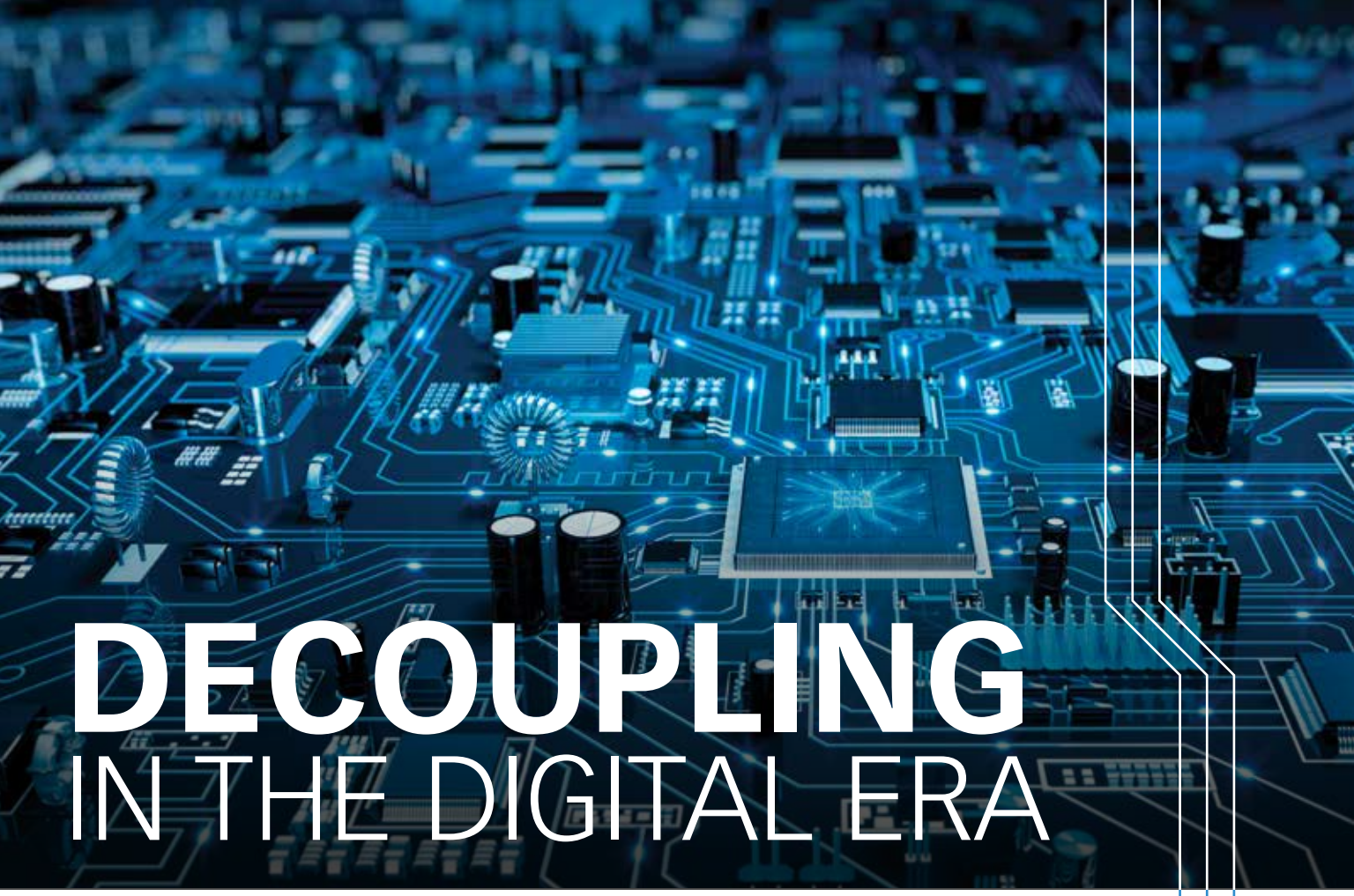


DECOUPLING IN THE DIGITAL ERA

Absent multilateral cooperation, the global digital economy could splinter, and everyone would pay

Daniel Garcia-Macia and Rishi Goyal

Technology wars are becoming the new trade wars.

In the race to dominate the technologies of the future, the competition between the United States and China has led to import and export bans of 5G network technologies, semiconductors, social media platforms, and data-based security applications across multiple countries. Countries are also imposing restrictions on financial market access for foreign tech firms deemed to be security risks. Trade liberalization in digital services is giving way to increased restrictions (see chart).

From a classical economic perspective, this escalation makes little sense. In traditional sectors, barriers to trade generally lower economic well-being in all countries involved, as they prevent efficient specialization and limit the variety of goods available.

In the digital era, however, leadership in emerging technologies bestows outsize profits, global market shares, and the ability to set standards. New services built on data, such as artificial intelligence, next generation 5G networks and the internet of things, and quantum computing have opened the way for new growth engines that promise to transform entire industries and lift productivity. This trend toward an increasingly digitalized and networked world has only been accelerated by the COVID-19 pandemic.

With a winner-takes-most dynamic—rooted in economies of scale and scope—global technological leadership is highly prized. The IMF *World Economic Outlook* has shown that a small fraction of highly productive and innovative firms has gained dominance and enjoyed large profits over the past two decades (IMF 2019). The phenomenon spans sectors and economies but is particularly acute in the digital sector.

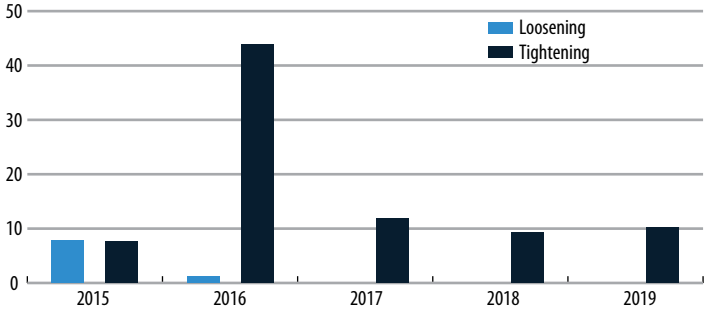
However, the race for leadership in digital technologies does not conform to traditional borders and intellectual property protections. The networked economy makes it possible to reach seamlessly across the world to collect information and make decisions, enhancing economic efficiency. But it also can allow thieves, saboteurs, and spies

ART: ISTOCK / NMLFD

A digital trade wall

Trade restrictive measures on digital services have replaced trade liberalization in recent years.

(GDP share of countries changing policies, percent)



Sources: Organisation for Economic Co-operation and Development (OECD); and authors' calculations.
Note: The sample comprises OECD countries and eight large non-OECD countries.

to reach back to steal, copy, manipulate, or destroy. Digitalization and connectivity have sped up the diffusion of knowledge while simultaneously bringing new security threats.

Toward a new tech order

Macroeconomists in general have treated security matters as largely distinct from economic matters, except where conflict and crime dominate. For the most part, they have taken the institutional underpinnings for safeguarding property rights and military matters as separate from the analysis of economic policy. But in cyberspace, there are no such distinctions; no effective domestic norms or public institutions for enforcing security, such as "e-police" or an "e-justice system"; and no international mechanisms for de-escalation and maintaining peace.

The interconnections of the digital era blur traditional distinctions between economic and security issues. Simultaneously engines of economic growth and channels of security risks, they link and incentivize the use of economic policy tools, such as trade and industrial policies, for broader security or geopolitical gains.

Thus, we are confronted with a new set of questions. When, if ever, does restricting digital trade make sense for an individual country? How does this affect other countries, and how should they respond? What policies and institutions can deter conflict?

In a recent IMF staff working paper, we show that some of the standard answers no longer apply in the digital era (Garcia-Macia and Goyal 2020). Once the key features of digital sectors are considered—large market power driven by scale economies, technology flows, and security risks—import and export bans can be rationalized from the point of view of an individual country. However, these bans come at a deleterious cost for the rest of the world.

In our analysis, the key motivation for banning technology imports—if a country hosts a potentially viable supplier—is to repatriate monopoly profits that would otherwise accrue to foreign firms. The presence of cybersecurity vulnerabilities only increases the attraction of banning imports of foreign technology. However, banning imports could halt inflows of technological knowledge and may be desirable only for a country with sufficiently advanced technological capacity and know-how. This is not an entirely new result. Trade economists have long pointed out that banning imports may be beneficial in monopolistic sectors.

More striking and novel is the finding that banning *exports* can also be beneficial for an individual country in the digital economy. The explanation lies in the dynamics of technological competition between countries. A challenger country can successfully displace a leader as the global producer and capture monopoly rents, as a result of international technology diffusion and domestic scale economies. To forestall such an outcome and reduce the associated cybersecurity vulnerabilities, the leader in a certain technology may seek to ban its exports.

Imposing trade bans could lead to retaliation. An import ban might help a technological power gain an advantage in global markets, although a competitor might also reciprocate the ban, leading to a worse outcome for both countries. In many cases, the anticipation of such reciprocity can act as a powerful deterrent.

Unlike import bans, export bans cannot be deterred with retaliation via trade policies. A technology leader would impose them irrespective of the challenger's response. Hence, they could be harder to defuse in a world of decentralized international competition.

Cooperation as a cure

These findings are sobering. Trade bans may benefit an individual country relative to the free trade outcome. But they cut off other countries from access to digital technologies or lead to inefficient decoupling into separate economic spheres. Costs are amplified when allies follow suit. Leading countries should be urged to set up cooperative frameworks in several areas.

Securing intellectual property rights across borders should be a priority. Minimum enforced

standards would be in everyone's interest. They would reduce concerns about misuse, forced transfers, or theft and thus diminish the incentives for a technological leader to impose export bans, allowing for longer periods of diffusion and higher global welfare. Steps toward defining global standards should start with fostering cooperation in specific areas. An example is the international standard for electronic data interchange among financial institutions that facilitates payments.

Clear, transparent, and uniform rules may also be needed on the interaction between the public and the private sectors. Governments' partnerships with domestic cyber technology firms for purportedly national security purposes, including surveillance, should be clearly ring-fenced.

A related area is cybersecurity. The advent of the internet has facilitated an explosion in cross-border online crime, for which the national and international tools, norms, and organizations have yet to be firmly established. Efforts to cooperate on cybersecurity have been stymied by competing interests among participants, national security considerations, differences in judicial and criminal systems, and concerns over misuse by governments.

Facilitating foreign ownership and control of monopolistic digital goods firms would also broaden the sharing of rents, align incentives for better global outcomes, and discourage trade conflict. Open financial or capital accounts to permit such ownership, governance arrangements to facilitate control, upholding foreign property rights, and narrowly circumscribing areas subject to national security arguments would be prerequisites.

Regarding regulatory policy, if consideration is given to breaking up large domestic technology firms to reduce their monopoly profits or otherwise regulating prices, this ideally should be done in concert across nations. The absence of a concerted effort could reduce the incentives for any country to pursue action in this area. If only one country or region moves toward strong regulation while foreign monopolists are free to compete, that area could risk falling behind in the race for technology and markets.

Coordinated initiatives to introduce digital taxation would similarly be much more effective and perceived to be fairer. Tech giants benefit from selling goods and services online across borders with limited physical presence and facing little income tax liability in the buyer's jurisdiction under existing international tax arrangements. This favors tax arbitrage and creates an uneven playing field.

A new Bretton Woods moment

The challenge of international cooperation against a backdrop of mistrust and competition has led to calls for a new Bretton Woods moment for the digital age. Just as Bretton Woods brought nations toward a new monetary order in the wake of two world wars, rampant protectionism, and the Great Depression, international cooperation on digital matters could similarly seek consensus on broad principles and common institutions to resolve problems, such as in the areas outlined above, and help create a predictable and open framework for international trade.

Another concrete proposal would be to establish a digital stability board—in the image of the Financial Stability Board—to develop common standards, regulations, and policies; share best practices; and monitor risks (Medhora 2021). This could help protect financial stability from cyberattacks and bring about progress in areas such as a charter of technological rights, uniform statistics for the digital economy, and international data trusts to collect and guard individuals' data for designated purposes, such as health research.

If, as is expected, the monopoly rents on offer remain large and cyber warfare is seen as the key arena for security conflicts in the future, there will be strong domestic resistance to collaboration. In this case, continued tech conflict, with the risk of a global rupture and its associated adverse spillovers, looms large. Collaboration would weaken the incentives for conflict and lead to potentially better outcomes. But it will require sustained effort and rebuilding trust. FD

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