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New US Export Controls: Key Policy Choices for Europe

Recommendations for a robust European export control policy

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In response to Russia's attack on Ukraine, the United States and 37 countries formed a coalition in February 2022 to implement a barrage of export controls outside of any formal arrangement. By contrast, US controls on China are often unilateral, such as its October 2022 measures on semiconductors that went ahead without explicit consent, let alone a commitment by its allies to join. But to deny China access to "dual-use" technology, unilateral export controls will not be effective. As European Commission President Ursula von der Leyen announced during her visit to the White House, the European Union (EU) wants to renew its export controls on dual-use products and new technologies and to coordinate them more closely with US measures. That means that member states will need to develop a common position on the scope of their export controls – including the extent of their alignment with the United States – as well as ways forward with multilateral controls of dual-use goods, given the freeze of the Wassenaar Arrangement due to Russia's actions.

Understanding the Biden administration's plans to use tools such as export controls requires knowledge of their context: Unlike the Trump administration, it has not embraced a broad "decoupling" from China. Instead, it has continued many of the same policies, such as adding Chinese firms to export and investment blacklists and expanding export controls, most notably on advanced semiconductors and semiconductor manufacturing equipment in October 2022.

On technology, President Joe Biden's National Security Advisor, Jake Sullivan, made a major speech in September 2022 with a roadmap for the policy that the administration has followed since. The goal is to "ensure that emerging technologies work for […] democracies and security", and end the status quo whereby "competitors and adversaries took advantage of our complacency and inherent openness". He noted that the controls imposed on Russia by many countries show "technology export controls can be more than just a preventative tool […] they can be a new strategic asset in the US and allied toolkit to impose costs on adversaries" and "degrade their battlefield capabilities". In Russia's case, these export controls have challenged its ability to access components critical for tanks, missiles, cars,

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planes, and more, but they can never be airtight. Sullivan also urged the United States to create "as large a lead as possible" vis-à-vis "competitors" in "foundational" technologies such as semiconductors.

What are export controls and why are they being used?

Export controls are some of the United States' most powerful tools for economic statecraft. They regulate not only the export of goods from the United States, but also the re-export of those goods once abroad; the transfer of sensitive knowhow, data, and blueprints; and even in rare cases goods that are the "direct product" of US equipment, even if they are made in factories abroad. Controls are aimed to keep US technology and products away from those who would use them to undermine US security and foreign policy interests, including the security of its allies. The rationale for controls is clearest in areas crucial to national and international security, from nuclear technology and chemical weapons to conventional weapons. Export controls become much less clear cut when dealing with dual-use goods, which have both civilian and military uses.

US export controls are powerful due to the strength of US technology and industry, but they have limited utility without cooperation from abroad. US export controls on China, for example, would be useless if the goods can just be legally exported to a country such as Germany, then illegally "re-exported" from there to a Chinese firm, or if a German firm sold similar technology that is not subject to any restrictions. Forming a coalition of countries to implement controls thus has a strong rationale. The US government's capability to do "end-use checks" to ensure that the goods are not diverted are limited and require cooperation from authorities in other countries.

Even if US controls are enforced well, a worst-case scenario is that the target gets the controlled technology from a seller in a different country, who then can use the revenue to help outcompete American companies. The world has changed from the early Cold War, when the United States on its own produced — and thus could effectively control — many of the most advanced technologies. Today the United States has a monopoly on far less. Even US-based multinationals now do 17 per cent of their R&D outside the United States, and an increasing share is outside traditional US security allies. Export controls are less effective at decreasing exports than they were in the 1990s, largely due to the increased use of global value chains, which make it easy to shift production away from the United States to avoid controls.

Export controls and investment controls

Export controls need to be used in concert with other tools such as investment security reviews to be effective. If a Chinese firm can buy an American firm with export-controlled technology without security safeguards, it is hard to imagine that technology not being transferred back to China. In addition, US policy-makers worry about US investment into China undermining export controls. US investors can for now legally invest in firms that are developing China's indigenous capacity to build goods and technology that would not be legal to export to China. If those efforts bear fruit, export controls will no longer be effective. This has led the Biden administration to contemplate introducing outward investment controls, that is, providing the US government with a stronger grip on investment in China.

Implementation by US government agencies

US export controls consist largely of lists that outline the types of goods, technology, and services that can be restricted based on the country (e.g. cannot be sent to North Korea), end-use (not allowed if intended for military end-use), or end-user (e.g. if it is destined for a specific firm, such as Huawei). There are varying levels of scrutiny:

In some cases a listed item may be exempt from licensing, in others the US Department of Commerce may make determinations on a case-by-case basis, and in others the export or transfer may face a "presumption of denial" with near certain rejection, as has been applied to Huawei in many cases.

US policy has shifted both due to changes in China and changes in the technology landscape. In China, the lines between the public and private sectors have blurred under President Xi Jinping, making it more difficult to tell whether a Chinese firm is ordering goods for commercial reasons or out of national strategic considerations. China's so-called military–civil fusion (MCF) goal in China rings alarm bells in Washington, even if careful analyses of the policy suggest it has had limited success in enlisting Chinese private firms to help China's military. Successful MCF would complicate more tailored approaches to export controls. Export blacklists for companies linked to China's military are not useful if they end up being a whack-a-mole game, as tens of thousands of firms in China have licences to supply its military, but few are on lists that would stop them from obtaining US technology.

The increasing power of commercial off-the-shelf semiconductors and the use of products such as consumer drones in warfare are also leading the United States to broaden controls. For example, a radiation-hardened semiconductor designed for nuclear or satellite applications is clearly a defence article, but a commercial chip available at consumer electronics stores could also end up in a weapon. Controls on dual-use goods are both more difficult to enforce and have greater economic impact than those on defence items, because attempts to limit their military use in a country such as China could also restrict a large volume of exports for commercial purposes. The Biden administration's semiconductor controls reflect its determination that the security benefits outweigh the economic cost — which reaches into the billions for its producers of chipmaking equipment.

Use of export controls from Trump to Biden

Start under Trump

Export controls were a relatively sleepy area of US policy before the Trump administration, though there were always underlying tensions. The Trump administration stepped up the use of these tools in often disruptive ways. It started in early 2018 with an order denying ZTE — a major Chinese telecommunications company that had been caught selling equipment with US technology to Iran and North Korea — the ability to buy US technology and goods. It was a corporate death sentence due to ZTE's reliance on US tech, and it served as a wakeup call for China. It took a deal between President Donald Trump and General Secretary Xi Jinping to lift the order.

Later in 2018, the United States passed related laws strengthening national security reviews on foreign investment in the country (Foreign Investment Risk Review Modernization Act) and updating its export controls (Export Control Reform Act, or ECRA). ECRA allows the United States to impose unilateral controls, but authorities are urged to consider dropping those that do not become multilateral and are thus unlikely to work in the long term. The Commerce Department was also tasked with identifying "emerging and foundational" technologies to control.

The next major Chinese tech firm to be targeted was Fujian Jinhua in October 2018. The firm was accused of stealing designs from its US rival Micron and passing the technology off as its own. The United States responded by putting Fujian Jinhua on its export blacklist, as the case "threatens the long-term economic viability of US suppliers of these essential components of US military systems".

In May 2019, the United States added Huawei — one of China's most important technology champions and a globally important provider of telecoms infrastructure and smartphones — to the same list after it was indicted in a US court for its dealings

with Iran. Also, the United States had deeper concerns about a Chinese company that had rooted itself in the world's telecommunications infrastructure.

The Huawei controls showed the shortcomings of unilateral action. US firms would face losses of tens of billions of US dollars from a sudden ban on Huawei shipments, especially because the ban would not apply to their competitors abroad. In addition, Huawei equipment was already in homes, pockets, and critical telecoms infrastructure around the world. The United States would draw the ire of many countries if its controls made Huawei unable to service their networks — a much more salient threat than US warnings about Huawei being a security threat. To buy time to consider these unintended consequences, the US government issued a "temporary general license" to allow some continued shipments to Huawei.

China's dependence on US technology gave the US leverage, but pulling that lever incentivised China to push for more self-sufficiency and buy from non-US suppliers. The Trump administration's successful campaign to get the Dutch government to ban sales of ASML's most advanced chipmaking equipment in late 2019 was an exception to the rule that other countries refused to go along with US controls.

With regard to Huawei, firms that made their products outside the United States stepped in to plug the gap, including US firms now incentivised to move their production abroad so they could legally sell to Huawei. Faced with controls that were leaky and leading to pernicious incentives, the United States pulled out a bigger gun.

In August 2020, it applied the Foreign-Direct Product Rules (FDPR) to Huawei and its affiliates, declaring that even semiconductors produced with no US content would be barred from sale to Huawei if they were made with US equipment — which is ubiquitous in global semiconductor supply chains from Beijing to Seoul, Tokyo, and Taipei. This time, the United States dealt a serious blow to Huawei, but the company has survived and is even for the time being building out much of Germany's 5G networks.

Biden: Continuity with more outreach

With one fundamental exception, the Biden administration has deviated little from the Trump administration's approach to these tools. It has continued to add around 150 Chinese firms to the entity list — including those related to human rights in Xinjiang — expanded the use of FDPR, continually added new technologies to control lists in the United States, and expanded foreign investment reviews. The main contrast has been the concerted attempts to convince others to adopt similar controls, with mixed results. Some US technology controls have been adopted in multilateral settings, where US engagement with Europe and Asian allies paid off when Russia invaded Ukraine in February 2022. One threat the United States made to Vladimir Putin's government before it invaded was that it would apply the FDPR it has used against Huawei to Russia, and it did.

This time, however, it was not acting alone. The global response to the Russian invasion was a watershed for export controls, breaking longstanding taboos in countries, especially in Europe, that traditionally were loathe to impose export controls beyond those adopted by the multilateral Wassenaar Arrangement, which includes Russia among its members. The United States and its allies agreed to impose similar controls, leading Washington to exempt coalition members from the FDPR imposed on Russia. The breadth of the resulting coalition — 38 countries, including even Singapore and Switzerland — was surprising to both Moscow and Washington, but it was largely restricted to high-income countries. The restrictions imposed by these countries went far beyond the Wassenaar Arrangement's focus on traditional arms controls to more strategic economic controls aimed to hit the economy that was fuelling Russia's war machine, leading initially to a collapse of Russian

imports. Yet, even this coalition of mostly producers of advanced technology has failed to bring Russia's economy to its knees or force it to end the war.

Chip controls

On 7 October 2022, the Biden administration took aim yet again at China through semiconductors, artificial intelligence, and supercomputing. The United States supplies 42 per cent of semiconductor manufacturing equipment globally and almost all design tools, giving it unique chokepoints. The controls are complex, but they are aimed to cut off the sale of high-end chips used for artificial intelligence and supercomputing applications, including with new FDPR, and hobble China's attempt to produce its own more advanced chips, which if successful could neuter US leverage, supplant chip producers abroad, and supply China's military. The United States tried to tailor its controls carefully to the most advanced chips and also avoided controls that would disrupt supply chains for mature semiconductors that China can still produce.

The controls were unilateral, though in January the United States reportedly reached a deal for the Netherlands and Japan to adopt at least some similar controls on semiconductor manufacturing equipment.

Trade-offs from a US perspective

Scope

There is political pressure on the Biden administration to expand controls in order to address a lengthy list of concerns with China, from its military modernisation to human rights. If the United States is the only supplier or if there is a strong moral reason for US firms not to provide the goods (e.g. they could be used for human rights abuses), they can be justified. The risk, however, is that US firms which are unable to export to China's immense market must either offshore production or lose the revenue needed to fund R&D that keeps them competitive. When firms from other countries can supply China with the same goods, the move backfires without even harming China. When the United States imposed stricter controls on satellites than the rest of world in 1999, the United States dropped from representing 73 per cent of the market to 25 per cent in a decade, leading the US government to conclude that the controls undermined "the US space industrial base to the detriment of US national security, while doing nothing to protect [the technology]".

Expanding export controls without clear red lines for purely commercial goods and firms could harm US business sales in China, even for non-controlled goods. In a recent survey, 45 per cent of American firms in China reported lost sales because Chinese customers were worried that the supply of critical components would be shut off by the US government. US controls can go too far, as when it added Xiaomi, a consumer technology company, to a military company list. The government reversed its decision when a US judge declared the blacklisting "arbitrary and capricious", but the damage was done. If a company such as Xiaomi, which posed no apparent security concerns, could be targeted, then it seemed almost any Chinese technology company could.

Coalitions

Controls imposed unilaterally or by a few countries can make it easier to reach consensus for more controls and faster adoption. However, if countries outside the coalition can supply the controlled goods, the controls risk serving as a Maginot Line that provides only the illusion of a security benefit. The Wassenaar Arrangement, for example, benefits from broad participation — including Russia and India — for this reason.

If the United States cannot get a coalition behind what it aims to control, it can impose extraterritorial controls such as FDPR, but it can only be effective in the few

domains where the United States has a chokepoint to use as leverage. Overt threats also hurt alliances; countries resentful about extraterritorial controls may withhold cooperation in other domains or lead to tacitly accepted evasion by their firms. Even in the days of the much stronger Cold War export control regime, other countries were continually finding ways to keep exporting sensitive technology to the Soviet Union.

Complexity

For rules to be effectively implemented, firms need to understand the rules. Excessively complex or broad rules can lead to a mess of both under- and over-compliance, as some firms might unintentionally violate the rules while others withdraw entirely rather than face the legal risk. Advanced technologies, business, and supply chains are all complex. There is often a trade-off between simple rules that can be overly broad, and complex, narrowly tailored rules. The recent semiconductor controls, for example, run 139 pages, largely in an attempt to focus them.

Short term versus long term

One threat on the horizon is "designing out" of US components. The increased use of controls, and especially the FDPR, makes firms, even those outside of China, cognisant that relying on US components and technology could capture them in the export control net. The United States may be safe where its technology is and remain indispensable, but other companies may win out in market competition if their products do not carry this liability. Technology is hard — if not impossible — to control forever, and each decision to design out US components erodes Washington's leverage to impose controls in the future. And the less China depends on US technology, the less the United States will know about its strengths and vulnerabilities.

Strikingly, unlike in the tariff war, China has not substantially retaliated against the export controls. That may be a sign of the United States' strong technology position, but it is also due to the fact that China wants to draw a contrast. Retaliating would worsen the business environment in China for US and other countries' firms, driving the type of decoupling that would reduce future investment and technology transfer to China. China may, however, retaliate against smaller countries such as Japan and the Netherlands if they match US controls, just as it retaliated against Canada for the arrest of Huawei CFO Meng Wanzhou by arresting two of its nationals instead of hitting back at the United States.

Trade-offs for the EU

Although some of the policy trade-offs regarding export controls are similar for US and EU policy-makers (complexity, short-term vs long-term), others look different from an EU vantage point. For example, there are differences in how two fundamental issues are evaluated: the scope of export controls and using a coalition of countries to implement new controls.

Scope

When Russia invaded Ukraine in February 2022, the EU joined the US-led coalition of 38 countries implementing export controls together with financial sanctions against Russia. But EU policy-makers are hesitant to apply these technology export controls beyond the "exceptional" case. Giving in to US requests to adopt the same export controls, the EU countries may risk their mostly open economic trade and investment relations with China. Germany in particular has tried to balance its strong transatlantic ties with an openness to doing business with China. There is political pressure from EU corporations, who have seen their returns shrink since the beginning of the war in Ukraine, given the lost business opportunities in Russia together with rising production costs in the energy supply crisis.

The EU could try to cling to the status quo by evading discussions about a new

and improved export control format. But such a foreign policy entails risks to European security. Inactivity would have costs: It could spoil cooperation with the United States in other policy areas, and the EU would forgo a chance to influence US decisions on the scope and design of export controls.

In fact, the EU already made a major step towards the United States when it agreed to issue the September 2021 TTC Inaugural Joint Statement. It declares that the United States and the EU should cooperate on export controls that go beyond traditional objectives in order to combat human rights abuses as well as address concerns about emerging technologies, MCF, and economic coercion — the statement is clearly about China, even if no country is named. Putting such a statement into practice would also strengthen the EU in potential future conflicts with China, which may try to drive a wedge between countries to stop them from coordinating their export controls.

Coalitions

Forming or joining a coalition of countries that would explicitly go against Chinese interests has been seen by many in Europe as a direct provocation to China's leadership, and thus a threat to smooth trade and investment relations with China.

At the same time, EU policy-makers already have to deal with the fact that the Biden administration went ahead with unilateral export controls against China, including new FDPR that keep EU corporations from exporting certain technologies. As US tensions with China increase, including major risks concerning Taiwan, Europe should expect more and tighter controls from the United States going forward.

Should the EU decide to deepen its cooperation on export controls with the United States in the TTC, it may benefit — as a next step — from cooperating with other economic powerhouses such as South Korea and Japan. Including additional countries or moving on to a plurilateral format may increase interaction costs. However, cooperation will be key to ensure that any controls will not simply leak in East or Southeast Asia. Moreover, it would help to guarantee that controls create a level playing field, for example that they do not disproportionately benefit American or other firms. Together with these partners, the EU countries could leverage their economic power to prevent — for example through the design of decision-making rules — the United States from determining which goods and technologies are controlled.

Recommendations for European policy-makers

Given the recent policy changes in the United States and in China, as well as new technologies and the security environment, European policy-makers need to rethink existing export controls. Although the EU last updated its regulations on exports of dual-use goods quite recently (in 2021), the result was a compromise that generally shied away from authorising controls at the EU level for areas such as human rights and national security unless they are included in multilateral regimes, such as the now frozen Wassenaar Arrangement. Nevertheless, national-level authorities were stretched to their limits and combined with EU-level sanctions authorities to impose export controls on Russia.

To act effectively, EU countries need to continue to review and update EU-level and individual countries' export control lists, despite the freeze of the Wassenaar Arrangement process following Russia's invasion of Ukraine in February 2022. Importantly, a more centralised process of evaluating how controls are implemented would be essential to close loopholes. It would improve transparency and thus increase trust among European governments knowing that their own controls will not result in their firms losing out on sales to exporters in another member state.

Next, the EU member states should increase their efforts to include investment controls in the EU's broader approach to

controlling sensitive goods and technologies. The Commission is already providing helpful guidance, but member states need to be more forthcoming in supplying information about their investment screening processes, including risk-assessment criteria and rate of denials.

One goal should be for the Commission to adopt controls that are strong enough to convince the US government to justify dropping the FDPR for goods and technologies traded between Europe and the United States — as was already done when they coordinated their export controls targeting Russia in February 2022. It is crucial that export control strategies include a positive agenda that reduces barriers between allies to ensure that goods exported to partners with fewer checks will not be diverted due to weak controls, which could boost trade compared to the status quo instead of restraining it.

At the same time, European policymakers need to come up with their own idea of what a successor or supplement to the Wassenaar Arrangement as a multilateral framework for controlling the spread of dual-use goods and sensitive emerging technologies should look like. Coordination in the coalition concerning controls for Russia has been mostly ad hoc, but there is a unique opportunity to institutionalise them, thus making them more durable and effective in addressing shared security concerns.

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