

Global Future Council on International Trade and Investment

Strategic Brief on Trade Rules for the Global Tech Race

The rapid technological developments of the Fourth Industrial Revolution are a key source of growth and opportunity in the global economy. Competition to lead the market on artificial intelligence, internet of things (IoT), nanotechnology and robotics, among others, is fierce. Actors, both public and private, keenly hope that doing so can drive future economic success, development and business expansion – not to mention provide solutions for pressing sustainable development objectives.¹

On the one hand, cross-country collaboration among governments, research institutions and business is a long-standing element of science and technology and has been a basis for progress in a number of areas. On the other hand, governments and firms across the globe also engage in legitimate – and non-legitimate – acts to get a foothold in a particular technology, pioneer commercial application and gain or consolidate market share in new technologies. Competitive tensions are deepening in the face of accelerating innovation, underpinned by a sense that future prosperity will be anchored in the control of the advanced technologies of today.

For years, the United States (US) has been the indisputable innovation front runner. Though still at a distance, China is moving decisively to position itself as a strong contender in science and technology (S&T). As we move towards a more “multi-polar” tech world, where two if not more countries vie for the top spot, commercial friction has increased and moved into trade. However, unilateral trade responses risk disrupting trade and investment flows while eroding the business environment for innovation progress. The Global Future Council on International Trade and Investment argues here that continued technological advancement depends

on an open, transparent, secure, global trade system for innovation to thrive. Differences will be more effectively solved by negotiations and conflict resolution, anchored in international, rules-based frameworks.

Who's in the lead?

Advanced economies such as the US, Germany and Japan have for decades strengthened domestic innovation ecosystems, invested in S&T, funded basic and applied research, and implemented education, fiscal, security and other policies to support firm innovation. Stated aims are to increase productivity, output, exports, jobs and incomes.

In the past 15 years, global research and development (R&D) has also changed significantly. Capacity has doubled, driven by the rapid increase in firm expenditure on R&D and by the increase in public R&D spending by emerging economies. OECD countries now account for a small portion of the increase in R&D capacity worldwide and their share of global gross expenditure on research and development (GERD) has fallen. The trend will likely continue assuming the sustained growth of emerging economies in the world economy.²

China, in particular, has made S&T a cornerstone of its development strategy. The country ranks second in terms of total R&D spending and accounts for 20% of total world expenditure. It produces the largest number of undergraduates with science and engineering degrees and has awarded more PhD degrees in natural sciences and engineering than any other country. It is making inroads into the top-quality segment of scientific publications.³

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The views expressed in this paper are those of the Global Future Council on International Trade and Investment and not necessarily the World Economic Forum.

Building on previous government policies, it is also pursuing decisive strategies to foster technological leadership in selected sectors, including new information technology, numerical control tools and robotics, aerospace equipment, ocean engineering equipment and high-tech ships, railway equipment, energy saving and new energy vehicles, new materials, biomedicine and medical devices, agricultural machinery and power equipment – embedded in *Made in China 2025*, the *13th Five-Year Plan* (2016-2020) and other official documents. The country is leading the way in narrowing the innovation gap between emerging and advanced economies. This is in large part a reflection of its fast economic rise and global repositioning.

China's scale and the resources allocated to science, technology and innovation may be a tremendous force for human progress.⁴ However, concerns have been raised by some stakeholders on Beijing's capacity to direct progress through a number of state and state-backed actors, such as state-owned enterprises (SOEs). Others point to the sheer volume of support, whether via direct subsidization or market preferences, given to domestic firms' R&D. Correspondingly, debate is ongoing on an alleged set of policies and practices related both to the acquisition of foreign technology by Chinese firms and the access of foreign firms to the Chinese market. The state interventions and market access moves are deemed by some governments and firms to be inconsistent with international trade rules, unreasonable or unfair, and have the potential to distort global economic activity.

Views on the topic are polarized. The US Chamber of Commerce takes issue with “the power of the state to alter competitive dynamics in global markets in industries core to economic competitiveness”.⁵ Others brand China's approach “innovation mercantilism” and consider it a threat to the global economic and trade system.⁶ By contrast, some have argued this narrative exaggerates the magnitude of the claims, particularly taking into account China's payments to use foreign technology.⁷ It has been pointed out that China is not the only country to rely on industrial policy to shift from imported to indigenous innovation and achieve national and economic competitive objectives. The argument is made that though countries should be held accountable when they do not follow the rules, the case against China needs to be founded on stronger grounds.⁸ Still others find that the allegations about China's policies and practices have no merit.⁹

Debate on the type of state support or action for technological innovation is related to economic and geopolitical tensions largely between China and the US – though the bilateral frisson has spillover impacts on other countries. Navigating the associated issues will not be easy or straightforward. Nonetheless, doing so will preserve a much-needed source of economic efficiency and growth – trade and investment flows – while providing guard rails for the global technological race to unfold in an efficient enabling environment where many can prosper.¹⁰

Can the WTO underpin the technology race?

The Global Future Council on International Trade and Investment supports open markets for trade and investment. It recognizes that while the benefits of economic globalization are significant, they have not reached all either for those with jobs displaced in advanced economies, or for the world's poorest countries. Yet it also considers that the rules-based international trading system is a great source of benefit for business and consumers. The World Trade Organization (WTO) provides a foundation for international commerce that is not nominally dictated by might and influence but rather an agreed set of common rules. In turn, these serve as the foundation for deeper regional and bilateral integration agreements.

Strong competition, anchored in rules-based frameworks, is critical for continued progress on innovation and technology. But countries and firms need a level-playing field to compete based on knowledge and ingenuity rather than on artificial advantages, as well as to deal with the negative spillovers of domestic policies. Further, given an uncertain environment, firm R&D spending could slow, with businesses avoiding risky projects. This would disrupt knowledge accumulation and be a drag on firms' long-term innovation capacity.

The WTO framework is relevant to the global technological race. It provides rules and disciplines for tariffs, quotas and trade remedies in relation to goods trade – such as semiconductor chips – as well as for measures in subsidies, local content requirements, intellectual property, investment, services, standards, government procurement and others. The WTO is also charged with monitoring relevant policies and practices, through its regular committees and other instruments, while the dispute settlement mechanism offers a forum for addressing compliance issues and solving conflicts, including trade-related industrial policy measures.

Some consider, however, that there are gaps in the rules on the future of trade. The issue has at least three related dimensions. First, do existing arrangements sufficiently govern new issues associated with the digital economy and technological innovation? Second, is the system equipped to address practices associated with industrial policies targeting key technologies? What should be deemed “fair” or “unfair” in the context of ensuring future global innovation? Can the WTO manage and mitigate pressures arising from the ascent of China and its distinct economic structure? Does the WTO still function with and for economic systems driven by state capitalism or with the characteristics of “China Inc.”?¹¹ And third, is there a need to improve the WTO's monitoring and dispute settlement functions to more effectively enforce a level playing field in the quest for technological progress?

New and strengthened disciplines could support digital trade, covering topics such as cross-border data flows, privacy, online consumer protection, cross-border e-commerce and others. In the current rapidly changing environment, it is particularly relevant to assess whether existing rules and enforcement mechanisms for the protection of intellectual property rights stimulate innovation and competition, without hampering access to knowledge and technology diffusion. Rules on technical barriers to trade equally need to be examined to ensure these keep pace with technology diffusion. Strengthened disciplines in subsidies, SOEs and government procurement are another component.

Recent trade agreements like the European Union-Canada Comprehensive Economic and Trade Agreement (CETA) and the Comprehensive and Progressive Trans-Pacific Partnership (CPTPP) have addressed some of these issues. Approaches include limiting the negative spillover effects of domestic tech policies, such as localization requirements, and dealing more broadly with the governance of the digital economy in areas like cross-border data flows. The CPTPP pioneers novel disciplines to govern commercial activities of SOEs under the principle of competitive neutrality, aiming to level the playing field across countries with different economic systems, like Viet Nam and Malaysia. The updated rules are a confirmation that cooperative solutions can be found to challenging economic issues.

There is also a case for strengthening the WTO's monitoring role. The organization provides a public good through the Trade Policy Review mechanism and has in place tools and instruments to deliver increased transparency. Improved timely, effective and full compliance with notification requirements by all members, use of counter-notification alternatives, and vigorous monitoring in relevant WTO committees could build understanding of policies undertaken and avoid conflict before it escalates.

The WTO dispute settlement system, meanwhile, has consistently demonstrated its effectiveness in solving a range of conflicts. It is probably one of the “busiest” international dispute settlement systems, reviewing about 600 cases since its inception in 1995, which suggests members’ confidence in its referee role.¹² All types of measures have been challenged, including, for example, Chinese industrial policies that favour SOEs and other domestic companies, discriminate against imports, and restrict access of foreign firms to the Chinese market, intellectual property rights, trading rights, and distribution services for products such as semiconductors, auto parts and renewable energy components.¹³

The system boasts a high record of compliance with its rulings. Many WTO members are aware though that the dispute resolution mechanism needs to be reviewed and improved, including duration of procedures, and have engaged in several attempts to do so.

A return to power-based mechanisms?

Advanced and emerging economies have engaged in some intergovernmental forums to address issues and concerns associated with technology, trade and investment in the digital economy. At the bilateral level, for example, the US and China agreed in 2015 to curb cyber-enabled intellectual property theft and committed to common efforts to promote norms of state behaviour in cyberspace.¹⁴ Business praised the effort as largely successful in curtailing cyber-theft for commercial gain.¹⁵

The approach shifted in August 2017 with the US decision to self-initiate an investigation under Section 301 of the Trade Act of 1974 into China’s acts, policies and practices related to technology transfer, intellectual property and innovation. The move signalled a return to a unilateral approach for addressing trade disputes that had fallen into disuse since the establishment of the WTO. The move –

along with US efforts to reduce bilateral deficits with China and other trading partners, its imposition of other restrictions on imports of solar panels, washing machines, steel and aluminium, and the withdrawal, suspension and renegotiation of key preferential trade agreements – has put a strain on the global trading system.

The Section 301 investigation concluded that a number of China’s acts, policies and practices are unreasonable and burden US commerce. It finds fault with foreign ownership and other investment restrictions to force technology transfer from US firms, imposing discriminatory licensing processes to transfer technologies from US to Chinese firms, directing and facilitating the investment in US firms by Chinese firms to obtain cutting-edge technologies, and conducting and supporting cyber-intrusions and theft from computer networks of US firms to gain access to intellectual property, trade secrets or confidential business information.¹⁶

To seek redress, the US proposed a combination of tariffs, dispute resolution and investment restrictions. First, after an initial consultation period, it would impose a 25% tariff on a list of products in an amount equivalent to \$50 billion, including electronics, televisions, medical equipment and others, many of which it finds benefiting from *Made in China 2025* policies. Second, it has requested consultations under the WTO dispute settlement mechanism against China’s alleged discriminatory technology licensing practices. And third, it is exploring measures to restrict China’s investment in the US aimed at obtaining sensitive technologies.

China threatened retaliatory tariffs on a range of US products, such as aircraft, soybeans and cars, worth approximately \$50 billion. President Donald Trump then called for retaliation on another \$100 billion worth of Chinese imports, while China indicated it was fully prepared to respond with a fierce counter strike. China has also filed a WTO complaint against the US over the tariffs that would be imposed under Section 301.¹⁷ Following high-level talks in May 2018, China committed to expand imports of US goods. US Treasury Secretary Steven Mnuchin subsequently indicated the planned tariffs linked to the Section 301 investigations would be put “on hold” – though that course has been reversed at the time of writing.

Escalating trade frictions have unnerved investors, rattled financial markets, disrupted supply chains and alarmed farmers and consumers. Were the US and China to move with the unilateral imposition of tariffs – above WTO-bound rates – further damage could follow. The world’s two major economies would be taking trade dispute resolution into their own hands. Others may be tempted to follow suit. With no global parameters to determine when the point of conflict has been successfully addressed, the fight could drag on.

There is a view that trade actions by the US and China are really aimed at increasing their respective leverage to enter into a grand deal of mutual interest. Nonetheless, systemic questions arise. Promises by China to switch purchases towards US producers risks diverting trade from third countries and signals the return to a trading system in which power and politics rather than market competition allocate resources. It is not clear if it will create a positive outcome for global innovation. And the landscape for countries engaging on the future of trade rules is fraught – to say the least.

Trade frameworks for future innovation

A global tech race should push forward humanity's progress, not hobble it through conflict. Several options could be pursued to encourage sustainable outcomes. The US and China have started a dialogue to address bilateral concerns. High-level meetings so far have led to commitments by China to increase purchases of US agricultural goods and energy, make structural changes to allow US firms to compete in the Chinese market, and protect intellectual property.¹⁸ Ultimately, future talks would do well to be guided by the goal of unleashing new opportunities through market opening, stronger commitments and verification mechanisms rather than managed trade. In any case, sustained engagement to manage frictions and define parameters for trade to enable innovation – so that innovation in turn drives more trade and prosperity – is critical.

As noted above, both China and the US are already using the WTO dispute settlement process. China is challenging the US Section 301 actions, while the US is seeking redress from China's alleged discriminatory licensing practices in violation of the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). Commentators have pointed out that there may be other remedies in the WTO that could be explored to confront China's alleged violations of intellectual property rules, which could include, for example, the potential of a systemic challenge to its intellectual property regime for the alleged failure to provide for effective enforcement mechanisms¹⁹ or relying on TRIPS undisclosed information rules to protect trade secrets.²⁰

Enforcement of China's protocol of accession to the WTO may provide another route for redress. Working within the WTO would allow both countries to manage commercial conflicts without the threats and pitfalls of retaliation and counter-retaliation. Importantly, the WTO conflict resolution mechanism is not without teeth – WTO-consistent economic sanctions can ultimately be used to enforce results.²¹ Additionally, though the complexity of the cases puts pressure on the system, it also helps to strengthen it, which can eventually help solve similar trade barriers and conflicts in other parts of the world.

Clearly, the WTO system for solving controversies could be made more effective, including rendering its reports within shorter time frames. The US and China could choose to invest in reforming the dispute settlement mechanism – building on significant reflection that has already taken place in the organization on this topic. Such a revision would require the participation of all members, but the leadership of both these countries would send a very strong commitment signal, energizing discussions in turn.

Likewise, both countries could lead an agenda of strengthening notification requirements and monitoring by WTO committees to make the trade system more transparent. No rules would need to change; it may mean more effective and active use by members of current norms or even supporting third-party, independent monitoring mechanisms, underpinned by increased use of technology.

A final important point: new and strengthened rules are required to properly underpin the global technology landscape. Different avenues could be pursued. The WTO

is a high-ambition target, given both its systemic relevance and the global nature of some of the challenges to be addressed. Members could build on formats already used to develop new rules in important areas, including multilateral agreements (as seen on government procurement), critical mass agreements (for information technology products) and membership-wide agreements focused on broad enablers (such as for trade facilitation).

In light of the challenges associated with WTO negotiations, countries do have other options at their disposal for trade talks. At the regional level, the US could take a renewed look at the CPTPP. The option is not free of challenges, for sure, but given its advances on critical issues it at least calls for a serious consideration. There are also bilateral alternatives. For one, the US and China have been engaged since 2008, on and off, on the negotiation of a bilateral investment treaty, which could prove to be an effective instrument to discipline some of the practices at issue. In addition to this option, private sector stakeholders in the US have raised the idea of a bilateral rules-based trade agreement between the two countries.²² Even if this seems politically out of reach currently, winds can change.

A technology-related trade negotiating agenda, coupled with more effective notifications, plus reforms to the dispute settlement system, could push forward global innovation. Unfortunately, continued trade frictions are likely in the short term, even if bilateral patches are found, and broader talks would take time. It is the way to go, however. The alternative is not only ineffective in the long term; it is dangerous. Tensions on trade and tech risk spilling into other areas. In explaining the importance of the Atlantic Charter – the genesis of the multilateral trading system – Churchill highlighted the peace and security origins of the system: "We have definitely adopted the view that it is not in the interests of the world that any nation should be unprosperous or shut out from the means of making a decent living for itself and its people by industry and enterprise."²³ This is as relevant in the 21st century as it was in 1941.

Endnotes

1. To achieve the 2030 Agenda for Sustainable Development and its Sustainable Development Goals, fundamental changes will be required on the way in which energy, food, water, housing, welfare, mobility and other goods and services are delivered, distributed and consumed. Innovation and technological development can help bring solutions and are being pursued. For example, a group of 22 countries and the European Union pledged to double clean energy research and development investment between 2015 and 2021, to tackle climate change. The group also committed to working closely with the private sector. See *New Innovation Approaches to Support the Implementation of the Sustainable Development Goals*. UNCTAD, 2017.
2. *OECD Science, Technology and Innovation Outlook 2016*. OECD, 2016.
3. Veugelers, R. *China is the world's new science and technology powerhouse*. Bruegel, 2017.

4. In 2016, China concluded the construction of a 500m Aperture Spherical Radio Telescope (FAST), with the objective of listening to sounds from distant galaxies and decoding cosmic messages. FAST is an example of a significant Chinese contribution to a global public good that will foster connectivity and better understanding of the universe. See “China: World’s Biggest Radio Telescope Detects Two Pulsars During Trial Run”. Newsweek, 15 May <http://www.newsweek.com/china-fast-worlds-biggest-telescope-two-pulsars-681346> (Accessed 28 May 2018).
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12. Reich, A. *The effectiveness of the WTO dispute settlement system: A statistical analysis.* European University Institute Working Paper LAW 2017/11.
13. Oh Bryn, S. *Convenient Compliance: China’s Industrial Policy Staying One Step Ahead of WTO Enforcement.* Mawr College, The East Asia Institute, May 2015.
14. *Fact sheet: President Xi Jinping’s State Visit to the United States.* White House, 25 March 2015.
15. The US-China Business Council. *Section 301 Investigation: China’s acts, policies and practices related to technology transfer, intellectual property and innovation.* Docket No. USTR-2017-0016, 28 September 2017.
16. *Findings Of The Investigation Into China’s Acts, Policies, And Practices Related To Technology Transfer, Intellectual Property, And Innovation Under Section 301 Of The Trade Act Of 1974.* Office of the United States Trade Representative, 22 March 2018.
17. This is not the first unilateral investigation to result in tit-for-tat tariffs. It is preceded by the recent US imposition of duties under Section 232 of the Trade Expansion Act of 1962 on imports of steel and aluminium and related countermeasures. However, the decision to activate Section 301, the scope of the measures in question and the potential impact of the retaliatory and counter-retaliatory measures, bring this case to a different dimension.
18. Mnuchin: Tariffs on Chinese products put on hold, ‘trade war’ averted. Inside US Trade, 20 May 2018.
19. The talks may also impact the US lifting its ban on American firms supplying Chinese telecoms gear maker ZTE Corp.
20. Bacchus, J. *How the World Trade Organization Can Curb China’s Intellectual Property Transgressions.* March 2018.
21. Bacchus, J. *Unilateral Tariffs vs. The Rule of Trade Law: The Case of Trade Secrets.* May 2018.
22. Ibid.
23. US National Association of Manufacturers (NAM). NAM Statement on 301 Tariff List Announcement. April 2018.
24. Nottage, H. *Trade in War’s Darkest Hour.* World Trade Organization. https://www.wto.org/english/thewto_e/history_e/tradewardarkhour41_e.htm (access 28 May 2018).

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