no rare earths are mined in Europe, and the PRC supplies 98 percent of the rare earths the EU uses.<sup>22</sup>
- This discovery comes as the European Commission is formulating a [Critical Raw Materials Act](#), which aims to "strengthen EU supply chains" for materials such as rare earths, lithium, and polysilicon.<sup>23</sup> The act will likely be released in March and is expected to provide policy on subsidizing production, processing, and strategic reserves of critical raw materials.<sup>24</sup>

**The Critical Raw Minerals Act is one part of a broader EU-wide push to strengthen the EU's self-reliance in strategically critical sectors while not fully decoupling from the PRC.** In January 2023, European Commission President Ursula von der Leyen gave a [speech](#) at the World Economic Forum at Davos in which she said that the EU should focus on "de-risking rather than decoupling" from the PRC.<sup>25</sup> Von der Leyen asserted that the EU needs to "work and trade with China," while also criticizing the PRC for subsidies that unfairly benefit PRC companies and practices that restrict EU companies' market access.<sup>26</sup>

## TAIWAN'S OUTBOUND INVESTMENT

**Taiwan's Foxconn faces fines for mainland PRC investment in semiconductor-related company.** In January, Taiwan's Ministry of Economic Affairs fined Foxconn Industrial Internet (a.k.a. "Foxconn")—the world's largest electronics manufacturer<sup>27</sup>—10 million New Taiwan Dollars (USD \$329,088) for "making an unauthorized investment in Tsinghua Unigroup," a PRC chip company.<sup>28</sup> Originally a unit within China's elite Tsinghua University, Tsinghua Unigroup underwent a major corporate restructuring in 2022 and now has a PRC provincial government-owned investment fund as its largest shareholder.<sup>29</sup> Taiwan is working to protect its technology from transfer to mainland China, and noted that the fine was the result of Foxconn's failure to seek required regulatory approval for the deal. Taiwan's Ministry of Economic Affairs reviews outbound foreign direct investment into the PRC mainland in critical sectors, such as semiconductors.<sup>30</sup>

## PRC TECHNOLOGY EFFORTS

### EFFORTS TO BOOST PRC SEMICONDUCTOR INDUSTRY

**The China Integrated Circuit (IC) Fund restarts investment projects for PRC domestic firms.** Amid the pressure from US export controls on advanced chips, PRC investors are trying to channel funds to "mature tech nodes," which are not subject to the US restrictions.<sup>31</sup> The China Integrated Circuit Industry Investment fund ("China IC Fund") was created by the PRC government in 2014 to provide support to the industry.<sup>32</sup> According to a *South China Morning Post* report, PRC firm Hua Hong Semiconductor Group will receive approximately \$6.7 billion USD in investment for a [wafer fabrication plant](#) in eastern Wuxi in Jiangsu Province.<sup>33</sup> Per the report, the new fabrication plant will focus on 12-inch wafers to complement the production of 8-inch wafers that are currently produced at three plants in Shanghai.

**Initial public offering (IPO) approvals and local government actions complement Beijing's efforts to ensure access to mature chips.** As major semiconductor manufacturing firms plan new investments in mature node production, nine PRC firms were approved for IPOs in late 2022, and the *South China Morning Post* [reports](#) that these firms could “raise a total of US \$2.5 billion” on the Shanghai Star Market.<sup>34</sup> Per the report, IPO applications include companies involved in integrated chip design, packaging, and a wafer foundry; the wafer foundry is associated with Semiconductor Manufacturing International Corporation, a major PRC chip firm. In Shenzhen, local authorities approved a business license in December 2022 for the Electronic Components and Integrated Circuits International Trading Center Company, which is backed by 12 state-owned enterprises and a variety of other shareholders.<sup>35</sup> This trading center is meant to create “an international sourcing platform for semiconductors” and help further China’s “self-sufficiency strategy.”<sup>36</sup>

## PRC REGULATORY CHANGES

**China adds two US defense contractors to sanctions list in response to Taiwan arms sales.** In February 2023, the PRC Ministry of Commerce (MOFCOM) announced that US defense contractors Raytheon and Lockheed Martin would be [added](#) to the PRC’s Unreliable Entity List (UEL)—a PRC sanctions list created in 2020.<sup>37</sup> The MOFCOM [announcement](#) stated that the two contractors were added to the list for undermining China’s “national sovereignty and territorial integrity” through repeated arms sales to Taiwan.<sup>38</sup> This marks the first time the MOFCOM has added foreign companies to the UEL.<sup>39</sup> In the announcement, MOFCOM stated that it intends to impose the following penalties on the two US firms:

- Raytheon and Lockheed are prohibited from engaging in import or export activities or investments related to the PRC.
- The two companies’ senior managers are not allowed to travel to the PRC, and senior managers for both companies who are currently located within the PRC will be forced to leave.
- Raytheon and Lockheed must each pay a fine equal to double the amounts of each company’s contracted arms sales to Taiwan since the creation of the UEL in 2020.<sup>40</sup> According to the MOFCOM, if either company does not pay the fine within 15 days of the announcement, that company will face “additional fines” and other unspecified measures “in accordance with the law.” As of the time of writing, it is unclear whether the PRC has actually implemented any fines or other penalties.

The [impact](#) of the sanctions remains to be seen. Although Raytheon and Lockheed have no defense sales with the PRC, they do supply some components to China’s commercial aviation industry.<sup>41</sup> Worth watching is whether Beijing will be willing to rigorously enforce the above UEL penalties on Raytheon and Lockheed even if doing so entails disruptions to the PRC’s commercial aircraft programs.

**New regulation to require data exports leaving the PRC to undergo security assessment.** According to December 2022 [guidelines](#) issued by the PRC State Council, data transmissions that cross the PRC border must undergo a “security review.”<sup>42</sup> The State Council’s new guidelines come more than a year after the June 2021 passage of China’s [Data Security Law](#),<sup>43</sup> which requires the PRC government to create and implement export controls on certain categories of data deemed sensitive. The guidelines, and a related set of [regulations](#) released by the PRC Ministry of Industry and Information Technology in December 2022, require “important” and “core” industrial data to be stored within the PRC.<sup>44</sup> These measures exemplify how the PRC is increasingly using legal means to advance its interests, including control over data flows.



## CRITICAL AND EMERGING TECH

**US investment in PRC AI sector is prevalent.** In February 2023, the Center for Security and Emerging Technology at Georgetown University released a [report](#) on US investments in PRC AI companies between 2015 and 2021.<sup>45</sup> The report argues that US investments in the PRC AI sector are common, but far from dominant, with investment transactions involving US investors accounting for 37 percent of the total funding raised by PRC AI companies. Most US investments in PRC AI companies were early-phase venture capital funding, which often involves transferring knowledge and network contacts alongside money. In certain circumstances, venture capital funding may also facilitate transfers of technological know-how.

The report also found instances of US investments in companies with ties to the PRC Party-state. For example, in 2016, the US tech giant Qualcomm invested in a Beijing based start-up called 7Invensun, which works in the field of eye-tracking, eye-motion control, and facial identification. 7Invensun has collaborated with the China Academy of Launch Vehicle Technology, a major PRC state entity involved in the development and manufacturing of space launch and ballistic missile systems.<sup>46</sup>

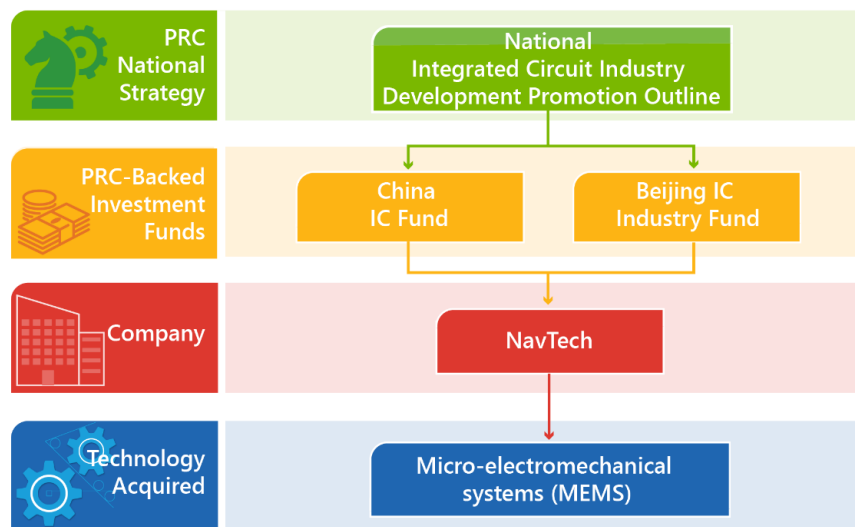
**US chips used in PRC nuclear weapons research, despite export controls.** According to a January 2023 article in *The Wall Street Journal*, the PRC state-run China Academy of Engineering Physics (CAEP) has [obtained](#) semiconductor chips produced by US companies despite US export controls. The article describes CAEP as the PRC's top nuclear weapons research institute and notes that CAEP was placed on the US [Entity List](#) in 1997.<sup>47</sup> The article states that the types of chips procured by CAEP are difficult for the PRC to mass-produce domestically. However, US versions of these chips are widely available on the open market in the PRC. The article's review of official procurement documents from CAEP indicates that the academy was able to obtain these chips through third-party PRC resellers. This is an example of the PRC [buying](#) technology—how PRC state and military institutions take advantage of extended supply chains, shell companies, and third-parties to legally obtain technologies that would otherwise be inaccessible to them.<sup>48</sup>

**PRC courts nullify patents, support domestic firms in accessing foreign intellectual property (IP).** In February 2023, *The Wall Street Journal* reported that the PRC mobilized its domestic [courts](#) to help PRC companies access foreign technology.<sup>49</sup> According to the article, the PRC has strengthened IP protections in areas such as luxury clothing while using court decisions to weaken or nullify those protections in other areas considered important by the PRC. For example, the article notes that in 2021, a PRC court ruled that a Japanese company had broken an antitrust law by refusing to license its rare earth magnet technology to a PRC company. That same year, another PRC court dismissed a suit by an American company claiming that PRC companies had stolen and patented proprietary automotive sensor technology.

Patent nullification can also affect supply chain security. The article discusses how since 2017, AS&E, an American maker of X-ray security scanning systems, has competed with cheaper systems made by the PRC state-owned Nuctech, which AS&E alleges copied its proprietary systems. According to the article, after AS&E complained to Nuctech, AS&E's PRC patent was invalidated. AS&E has argued that widespread usage of Nuctech systems could pose security risks, theorizing that Nuctech's government connections mean it could send data from its systems to PRC authorities. This example shows how the PRC government shapes its domestic legal environment to gain access to foreign technologies that it has identified as critical.

## PRC STRATEGIC GUIDANCE & INVESTMENT FUNDS

The China IC Fund provides capital to firms working on chip manufacturing, in accordance with the *National Integrated Circuit Industry Development Promotion Outline*.<sup>50</sup> However, in 2022, the China IC Fund faced corruption allegations and was investigated by the PRC Ministry of Industry and Information Technology's Commission for Discipline and Inspection.<sup>51</sup> Foxconn's semiconductor manufacturing plant in Wuxi, discussed above, appears to be the first major project since the corruption investigation, which may indicate that the China IC Fund is resuming normal operations. The China IC Fund, and related municipal investment funds, have provided financial support to PRC companies, such as NavTech, in acquiring foreign technology. In 2016, NavTech acquired Sweden's Silex Microsystems, which specialized in manufacturing micro-electromechanical systems, or MEMS—a component of some types of chips. For more on this case and how government guidance and national and local investment funds fund technology transfer, see pages 23–24 of our [report](#) on technology acquisition efforts.<sup>52</sup>



### NOTES

<sup>1</sup> Academic studies indicate that multilateral sanctions have higher success rates. For a more in-depth discussion, see: Bruce W. Jentleson, *Sanctions: What Everyone Needs to Know* (New York, NY: Oxford University Press, 2022).

<sup>2</sup> Demetri Sevastopulo and Sam Fleming, "Netherlands and Japan Join US in Restricting Chip Exports to China," *Financial Times*, Jan. 27, 2023, <https://www.ft.com/content/baa27f42-0557-4377-839b-a4f4524cfa20>.

<sup>3</sup> Ibid.

<sup>4</sup> Andy Bounds and Demetri Savastopulo, "Netherlands to Restrict Chip Exports After US Pressure Over China Threat," *Financial Times*, Mar. 8, 2023, <https://www.ft.com/content/e911774c-a048-4ed1-9f90-e4bb684a3156>.

<sup>5</sup> "Statement Regarding Additional Export Controls," ASML, Mar. 8, 2023, accessed Mar. 9, 2023, <https://www.asml.com/en/news/press-releases/2023/statement-regarding-additional-export-controls>.

<sup>6</sup> Katie Tarasov, "ASML is the Only Company Making the \$200 Million Machines Needed to Print Every Advanced Microchip. Here's an Inside Look." CNBC, Mar. 23, 2022, <https://www.cnbc.com/2022/03/23/inside-asml-the-company-advanced-chipmakers-use-for-euv-lithography.html>.

<sup>7</sup> "US Poised for Dutch, Japanese Help on China Chip Crackdown," *Straits Times*, Jan. 20, 2023, <https://www.straitstimes.com/world/united-states/us-poised-for-dutch-japanese-help-on-china-chip-crackdown>; Ana Swanson, "Netherlands and Japan Said to Join U.S. in Curbing Chip Technology Sent to China," *New York Times*, Jan. 28, 2023, <https://www.nytimes.com/2023/01/28/business/economy/netherlands-japan-china-chips.html?searchResultPosition=1>.

<sup>8</sup> Ibid.

<sup>9</sup> Jeanne Whalen and Aaron Schaffer, "Taiwan, a Major Producer of Semiconductors, Says It Will Abide by U.S. Rules: More than 60 Percent of Taiwan's Chip Exports Go to China," *Washington Post*, Oct. 21, 2022, <https://www.washingtonpost.com/politics/2022/10/21/taiwan-major-producer-semiconductors-says-it-will-abide-by-us-rules/>.

<sup>10</sup> Che Pan, "Samsung's Memory Plants in China Face Uncertainty as Xi'an Lockdown Adds Pressure to Chip Supply Chain," *South China Morning Post*, Dec. 27, 2021, <https://www.scmp.com/tech/big-tech/article/3161190/samsungs-memory-plants-china-face-uncertainty-xian-lockdown-adds>.

<sup>11</sup> Chris Miller, "The US-China Chip War Is Reshaping Tech Supply Chains," *Financial Times*, Oct. 7, 2022, <https://www.ft.com/content/3bab2b03-0cd9-4e91-86ab-dcda499fb231>.

<sup>12</sup> Son Ji-hyoung, "Is US Export Ban Forcing Korean Chipmakers to Exit from China?" *Korea Herald*, Oct. 18, 2022, <https://www.koreaherald.com/view.php?ud=20221018000616&np=11&mp=2>.

<sup>13</sup> Jo He-rim, "South Korea's Chip Exports Dwindle as Dependence on China Increases," *Korea Herald*, Nov. 28, 2022, <https://www.koreaherald.com/view.php?ud=20221128000609&np=19&mp=2>.

<sup>14</sup> "Critical Minerals," United States Geological Survey (USGS), accessed Feb. 16, 2023, <https://www.usgs.gov/science/critical-minerals>.

<sup>15</sup> Anmar Frangoul, "China 'Played a Great Game' on Lithium and We've Been Slow to React, Industry CEO Says," CNBC, Nov. 22, 2022, <https://www.cnbc.com/2022/11/23/china-played-a-great-game-on-lithium-and-weve-been-slow-to-react-ceo.html>.

<sup>16</sup> *The Canadian Critical Minerals Strategy: From Exploration to Recycling: Powering the Green and Digital Economy for Canada and the World*, Government of Canada, Dec. 2022, <https://www.canada.ca/content/dam/nrcan-rncan/site/critical-minerals/Critical-minerals-strategyDec09.pdf>.

<sup>17</sup> *Australian Silicon Action Plan*, PriceWaterhouseCoopers and the Commonwealth Scientific and Industrial Research Organization, Nov. 2022, <https://www.csiro.au/en/research/natural-environment/Critical-minerals/Australian-Silicon-Action-Plan>.

<sup>18</sup> The Hon Dr Jim Chalmers MP, Treasurer, "Address to The Australian Critical Minerals Summit, Sydney," Australian Government, Nov. 25, 2022, <https://ministers.treasury.gov.au/ministers/jim-chalmers-2022/speeches/address-australian-critical-minerals-summit-sydney>; The Hon Madeline King MP, Minister for Resources and Minister for Northern Australia, "Australian Government, Nov. 25, 2022, <https://www.minister.industry.gov.au/ministers/king/speeches/speech-australianpwc-critical-minerals-summit>.

<sup>19</sup> Phil Mercer, "Australia Challenges China in Mining for Essential Elements," BBC News, Oct. 18, 2022, <https://www.bbc.com/news/business-62760354>.



- <sup>20</sup> See: "Australia's Critical Minerals Strategy: Discussion Paper," Australian Government Department of Industry, Science and Resources, Dec. 2022, <https://www.ausimm.com/globalassets/pdf-files/australias-2023-critical-minerals-strategy-discussionpaper.pdf>.
- <sup>21</sup> "China's Tianqi Exploring Battery Minerals Processing options in Australia," Reuters, Dec. 6, 2022, <https://www.reuters.com/article/australia-mining-tianqi-battery-idUSKBN2SR020>.
- <sup>22</sup> Phelan Chatterjee, "Huge Rare Earth Metals Discovery in Arctic Sweden," *BBC*, Jan. 12, 2023, accessed Feb. 21, 2023, <https://www.bbc.com/news/world-europe-64253708>.
- <sup>23</sup> European Union, "Commission Seeks Views on the Future European Critical Raw Materials Act," europa.eu, Oct. 3, 2022, accessed Feb. 21, 2023, <https://circulareconomy.europa.eu/platform/en/news-and-events/all-news/commission-seeks-views-future-european-critical-raw-materials-act#:~:text=The%20European%20Critical%20Raw%20Materials%20Act%20will%20aim,dimension%20%E2%80%93%20and%20EU%20external%20policies%20on%20CRMs>.
- <sup>24</sup> Antonia Zimmermann, "Sweden's Rare Earths Discovery Won't End EU's China Reliance-Yet," *Politico*, Jan. 16, 2023, accessed Feb. 21, 2023, <https://www.politico.eu/article/swedens-rare-earths-discovery-wont-end-eus-china-reliance-yet/>.
- <sup>25</sup> "EU Must Seek to De-risk Rather than Decouple from China, Von der Leyen says," *Reuters*, Jan. 17, 2023, accessed Feb. 21, 2023, <https://www.reuters.com/world/eu-must-seek-de-risk-rather-than-decouple-china-von-der-leyen-2023-01-17/>.
- <sup>26</sup> Ibid.; Khushboo Razdan, "At Davos, EU Leader Stressed 'De-risking Rather than Decoupling' from China." *South China Morning Post*, Jan. 19, 2023, accessed Feb. 21, 2023, <https://www.scmp.com/news/china/article/3207324/davos-eu-leader-stresses-de-risking-rather-decoupling-china>.
- <sup>27</sup> Ben Jiang, "iPhone Maker Foxconn to Pay US \$330,000 in Fines to Taiwan for Unauthorized Investment in Mainland China's Unigroup," *South China Morning Post*, Jan. 20, 2023, <https://www.scmp.com/tech/tech-war/article/3207543/iphone-maker-foxconn-pay-us330000-fines-taiwan-unauthorised-investment-mainland-chinas-unigroup>.
- <sup>28</sup> Reuters, "Taiwan Fines Foxconn for Unauthorized China investment," *Taiwan News*, Jan. 19, 2023, <https://www.reuters.com/technology/taiwan-fines-foxconn-unauthorised-china-investment-2023-01-19/>.
- <sup>29</sup> "New Tsinghua Unigroup Chairman Promises Fresh Start for Chinese Chip Company," Reuters, July 12, 2022, <https://www.reuters.com/technology/new-tsinghua-unigroup-chairman-promises-fresh-start-chinese-chip-company-2022-07-13/>.
- <sup>30</sup> Ben Jiang, "iPhone Maker Foxconn to Pay US\$330,000 in fines to Taiwan"
- <sup>31</sup> Che Pan, "Hua Hong Semiconductor Gets State Backing for US\$6.7 billion Wafer Fab as China Continues its Pivot to Mature Chip Nodes," *South China Morning Post*, Jan. 19, 2023, <https://www.scmp.com/tech/tech-trends/article/3207368/hua-hong-semiconductor-gets-state-backing-us67-billion-wafer-fab-china-continues-its-pivot-mature>.
- <sup>32</sup> PRC Ministry of Finance, *National Integrated Circuit Industry Investment Fund Established* (国家集成电路产业投资基金正式设立), Oct. 2014, [http://www.mof.gov.cn/zhengwuxinxi/caizhengxinwen/201410/t20141014\\_1149902.htm](http://www.mof.gov.cn/zhengwuxinxi/caizhengxinwen/201410/t20141014_1149902.htm).
- <sup>33</sup> Che Pan, "Hua Hong Semiconductor Gets State Backing for US\$6.7 billion Wafer Fab as China Continues its Pivot to Mature Chip Nodes," *South China Morning Post*, Jan. 19, 2023, <https://www.scmp.com/tech/tech-trends/article/3207368/hua-hong-semiconductor-gets-state-backing-us67-billion-wafer-fab-china-continues-its-pivot-mature>.
- <sup>34</sup> Che Pan and Ann Cao, "Tech War: Fresh Funding Pipeline Enables China's Sanctions-Hit Semiconductor Industry to Cope with Latest US Trade Restrictions," *South China Morning Post*, Nov. 27, 2022, <https://www.scmp.com/tech/tech->

[war/article/3201169/tech-war-fresh-funding-pipeline-enables-chinas-sanctions-hit-semiconductor-industry-cope-latest-us.](#)

<sup>35</sup> Iris Deng, "US-China Tech War: Shenzhen Set to Become International Sourcing Hub for Semiconductors, Electronics with New Trading Exchange," *South China Morning Post*, Jan. 4, 2023, <https://www.scmp.com/tech/big-tech/article/3205560/us-china-tech-war-shenzhen-set-become-international-sourcing-hub-semiconductors-electronics-new>.

<sup>36</sup> Ibid.

<sup>37</sup> Wayne Chang and Simone McCarthy, "China Sanctions Lockheed, Raytheon After Vowing to Retaliate Against US restrictions," CNN, Feb. 17, 2023, <https://www.cnn.com/2023/02/16/business/china-sanctions-lockheed-raytheon-hnk-intl/index.html>.

<sup>38</sup> "Announcement by the Unreliable Entity List Working Group on the Listing of Lockheed Martin Corp. and Raytheon Missiles and Defense on the Unreliable Entity List" (不可靠实体清单工作机制关于将洛克希德·马丁公司、雷神导弹与防务公司列入不可靠实体清单的公告), PRC Ministry of Commerce, Feb. 16, 2023, <http://www.mofcom.gov.cn/article/zwgk/gkzcfb/202302/20230203391289.shtml>.

<sup>39</sup> "Ministry of Commerce Spokesperson Answers Reporters' Questions Regarding the Unreliable Entity List" (商务部新闻发言人就不可靠实体清单有关问题答记者问), PRC Ministry of Commerce (中华人民共和国商业部), Feb. 17, 2023, <http://www.mofcom.gov.cn/article/syxwfb/202302/20230203391508.shtml>.

<sup>40</sup> "Announcement by the Unreliable Entity List Working Group."

<sup>41</sup> "China Sanctions Lockheed Martin, Raytheon over Taiwan Arms Sales," Reuters, Feb. 16, 2023, <https://www.reuters.com/business/aerospace-defense/china-imposes-sanctions-lockheed-martin-raytheon-over-taiwan-arms-sales-2023-02-16/>.

<sup>42</sup> Xinmei Shen, "China Imposes National Security Review on Data, Merger Deals Involving Foreign Capital as Beijing Tightens Cross-Border Information Flow," *South China Morning Post*, Dec. 21, 2022, <https://www.scmp.com/tech/policy/article/3204022/china-imposes-national-security-review-data-merger-deals-involving-foreign-capital-beijing-tightens>. For the official announcement in Chinese, see: "Opinion on Building a Fundamental Data System to Give Full Play to the Role of Key Data Elements" (中共中央 国务院关于构建数据基础制度更好发挥数据要素作用的意见), PRC State Council, Dec. 19, 2022, [http://www.gov.cn/zhengce/2022-12/19/content\\_5732695.htm](http://www.gov.cn/zhengce/2022-12/19/content_5732695.htm).

<sup>43</sup> "Data Security Law of the People's Republic of China" (in English), Order of the President of the People's Republic of China No. 84, June 10, 2021, <http://www.npc.gov.cn/englishnpc/c23934/202112/1abd8829788946ecab270e469b13c39c.shtml>.

<sup>44</sup> Xinmei Shen, "China Restricts Export of Industrial Data as Beijing Seeks to Enhance Data Security," *South China Morning Post*, Dec. 14, 2022, <https://www.scmp.com/tech/policy/article/3203262/china-restricts-export-industrial-data-beijing-seeks-enhance-data-security>.

<sup>45</sup> Emily S. Weinstein and Ngor Luong, *US Outbound Investment into Chinese AI Companies*, CSET, Feb. 2023, <https://cset.georgetown.edu/publication/u-s-outbound-investment-into-chinese-ai-companies/>.

<sup>46</sup> Ibid. For more on CALT, see: Mark Stokes, Gabriel Alvarado, Emily Weinstein, and Ian Easton, "China's Space and Counterspace Capabilities and Activities," U.S.-China Economic and Security Review Commission, Mar. 30, 2020, [https://www.uscc.gov/sites/default/files/2020-05/China\\_Space\\_and\\_Counterspace\\_Activities.pdf](https://www.uscc.gov/sites/default/files/2020-05/China_Space_and_Counterspace_Activities.pdf).

<sup>47</sup> Liza Lin and Dan Strumpf, "Chinese Nuclear Lab Used U.S. Chips After Ban," *Wall Street Journal*, Jan. 30, 2023, [https://www.wsj.com/articles/chinas-top-nuclear-weapons-lab-used-american-computer-chips-decades-after-ban-11674990320?mod=world\\_lead\\_pos3](https://www.wsj.com/articles/chinas-top-nuclear-weapons-lab-used-american-computer-chips-decades-after-ban-11674990320?mod=world_lead_pos3).

<sup>48</sup> Rose Tenyotkin, April Herlevi, Alison Kaufman, and Anthony Miller, *Economic Statecraft: How China Legally Accesses Foreign Technologies to Build Military Capabilities*, CNA, DRM-2020-U-027240-1Rev, Jun. 2020, p. 6, <https://www.cna.org/reports/2020/08/DRM-2020-U-027240-1Rev.pdf>.

<sup>49</sup> Stu Woo and Daniel Michaels, "China's Newest Weapon to Nab Western Technology-its Courts," *Wall Street Journal*, Feb. 21, 2023, accessed Feb. 21, 2023, <https://www.wsj.com/articles/u-s-china-technology-disputes-intellectual-property-europe-e749a72e>.

<sup>50</sup> PRC Ministry of Finance, "National Integrated Circuit Industry Investment Fund Officially Established."

<sup>51</sup> "China Watchdog Investigates Three More Execs Linked to Chip-Focused Big Fund," Reuters, Aug. 9, 2022, <https://www.reuters.com/technology/china-watchdog-investigates-three-more-execs-linked-chip-focused-big-fund-2022-08-09/>.

<sup>52</sup> Tenyotkin, Herlevi, Kaufman, and Miller, *Economic Statecraft*, p. 23-24.

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