

STORMS AHEAD

THE FUTURE
GEOECONOMIC
WORLD ORDER



Johann **Strobl**
Heiko **Borchert**

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Introduction

Johann Strobl

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Hardly a day goes by without news about sanctions, trade restrictions, or monetary competition. Power politics is back on the international agenda, and it influences the way Raiffeisen Bank International (RBI) and our clients do business. With subsidiaries in 13 countries, we serve more than 17m clients across Austria and Central and Eastern Europe (CEE). Geoeconomics has come to affect our operations as clients become targets of sanctions regimes, capital transfer is being restricted, and political and economic risks prompt our clients to adapt or change corporate strategies.

Growing geoeconomic competition challenges the business environment in CEE countries. Most of the region's countries have benefited from closely integrating into the European Single Market and providing added value to the supply chains of EU-based companies. If and to what extent supply chains reaching into CEE markets can withstand or benefit from growing geoeconomic competition remains to be seen. Stepping up intraregional dialogue on mitigating negative cascading effects will be as important as increasing cooperation with EU partners to advance the resilience of these supply chains. In addition, the search for collaborative approaches to ensuring security of supply could offer new opportunities to CEE markets that stem from comparatively favorable labor markets, technology savviness, and corporate agility.

As a leading commercial and investment bank, we need to become better at understanding and navigating the geoeconomic world looming at the horizon. Geoeconomics affects our way of doing business in different ways. The risk calculus is the first and most obvious aspect for an international bank operating, *inter alia*, in countries like Russia, Belarus, and Ukraine. Although political risk has always been part of our risk governance, the rise of geoeconomics requires us to take a closer look not only at the motives of state and non-state actors but also at the interplay between the two in view of advancing the provision of early warning information for internal decision-making and in support of our clients.

In addition, geoeconomics also affects the way in which RBI supports clients in hedging against new risks. As the authors in this volume make clear, geoeconomics drives systemic competition that might bifurcate corporate ecosystems. If products and technologies are no longer interoperable, the business world will change fundamentally. This requires us to think about how to best hedge against risks like economic and technological decoupling. RBI has embarked on a comprehensive digitalization program that plays a key role in streamlining internal processes and improving our bank's reach-out to

our clients. Modern technologies can also provide us with the tools to assess data in new ways, thereby strengthening our take on political and economic developments.

Modern digital technologies are at the top of growing geoeconomic competition, however, as this volume will show. The strive for accessing digital technologies and the data they produce is driving interventionist and protectionist public policies. As a result, companies must remain vigilant by rethinking how best to use the benefits of digitalization while avoiding becoming the victims of data regimes that will not allow companies to relocate data outside specific countries.

Overall, public and private means to deal with current and future geoeconomic challenges are likely to remain limited. That's why we need to step up efforts to bring public and corporate decision makers closer together. I support ideas for closer dialogue that are advanced in several chapters of this volume. Although public and private stakeholders each have their own sources of information, the new geoeconomic environment prompts the need for a more structured exchange of information and joint assessments of political developments in other countries and regions that might affect national and European policies as well as corporate strategies. We have stepped up our efforts internally, and we reach out to clients to better understand how to optimally serve their needs. This volume brings both avenues together by shedding light on the current and future geoeconomic world order through the eyes of practitioners and strategic analysts.

This collection starts with three conceptual chapters, followed by four regional perspectives and four chapters addressing specific topics of strategic interest. In his introduction to this volume, Heiko Borchert, an international strategic affairs advisor, argues that today's geoeconomic practice differs from the past because of the changing fabric of the international system, the emergence of new and diverging Western and non-Western domestic political preferences, and the fact that connectivity increasingly turns toxic. As a result, a new geoeconomic responsibility to protect emerges that is highly ambivalent from a corporate perspective. That's why companies respond with defensive corporate geoeconomics, primarily looking at corporate preparedness and offensive corporate geoeconomics meant to use and shape economic exchanges across land, air, sea, space, and cyberspace. Overall, Borchert argues that the new geoeconomic environment prompts the need for adapted modes of public-private interaction, inter alia, with the

help of strategic-level dialogue underpinned by a geoeconomic dashboard highlighting political and economic risks as well as opportunities.

Echoing Borchert's introduction, Thomas Wieser, the former chairman of the Eurogroup Working Group, takes a closer look at the rise of systemic divergence and the future economic order. He traces the evolution of globalization since 1990 and argues that foreign and security policies have increasingly become major drivers of trade and investment policies, thus taming the hitherto almost unchallenged market forces. This development goes hand in hand with rising concerns over dependencies on foreign partners and more interventionist government policies. Consequently, international politics becomes more contested, and trade changes. In sum, Wieser argues, there is little likelihood that the current emphasis on export restrictions, import and investment barriers, and increasingly sophisticated border measures will abate in the decades to come, thus prompting a need for politicians to rise above their own backyards.

If economic distortions proceed, nations must prepare adequately. Margarethe Schramböck, Austria's Federal Minister for Digital and Economic Affairs, picks up this line of reasoning by arguing that Austria has disproportionately benefited from the advantages of open markets and an international, rules-based world trading system. COVID-19, however, as well as other challenges like growing geoeconomic competition, climate change, or digital disruptions clearly show that these benefits cannot be taken for granted. Therefore, Austria needs to balance openness and preparedness. As Minister Schramböck explains, the country's response to a more contested international environment is three-fold. First, it depends on leveraging Austria's role inside a strong European Union, which provides the required framework, *inter alia*, to manage resource supply security or the screening of foreign direct investments in Europe. Second, Austria needs to step up national efforts to advance economic preparedness (*wirtschaftliche Krisenvorsorge*). That's why her ministry has developed a new national strategy emphasizing the need to enable crisis management, continuity management, and preparedness. Finally, activities meant to advance national economic preparedness also require strategic-public dialogue to include business representatives as well as business expertise in national and European activities.

Overall, the integration of Central and Eastern Europe into the EU has greatly benefit Austria's export-oriented companies. But geoeconomic and geopolitical turbulences can endanger what has been accomplished. Therefore,

Dmitri Trenin, director of the Carnegie Endowment in Moscow, starts this volume's regional focus with a detailed look at Russia's new national security strategy, adopted by President Vladimir Putin in July 2021. Russia's new capstone document describes an international environment characterized by intense confrontation with the United States and its allies. As Trenin argues, the focus on geoeconomics is the strategy's most striking feature, as it constitutes a deviation of the country's traditional focus on geopolitics and its international status. As Moscow sees it, the current Western-centered international order has not been replaced by fragmentation but is superseded by a system in which non-Western nations play an increasingly more important role. The new National Security Strategy acknowledges the need to completely transform the national economy, thereby leveraging Russia's expertise in science and technology and its political relationships with China as well as other important but non-Western players. Trenin concludes that Russia's leadership is willing to restore its economic ties with the West but is unprepared to make one-sided political concessions to the United States and the EU to achieve this goal.

Twenty years ago, China joined the World Trade Organization. Since then, the country has embarked on an impressive journey of economic growth, yielding an average income per capita higher than in Mexico or Turkey, as Alicia Garcia Herrero, senior fellow at Bruegel, Brussels, and adjunct professor at Hong Kong University of Science and Technology, argues. This progress also creates political and geoeconomic challenges, however. China's international environment changed drastically under former U.S. President Trump. Although current U.S. President Biden may have softened the rhetoric vis-à-vis allies in the Asia-Pacific region and in Europe, he continues his predecessor's policy on reducing dependence on China and preserving U.S. financial and technological leadership. According to Herrero, China responds to U.S. pressure by adopting a new dual circular strategy aimed at advancing national self-reliance. In addition, China also works towards launching an official digital currency, the E-CNY, to challenge the hegemony of the dollar as the world's leading currency. As she argues, if and to what extent China manages U.S. efforts aimed at countering China's rise will influence the speed at which China's growth rate slows down.

China and Russia remain contentious issues for the transatlantic partnership. But despite four years of strained U.S.-European relations, the transatlantic partnership remains a preeminent economic force, generating US\$6.2trn in total annual commercial sales, as Daniel S. Hamilton, a former senior U.S.

diplomat and President of the Transatlantic Leadership Network, explains. In his view, U.S. President Biden and EU leaders have moved quickly to open a new chapter in transatlantic relations, *inter alia*, by removing bilateral trade irritants and creating a new Transatlantic Trade and Technology Council. In the long run, however, President Biden's foreign policy for the middle class requires the transatlantic couple to align its geostrategic and geoeconomic goals more closely, contends Hamilton. In his view, health security will remain high on the transatlantic agenda, as will also climate change and the need to promote jobs and economic growth. Digital technologies constitute important elements of all these policy areas, but according to Hamilton, the United States and the EU have allowed a series of digital disconnects to roil bilateral relations. The new Transatlantic Trade and Technology Council could provide a framework to address these issues, but diverging legal regimes continue to strain joint digital action. This continues to remain a strategic concern, as technological innovation and geopolitical competition are transforming the very nature of money, thus creating significant dilemmas for public and private stakeholders.

How the transatlantic partners, China, and Russia will get along with each other in the future will affect the prospects of other regions. Theodore Karasik, senior advisor at Gulf State Analytics in Washington, DC, rounds off this volume's regional assessments with a look at the increasingly close geoeconomic relations bringing China, Russia, and the Arab Gulf together. As he argues, the triangulation of cross-government relations goes hand in hand with stronger business ties, thereby gradually lowering the influence of the transatlantic partners in a region that remains key to the world economy. As Karasik shows, the geopolitical weight of the Arab Gulf, China, and Russia is not measured in traditional statistics but in maneuvers and actions that give them advantage over their competitors. Because these nations are less "entangled" by international commitments, they enjoy more strategic leeway in areas like energy policy, finance, logistics and connectivity, modern digital technologies, and vaccine diplomacy. Beyond the Middle East, the triangular partnership increasingly projects political and economic power into Central Asia, Africa, and Latin America, thus rivaling the transatlantic partners. This comes with strategic consequences, as the triangular partners are attempting to sidestep the threat of Western sanctions by creating an alternative global economic system, Karasik argues. The Arab Gulf countries, in particular, have not yet been the focus of Western sanctions, thus providing the triangle with much needed political and financial oxygen.

Connectivity is the key lubricant of the triangle connecting China, Russia, and Arab Gulf nations. Overall, 80% and more of global trade occurs via international production networks of multinational companies.¹ These networks take center stage in today's geoeconomic competition. Ross Kennedy, senior fellow at the U.S.-based Security Studies Group, takes a close look at the growing geoeconomic pressure on corporate supply chains that link all the regions discussed in this volume. Kennedy observes that the international system is entering a post-Westphalian order in which supply chains are likely to be reorganized around decentralized production. In his view, the next cycle of geopolitical realignment will be shaped by three factors: bifurcation of geoeconomic systems due to increasing weaponization of global connectivity; increased possibility of mounting conflicts between state and non-state actors for access to and use of critical minerals, resources, and means of production; and a growing movement away from globalized supply chains towards national and/or regional self-sufficiency. Although political and corporate decision-makers are increasingly aware that more must be done to advance the agility and resilience of individual and collective supply chains, the ability to scale beneficial technologies and to overcome regulatory capture constitute two significant hurdles that remain to be tackled. Kennedy adopts a complex systems perspective to reflect upon future consequences for supply chain management and the need to strengthen self-organized criticality as well as scale down serious principles to advance supply chain resilience. In this regard, new technological options to further digitize supply chains and advances in material structures that help boost decentral production and transport solutions will be important, Kennedy argues. Despite the increasingly popular narrative of a global bifurcation, he contends that decision makers need to acknowledge the need for robust international trade of some significant scale. In this regard, Kennedy concludes by emphasizing the need to optimally combine public-sector resources and private-sector agility to live as freer and more prosperous people.

Corporate supply chains depend on infrastructure to connect different regions. Infrastructure development, however, is becoming increasingly politicized, as Björn Fägersten, Swedish Institute of International Affairs, Stockholm, and Tim Rühlig, German Council on Foreign Relations, Berlin, illustrate. They develop an ideal-type framework that differentiates between four stages of infrastructure development (finance, innovate and regulate, design and con-

1 According to WTO statistics quoted by: Gregory Shaffer, *Emerging Powers and the World Trading System. The Past and Future of International Economic Law* (Cambridge: Cambridge University Press, 2021), p. 19.

struct, own and operate) and three mechanisms of infrastructure influence (extracting information, controlling and regulating access, and establishing dependency). Against this background, Fägersten and Rühlig acknowledge the paradoxical fact that infrastructure has played a major role in bringing EU member states together internally but has long remained absent from the EU's foreign policy agenda. Although this is changing gradually, more should be done. To this purpose, the authors argue, first, that the new strategic compass of the EU might help to align diverging views, for example on Chinese investments in Europe. In addition, the different arms of the EU need to work better in concert to leverage the potential offered by infrastructure policies, for example via the new European connectivity strategy. Finally, Fägersten and Rühlig agree with other authors writing in this volume that the rise of geoeconomics requires new modes of public-private interaction at national and European levels to overcome the gap between political decision makers and business.

Elisabeth Köstinger, Austria's Federal Minister for Agriculture, Regions and Tourism, sheds light on the country's new raw materials roadmap 2030. She argues that adequate supply of raw minerals under fair market conditions is essential for sustainable economic growth. However, the COVID-19 pandemic reveals the vulnerability of current security of supply frameworks. Sufficient supply of mineral raw materials is essential to develop and provide key technologies needed to tackle pressing challenges like climate change and energy transformation, health and nutrition, mobility, digitalization, communication, and security. According to Köstinger, a focus on innovative solutions along the entire value chain is important to enhance industrial competitiveness and sustainability. Concepts like the circular economy will help secure sustainable resources supply in the long term. In contrast, disruptive events underline the importance of domestic production and the increasing demand for national independence from cradle to grave – or, more sustainably, from cradle to cradle. To this purpose Austria's Master Plan Raw Materials 2030 emphasizes the need for sustainable supply from domestic sources and international suppliers as well as smart production, circular economy, and new value-adding technologies and products. In addition, the Master Plan addresses several cross-cutting issues, including mining operations, digitalization, and automation as well as research and development and education and training. Given fundamental changes in Austria's geopolitical and geoeconomic environment, the Master Plan also underlines the need for strategic alliances in tandem with the EU's emphasis on strategic raw material partnerships, for example, with Ukraine and Canada.

Kirsten Westphal, research associate at the German Institute for International and Security Affairs (Stiftung Wissenschaft und Politik, SWP), rounds off this volume with an in-depth analysis of the EU's new green deal amid growing geoeconomic challenges. According to Westphal, it is idealistic to assume that nations around the globe would join forces to mitigate the consequences of the climate crises. Instead, national energy pathways as well as recovery and growth models look very different across the globe, making the upcoming energy transition a process that could lead to more – not less – global unevenness, heterogeneity, and fragmentation. As clean energy technologies and energy-related are turning into objects of geoeconomic competition, the EU's energy and climate policies faces a thorough litmus test. If and to what extent the EU can successfully implement the European Commission's ambition to become a leader in global energy and climate policies depends on several aspects. The EU must improve its coherence among different policy areas and position itself strategically in an increasingly assertive geoeconomic environment. This requires the EU to strike a delicate balance between resilience and efficiency by highlighting the need for substitutability, diversification, and sustainability. In addition, the EU needs to sustain technological leadership for the energy transition by locally developing strategically relevant energy technologies while at the same time investing more in international partnerships. Finally, energy transition needs to go hand in hand with a sustained producer-consumer dialogue to leave current energy systems and make their restructuring crisis-proof.

In conclusion, I would like to express my gratitude to all of the authors for sharing their sophisticated expertise to this joint volume. A diverse and complementing set of perspectives, the multiregional approach, and the blending of conceptual approaches with practical insights makes this volume a much-needed compass to guide us through increasingly stormy waters. RBI takes this joint effort as a launch pad to continue monitoring and assessing current and future geoeconomics developments. RBI will also translate the findings and recommendations developed in this volume into new formats to promote a broad and sustained dialogue in our key markets. This will strengthen personal and institutional networks and advance informed debate among political decision makers, corporate leaders, and academic experts.

2

New Geoeconomics: A Primer

Heiko Borchert

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Globalization is a quintessential geoeconomic phenomenon. But although almost everybody has been reaping the benefits of global exchanges of strategic flows such as commodities, data, money, goods, and services as well as the free movement of people, one core feature has been overlooked: Globalization is nothing without infrastructure, and infrastructure runs through corridors that are subject to multifold state and non-state interests. Thus, globalization has never occurred in a political vacuum but has been shaped by political forces. Today, these political forces are changing geoeconomic practice.

Geoeconomics is the projection of economic power within and across five essential domains² – land, air, sea, space, and cyberspace – to achieve political goals. What sets today's geoeconomic practice apart from the past is the changing fabric of the international system, the emergence of new and diverging Western and non-Western domestic political preferences that give geoeconomics a new twist, and the fact that connectivity increasingly turns toxic. Powerful emerging economies mimic the Western use of the geoeconomic toolbox. Consequently, Western governments need to prepare for economic countermeasures targeted at exploiting the vulnerabilities of highly intertwined economies. At the same time, wielding geoeconomic power among allies becomes contested, as it erodes the common economic foundation of the West at the very moment it engages in systemic competition with non-Western challengers.

These changes alter the operating environment of business, as strategic flows, corporate supply chains, and corporate technology development constitute the core of today's geoeconomic competition. This prompts the need for a corporate geoeconomic response. Defensive corporate geoeconomics primarily looks at corporate preparedness to mitigate geoeconomic risks. Offensive corporate geoeconomics strives to benefit from and shape the forces of economic power projection. Overall, the rise of corporate geoeconomics and non-Western geoeconomic practice require public and private stakeholders to develop new modes of cooperation to ensure successful economic statecraft and corporate business development.

2 Originally, domain is a military terminus describing an operating space „whose access or control is vital to the freedom of action and superiority required by the mission.“ See: Jeff Reilly, „Beyond the Theory: A Framework for Multi-Domain Operations,“ *Over the Horizon*, April 13, 2018, <https://othjournal.com/2018/04/13/oth-video-beyond-the-theory-a-framework-for-multi-domain-operations/>.

Contemporary Geoeconomic Toolbox

Geoeconomics and geostrategy are age-old “conceptual siblings” that deal with the projection of power to wield influence by considering geospatial conditions. Whereas geostrategy primarily emphasizes the use of different instruments to achieve political goals, geoeconomics focuses on the use of economic instruments to shape economic exchanges for political returns.³ The geospatial dimension⁴ is important, as it shapes actors’ preferences and their ability to project power, which is best illustrated by supply chains, the center of gravity of today’s geoeconomic competition.

Supply chains connect regions of origin, transit, and destination. Actors operating at each stage can wield power and influence depending on factors such as the economic power and size of markets, the criticality of a product, or the very specific geographical location that turns a location into an important transport hub. Three forces of power shape supply chains:⁵ Downstream power results from the supplier’s attempt to control all value-adding steps from production to consumption. Upstream power illustrates the reverse mechanic, thereby leveraging the power of a consumer market to influence who is involved in producing a product and how it gets to the destination. Midstream power attempts to make the best out of both worlds by accruing power from the fact that supply chains are in transit from origin to destination. The rise of the Arab Gulf carriers that serve Western and Eastern passenger and cargo destinations perfectly illustrates midstream power. As Margarita Balmaceda has argued with reference to the energy sector, it is impossible to understand geoeconomic power projection without considering how supply chains “deeply penetrate local politics and business in each state through which this chain goes.”⁶

- 3 Zbigniew Brzezinski, *The Grand Chessboard. American Primacy and its Geostrategic Imperatives* (New York: Basic Books, 1997), pp. 37–40; Robert D. Blackwill and Jennifer M. Harris, *War by Other Means. Geoeconomics and Statecraft* (Cambridge/London: Harvard University Press, 2016), p. 9; Gideon Rose, “Geo-economics, Trade and the Liberal Order,” in *The Age of Economic Coercion: How Geopolitics is Disrupting Supply Chains, Financial Systems, Energy Markets, Trade, and the Internet* (Geneva: WEF, 2016), https://www3.weforum.org/docs/WEF_Age_of_Economic_coercion.pdf.
- 4 Sören Scholvin and Mikael Wigell, “Geo-Economic Power Politics. An Introduction,” in Mikael Wigell et. al., (eds.) *Geo-Economics and Power Politics in the 21st Century. The Revival of Economic Statecraft* (London: Routledge, 2019), pp. 1–13, here p. 9.
- 5 Heiko Borchert, *Flow Control Rewrites Globalization. Implications for Business and Investors. HEDGE21 Strategic Assessment* (Dubai: HEDGE21/Alcazar Capital, 2019), pp. 29–31, https://www.borchert.ch/wp-content/uploads/2021/08/1901_Borchert_Flow_Control.pdf.
- 6 Margarita M. Balmaceda, *Russian Energy Chains. The Remaking of Technopolitics from Siberia to Ukraine to the European Union* (New York: Columbia University Press, 2021), p. 40.

Against this background, Figure 1 illustrates the current geoeconomic toolbox. The use of disciplining (sticks) and enabling instruments (carrots) rests on a material and digital infrastructure illustrated as the foundation. If, to what extent, and with what effect these instruments will be used depends on worldviews and values that drive norms, rules, and principles, which in turn influence standards that shape markets and economic behavior. Together these elements constitute the ideational frame of geoeconomic practice.

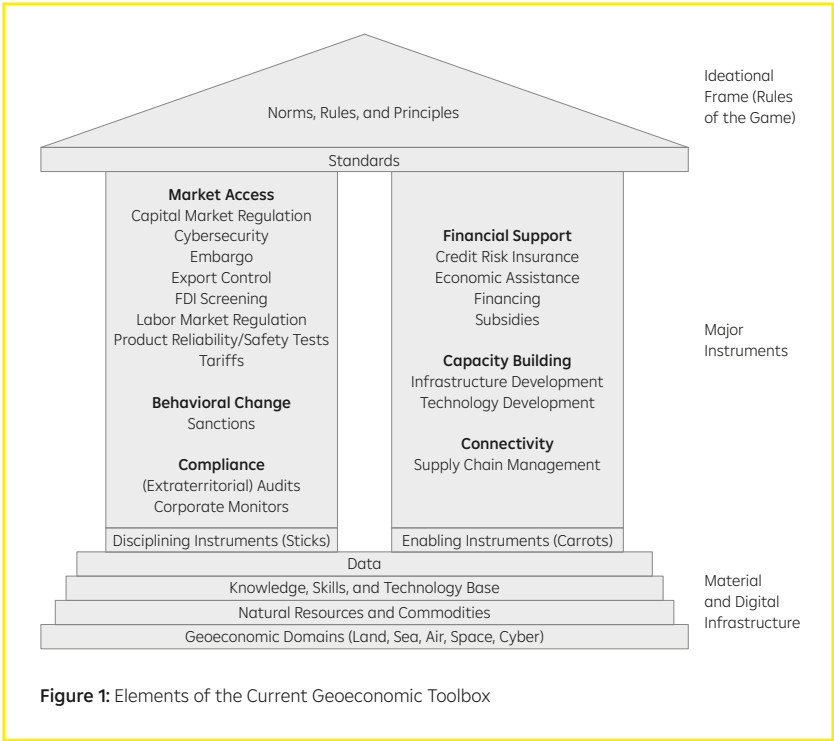


Figure 1: Elements of the Current Geoeconomic Toolbox

The material and digital infrastructure is intimately tied to the five geoeconomic domains. In fact, it is via land, sea, air, space, and cyberspace that geoeconomic and geostrategic practice go hand in hand. The United States best illustrates this close relationship. From a U.S. perspective, technological leadership underpins economic success, which ensures military superiority.⁷

7 Michael Adas, *Dominance by Design. Technological Imperatives and America's Civilizing Missions* (Cambridge/London: Harvard University Press, 2006); Stephanie Carvin and Michael John Williams, *Law, Science, Liberalism and the American Way of Warfare* (Cambridge: Cambridge University Press, 2015).

Given its geographic location, power projection is in the country's political, economic, and military DNA, because it is the only way to influence developments abroad. The fact that China is exactly mimicking this approach in its attempt to shape international affairs explains Washington's alarmism. In addition, geospatial aspects play a key role in determining a nation's resource richness or poverty, which can be leveraged via downstream power. However, raw "resource power" is increasingly being tamed by normative goals that emphasize sustainability rather than (one-sided) resource exploitation. As will be discussed in the next section, this is set to be one of the most fundamental drivers of future geoeconomic power-wielding, as it makes geoeconomics subject to different visions about the social contract, i.e., the interplay between political, societal, and market forces.

Political choices shape the foundational infrastructure of the geoeconomic toolbox, which becomes most obvious when looking at the remaining two elements. The technology base underpins economic power, but technology alone is insufficient without knowledge and skills that turn ideas and technology into products. This explains why ambitious emerging countries are no longer satisfied with getting access to technology from international partners but strive to develop technology locally and ramp-up indigenous work force programs. The resulting indigenization is essential for reducing dependence on foreign partners, which becomes even more important the more these countries want to shape regional and international affairs. Finally, digitalization binds all foundational elements together and produces data as a new commodity, which is highly sought after but also increasingly contested.

How actors use geoeconomic instruments depends on their goals. Most of the instruments depicted in Figure 1 can be used to exert positive or negative influence, thus the illustration reflects the most typical application.⁸ Let's look at these goals and instruments in more detail:

- **Market access:** Tariffs, embargos, and export controls are standard instruments for rendering product supply more difficult. Most recently, export controls have regained prominence to prevent the proliferation of strategic technologies. Worries about unwanted access to strategic technologies have also led to new and/or modified regulations to screen foreign direct investments. In this regard, requirements to create trans-

parency concerning the Ultimate Beneficial Owner (UBO) of a company become an effective means to exclude certain actors from specific markets, in particular if these actors are state influenced. Given rising concerns over technology access, cybersecurity as a security instrument is turning into a geoeconomic instrument. Most recently, for example, the Cyberspace Administration of China has toughened regulations on cross-border data sharing, thereby effectively paving the ground for separate Chinese and non-Chinese data ecosystems and prompting companies to reconsider existing business models.⁹ Product reliability and safety tests can be used in a similar way, as Tesla's recent recall of vehicles in China over issues with the autopilot software illustrates.¹⁰ Finally, market access restriction also spill over into labor markets as governments express concerns over engaging with scientists from strategic competitors. Enforced delisting from stock markets and more demanding IPO requirements can limit financial market access for the companies of a strategic competitor.¹¹

- **Behavioral change:** Sanctions remain the preferred geoeconomic instrument for changing somebody's behavior. Over the past decades, governments have honed their sanctions-related capabilities. For example, international sanctions against Russia that "prohibit providing new debt or new equity greater than thirty days' maturity to identified persons operating in the Russian financial sector"¹² illustrate a sophisticated understanding of business operations and a target's refinancing costs. But despite the growing sophistication, the sanctions record is mixed. On the one hand, targets learn to live with sanctions, for example, by emphasizing indigenization and reaching out to non-Western partners.¹³ On the other hand, sanctions create drawbacks, such as China's most recent anti-foreign sanctions law.¹⁴

- 9 Alexa Lee, „Personal Data, Global Effects: China's Draft Privacy Law in the International Context,“ *New America Blog*, January 4, 2021, <https://www.newamerica.org/cybersecurity-initiative/digichina/blog/personal-data-global-effects-chinas-draft-privacy-law-in-the-international-context/>; Lingling Wei, „China's New Power Play: More Control of Tech Companies' Troves of Data,“ *Wall Street Journal*, June 12, 2021, <https://www.wsj.com/articles/chinas-new-power-play-more-control-of-tech-companies-troves-of-data-11623470478>; Dana Heide et. al., „China wird zum Datensilo,“ *Handelsblatt*, June, 18-20, 2021, pp. 24-25.
- 10 Eva Xiao, „Tesla Addresses Safety Issues in More Than 285,000 Vehicles in China,“ *Wall Street Journal*, June 26, 2021, <https://www.wsj.com/articles/tesla-recalls-285-000-vehicles-in-china-most-of-them-locally-made-11624698587>.
- 11 *The Dawn of Capital Market Sanction. The US Government Embraces a Potent New Lever of Financial Statecraft* (Washington, DC: RWR Advisory Group, 2021), <https://www.rwradvisory.com/rwr-report-the-dawn-of-capital-markets-sanctions/>.
- 12 Richard Nephew, *The Art of Sanctions. A View from the Field* (New York: Columbia University Press, 2018), p. 158.
- 13 Richard Connolly, *Russia's Response to Sanctions. How Western Economic Statecraft is Reshaping Political Economy in Russia* (Cambridge: Cambridge University Press, 2018), pp. 8-9.
- 14 Xu Huang and Sophia Tang, „China Enacts the Anti-Foreign Sanctions Law,“ *Conflict of Laws*, June 21, 2021, <https://conflictoflaws.net/2021/china-enacts-the-anti-foreign-sanctions-law/>.

- **Compliance:** Growing sophistication in sanctioning third parties goes hand in hand with smarter ways to enforce compliance. Here the U.S. practice offers two interesting examples. Former U.S. Secretary of State Mike Pompeo had reportedly tasked the overseas development agency USAID to conduct cybersecurity audits in third countries before providing development assistance, with the goal to remove Chinese products from the local telecommunications infrastructure.¹⁵ In a similar way, the United States has mastered the art of requiring non-compliant foreign companies to appoint corporate monitors¹⁶ to testify compliance with legal judgments. In doing so, these corporate monitors are gaining access to corporate informational crown jewels.
- **Financial support:** Financial support is used to curry favor for geoeconomic initiatives that serve individual or collective goals. Economic assistance in combination with technology sharing is a case in point. China has used this mix in the South-South Cooperation Program with the Food and Agriculture Organization to combine agricultural tools and equipment with hands-on expertise of Chinese scientists deployed for several years to countries participating in the program.¹⁷ Other examples include direct government support of high-technology programs such as aircraft development by Boeing and Airbus or the most recent European Union (EU) plans to use the COVID-19 recovery funds to build high-speed trains or green hydrogen infrastructure.¹⁸
- **Capacity building:** Capacity building in combination with infrastructure development can open doors to long-term partnerships.¹⁹ China's Belt and Road Initiative and the EU-Japan Connectivity strategy fall into this category, as does also the U.S.-Japan plan for joint infrastructure development in the Indo-Pacific.²⁰ Whereas these programs can tailor support to target countries, there is a risk of crowding-out effects due to the

¹⁵ „Mike Pompeo Mobilizes USAID Against Huawei,” *Intelligence Online*, October 16, 2019, p. 2.

¹⁶ Vikramaditya Khanna and Timothy L. Dickinson, „The Corporate Monitor: The New Corporate Czar?”, *Michigan Law Review* 150:8 (June 2007), pp. 1713-1756; „French Finance Minister Explores New Economic Security Measures,” *Intelligence Online*, December 13, 2017, p. 5.

¹⁷ *FAO-China South-South Cooperation Programme* (Rome: FAO, 2015), <http://www.fao.org/3/a-i4700e.pdf>.

¹⁸ „Laying the Foundations for Recovery: Italy” (Brussels: European Commission, 2021), https://ec.europa.eu/info/system/files/italy-recovery-resilience-factsheet_en.pdf.

¹⁹ See also the chapter by Björn Fägersten and Tim Rühlig in this volume.

²⁰ Rieko Miki, „US and Japan plan ‚Belt and Road’ Alternative for Indo-Pacific,” *Nikkei Asia Review*, April 6, 2021, <https://asia.nikkei.com/Politics/International-relations/Indo-Pacific/US-and-Japan-plan-Belt-and-Road-alternative-for-Indo-Pacific>.

exclusive character of some of these initiatives.²¹ With political decisions replacing markets as the relevant investment signals, there is also a risk that national competitive advantages could erode if “me too” technology and infrastructure investments are prioritized that would otherwise not be sustained.

- **Connectivity:** Globalization runs on connectivity, but connectivity remains vulnerable to political, economic, technological, environmental, and other man-made disruptions. For most countries the COVID-19 pandemic has been a wake-up call pointing up the risk of depending on foreign sources of supply. The governments of South Korea and Japan, for example, have been very active in setting up funds to reorganize corporate supply chains away from China to reduce dependence. So far, however, these programs have been of limited use, as companies want to remain engaged in the Chinese market. In some cases, Japanese semiconductor companies even decided to step into the Chinese market, as taking risks was considered most beneficial at a time when competitors mulled withdrawing from the market.²² The downside of these and other policy initiatives aimed at supply chain reorganization is that a core business management task becomes increasingly politicized, which increases the risk of regulatory disruption.

What's New?

3 Plus 3 Forces of Change

Geoeconomics is a two-level game.²³ At the international level, actors use geoeconomic instruments to advance their interests and shape the preferences and policy leeway of allies and competitors. But the policy preferences

- 21 Excluding offers from rivaling nations might not be an explicit condition of the programs but might come with the implicit conditions or the tacit expectation that countries that engage on 5G with, let's say, Western suppliers will refrain from cooperating with China in the same area.
- 22 Kathrin Hille, „The Great Uncoupling: One Supply Chain for China, One for Everywhere Else,” *Financial Times*, October 6, 2020, <https://www.ft.com/content/40ebd786-a576-4dc2-ad38-b97f796b72a0>; Sam Kim, „South Korean Firms Reluctant to Bring Production Back From China,” *Bloomberg*, October 5, 2020, <https://www.bloomberg.com/news/articles/2020-10-05/south-korean-firms-reluctant-to-bring-production-back-from-china>; Hideaki Ryugen et. al., „Japan's Silicon Wafer Latecomers Turn to China for Expansion,” *Nikkei Asia Review*, March 16, 2021, <https://asia.nikkei.com/Business/Tech/Semiconductors/Japan-s-silicon-wafer-latecomers-turn-to-China-for-expansion>.
- 23 The two-level game theory addresses the interplay between domestic politics and international relations. See: Robert D. Putnam, „Diplomacy and Domestic Politics: The Logic of Two-Level Games,” *International Organization* 42:3 (Summer 1988), pp. 427-460, <https://www.cambridge.org/core/journals/international-organization/article/abs/diplomacy-and-domestic-politics-the-logic-of-twolevel-games/B2E11FB757C4465C4097015BD421035F>.

that underpin the respective practice do not result from the international system only; domestic preferences are important in shaping geoeconomic ambition. So far, mainly Western nations have driven the geoeconomic practice. But the rise of emerging economic powers that harbor differing views on how to shape the future international order implies that non-Western domestic political preferences are becoming more important. Analysts need to pay more attention to this dynamic, as it ignites a new geoeconomic agenda that deviates from globalized geoeconomics (Table 1).

Three major input factors drive this new agenda: peer-to-peer competition, diverging domestic political preferences, and toxic connectivity. These forces change the geoeconomic output, i.e., the way geoeconomic instruments are used. A new geoeconomic responsibility to protect goes hand in hand with resurging state interventionism. In addition, digitalization changes the character of the five geoeconomic domains and broadens the regulatory footprint. Let's start with the input factors.

	Globalized geoeconomics	New geoeconomics
International environment	■ Benign, with the US as the "hegemon of last resort"	■ Contested due to systemic competition
Key rationale/ Leitmotif	■ Free flows ■ Winner takes it all	■ Flow control ■ Self-sufficiency
Core principles	■ Market interoperability ■ Efficiency and effectiveness ■ Just in time	■ Environmental, social, governance (ESG) principles ■ Resilience ■ National security
Systems design	■ Hub and spoke system with open and diverse vectors of economic exchange	■ Self-sustaining circular ecosystems with strategically controlled access points for economic exchange
Major growth engine	■ Exports	■ Import substitution and domestic demand
Regulatory approach	■ Global reach with extra-territorial overstretch	■ Regional, club-based reach with extraterritorial push-back

Table 1: Old and New Geoeconomics in Comparison

First, the international environment becomes less benign, as the liberal international order (LIO) is faltering and peer-to-peer conflicts are resurging. Whether or not cooperation is still possible depends on actors' expectations about the "future trade and investment environment." Under positive expectations actors are likely to see benefits in continuing current practices of cooperation. But if expectations turn negative and if one actor anticipates severe economic decline, "the leaders of the dependent state will begin to view war as the rational lesser of two evils."²⁴

Even prior to the COVID-19 pandemic, most indicators signaled a gradual abatement of globalization, and ambitious peers emerged to secure their piece of the shrinking global economic pie.²⁵ These peers act ambivalently. They want to benefit from the existing order while challenging it at the same time. Peers that mimic Western geoeconomic practice exploit tensions within the LIO that run along two seams. First, a clash between democracies and authoritarian regimes is in the making. Although the current U.S. administration under President Biden²⁶ puts this notion at the core of its foreign policy, it is ambivalent, as several democracies like Brazil, Israel, India, and Turkey are on a populist-authoritarian slope. Second, the LIO and the Westphalian order overlap but are not congruent. China and the United States feel more comfortable with Westphalian values, whereas Europe is all-in on the liberal, post-national aspects of the international order.²⁷ Cracks along both seams make it much more difficult for incumbent leaders to discipline challenging peers.

This is where changing domestic political preferences kick in as the second driving force.²⁸ Diverging domestic political preferences matter, because geoeconomic endowments are different. As Blackwell and Harris argue, the ability to control outbound investments, the size of a market, its relevance for partners, and the ability to shape strategic flows influence the execution of geoeconomic power.²⁹ These endowments can be used to project domestic

24 Dale C. Copeland, *Economic Interdependence and War* (Princeton: Princeton University Press, 2015), p. 2.

25 *For Better or Worse: Has Globalization Peaked?* (New York: Citi, 2019), p. 3.

26 Joseph R. Biden, "Why America Must Lead Again. Rescuing U.S. Foreign Policy After Trump," *Foreign Affairs* 99:2 (March/April 2020), pp. 64-76.

27 David A. Lake, Lisa L. Martin, and Thomas Risse, "Challenges to the Liberal Order: Reflections on International Organization," *International Affairs* 75:2 (Spring 2021), pp. 225-257.

28 See also the chapter by Daniel S. Hamilton in this volume.

29 Blackwell/Harris, *War by Other Means*, pp. 87-92.

political preferences overseas, which explains the "Brussels Effect."³⁰ Today, however, we are witnessing a twin change of new domestic political preferences in the West and fundamentally different value sets in non-Western countries that become more important given their economic rise.

In the West, the COVID-19 pandemic, climate change, welfare losses of the middle class, and the rising specter of populism usher in market-taming policy preferences. Driven by the idea that monopolies undermine markets, infringe upon consumer and privacy rights, and endanger democracy, digital behemoths are increasingly subject to new regulatory scrutiny.³¹ Whereas environmental, social and governance (ESG) principles drive public spending and private investments and require companies to be more transparent concerning the ecological and societal impact of their activities, this push for transparency has "little utility for an authoritarian trying to consolidate control."³² Consequently, resource-intensive business models come under pressure from politicians, consumers, and investors at the very moment when, for example, Europe's dependence on non-European resource providers is growing because of ESG-driven climate and energy policies. The strategic implications of this development will be far reaching, as the West is likely to be the "junior partner in whatever collective climate solution Beijing and other emerging Asian powers can live with."³³

Whereas Western countries emphasize sustainability, non-Western countries focus more and more on self-sufficiency. But when a country like China emphasizes the role of the state over private companies, opposes individual rights, and prefers rule by law rather than rule of law,³⁴ self-sufficiency takes a different meaning. China is aware that the international environment turns non-benign and responds with the dual circulation strategy that puts stron-

30 The Brussels Effect denotes the ability of the European Union to „promulgate relations that shape the global business environment, leading to a notable ‚Europeanization‘ of many important aspects of global commerce.“ See: Anu Bradford, *The Brussels Effect. How the European Union Rules the World* (Oxford: Oxford University Press, 2020), p. xiv.

31 Lina M. Khan, „Amazon's Antitrust Paradox," *Yale Law Journal* 126:3 (January 2017), pp. 710–805, <https://www.yalelawjournal.org/note/amazons-antitrust-paradox>; Gansh Sitaraman, *The National Security Case for Breaking Up Big Tech* (New York: Knight First Amendment Institute/Columbia University, 2020), <https://knightcolumbia.org/content/the-national-security-case-for-breaking-up-big-tech>; Greg Ip, „Antitrust's New Mission: Preserving Democracy, Not Efficiency," *Wall Street Journal*, July 7, 2021, <https://www.wsj.com/articles/antitrusts-new-mission-preserving-democracy-not-efficiency-11625670424>.

32 Tom Ginsburg, „The BRI, Non-Interference, and Democracy," *Harvard International Law Journal*, 62 (Special Issue July 2017), pp. 40–65, <https://harvardilj.org/2021/07/the-bri-non-interference-and-democracy/>.

33 Adam Tooze, „How Climate Change Has Supercharged the Left," *Foreign Policy*, January 15, 2020, <https://foreignpolicy.com/2020/01/15/climate-socialism-supercharged-left-green-new-deal/>.

34 Jessica Chen Weiss and Jeremy L. Wallace, „Domestic Politics, China's Rise and the Future of the Liberal International Order," *International Organization* 75:2 (Spring 2021), pp. 635–664, here p. 640.

ger focus on the strength of the local market.³⁵ This shift primarily serves to reduce foreign dependence and to strengthen redundancy, for example by way of operating multiple transportation hubs, as a strategic asset. Other powerful non-Western nations adopt similar policies that require indigenization and localization of foreign technologies in return for market access. Localization is tied to control, for example when Saudi Arabia decides that companies need to open regional headquarters in the country to benefit from government contracts or when Russia wants digital companies to have local offices to step up regulatory scrutiny.³⁶ Interestingly, self-sufficiency also coincides with behavioral changes among ruling elites in a country like Russia. According to Vladislav Inozemtsev, new Russian oligarchs prefer to groom their fortunes at home rather than abroad, thereby containing the risk of becoming an international sanctions target.³⁷

Given the fact that Western and non-Western nations operate at different stages in the economic life cycle, diverging domestic political preferences might be nothing but normal. However, if Western preferences gradually emphasize resource-intensive de-industrialization while losing access to and control over the resources needed to shape industrial transformation towards a new eco-friendly, service-driven digital knowledge economy, strategic vulnerabilities will increase. At the same time Western nations also risk losing the ability to shape strategic flows such as energy and commodities, while resource-rich producers and resource-intensive consumers grow closer thereby further tilting the power asymmetry between Western and non-Western nations to the benefit of the latter.

Finally, both trends explain why connectivity is becoming increasingly toxic. Once considered a key feature in a system that binds all actors together, dependence now turns into a liability. Supply interruptions during the COVID-19 pandemic have influenced perceptions, as did also the rhetoric and practice of former U.S. President Trump, who argued that allies and competitors used

35 Stephen Olson, „China's Dual Circulation Strategy Signals a New Era," *South China Morning Post*, June 25, 2021, <https://www.scmp.com/comment/opinion/article/3138451/how-chinas-dual-circulation-strategy-heralds-new-era-global-trade>.

36 „Saudi Arabia Says Foreign Companies Must Have Regional HQs in Kingdom to Access Government Contracts," *Arab News*, February 16, 2021, <https://www.arabnews.com/node/1809861/business-economy>; „Putin Signs Law Forcing Foreign Social Media Giants to Open Russian Offices," *Reuters*, July 1, 2021, <https://www.reuters.com/technology/putin-signs-law-forcing-foreign-it-firms-open-offices-russia-2021-07-01/>.

37 Vladislav Inozemtsev, „Keine Sanktionen gegen alte Oligarchen," *Internationale Politik* 76:4 (July/August 2021), pp. 96–101, here pp. 99–100.

globalization to damage the U.S. economy.³⁸ Both narratives shift attitudes vis-à-vis international technology development, for example. In the past, nations and companies competed with technologies but today they compete for access to and ownership of technologies. This subtle change matters because technologies underpin corporate supply chains. It also illustrates the fact that nations and companies increasingly exploit specific features of a networked and globalized economy for unilateral benefit, sometimes also to "achieve coercive outcomes."³⁹ This coincides with the broader trend towards flow control, understood as "the will and the capability of an actor to define the framework and the operational conditions for strategic flows."⁴⁰ Therefore, flows – and everything that is needed to keep them running – take center stage with the new geoeconomic agenda.

These developments change the geoeconomic practice in three distinctive ways. First, acknowledging that dependence creates vulnerabilities triggers the geoeconomic responsibility to protect (R2P).⁴¹ The geoeconomic R2P agenda emphasizes resilience, national security, and supply chain responsibility. All three concepts are reasonable but ambivalent.

Resilience and national security are fundamentally important concepts, but their relative vagueness is the biggest problem. Following the COVID-19 pandemic, reference to public health and national security of supply have been used to justify market interventions. In this case, interventions focused on pharmaceutical and medical industries, among others, but it could easily be extended to agriculture, energy, clean technologies, or any other industry in the future. But definitional fuzziness that creates discretionary leeway for opportunistic interventions⁴² undermines the relevance of resilience and national security as economic policy guidelines.

38 Jeremy Diamond, „Trump Slams Globalization, Promises to Upend Economic Status Quo,” CNN, June 28, 2016, <https://edition.cnn.com/2016/06/28/politics/donald-trump-speech-pennsylvania-economy/index.html>.

39 Henry Farrell and Abraham L. Newman, „Weaponized Interdependence and Networked Coercion,” in Daniel W. Drezner, Henry Farrell, and Abraham L. Newman (eds.) *The Uses and Abuses of Weaponized Interdependence* (Washington, DC: Brookings, 2021), pp. 305–323, here p. 308.

40 Borchert, *Flow Control Rewrites Globalization*, p. 10

41 The R2P concept emerged in the context of the United Nations and denotes a „political commitment to end the worst forms of violence and persecution.” See: <https://www.un.org/en/genocideprevention/about-responsibility-to-protect.shtml>.

42 One of the best examples is the initial intention of the former Trump administration to levy tariffs on automobile imports from Europe because of national security concerns. See: Rachel F. Fefer et. al., „Section 232 Auto Investigation,” CRS IN FOCUS (Washington, DC: Congressional Research Service, 2021), <https://fas.org/sgp/crs/misc/IF10971.pdf>.

Supply chain responsibility faces a similar problem. ESG emphasizes the need for advanced supply chain responsibility and leads to all kinds of mandatory due diligence obligations.⁴³ The problem is two-fold. First, governments expect companies to solve political problems, such as guaranteeing minority rights, and use corporate supply chains to project their own value sets onto other nations. This puts companies in a most uncomfortable position. In addition, believing that due diligence obligations will make supply chains more transparent grossly neglects the fact that supply chains turn dark beyond immediate contractual relationships. Without incentives that advance transparency to verify if companies behave properly, darkness prevails, but this issue is not on the political agenda.

Second, the geoeconomic R2P agenda coincides with the return of government interventionism. There is a growing belief that negative distributional effects of globalization erode the social fabric in Western nations.⁴⁴ Thus, governments step in to correct globalization-induced market failure. In addition, Western governments recognize China as a systemic competitor that requires extra strong interventions to counterbalance its moves.⁴⁵ Under this agenda, interventions will cut deeper and last longer, thereby shifting the focus from broad macro-level regulation to detailed micro-level regulation aimed at redesigning corporate supply chains, deciding what products will be cleared for exports, and designating commodities as socially acceptable or unwanted. Thus, governments increasingly take corporate decisions without bearing immediate responsibility for the respective outcomes.

Values-driven state interventions are not new, but the increasing economic power of non-Western nations reinforces the corporate dilemma caused by diverging Western and non-Western values. A company's license to operate depends on compliance with the regulatory regimes at home and abroad. Since Western nations no longer exclusively set the bar for acceptable corporate behavior, corporate regulatory and reputational risks will increase. These risks will become more pertinent, if non-Western nations combine specific values with regulatory monitoring and enforcement practices,

43 Lise Smit et. al., *Study on Due Diligence Requirements Through the Supply Chain* (Brussels: European Commission, 2020), <https://op.europa.eu/en/publication-detail/-/publication/8ba0a8fd-4c83-11ea-b8b7-01aa75ed71a1/language-en>; Ionel Zamfir, *Towards a Mandatory EU System of Due Diligence for Supply Chains* (Brussels: European Parliamentary Research Service, 2020), [https://www.europarl.europa.eu/think-tank/en/document.html?reference=EPRS_BRI\(2020\)659299](https://www.europarl.europa.eu/think-tank/en/document.html?reference=EPRS_BRI(2020)659299).

44 Matthew C. Klein and Michael Pettis, *Trade Wars Are Class Wars. How Rising Inequality Distorts the Global Economy and Threatens International Peace* (New Haven/London: Yale University Press, 2020).

45 Ilias Alami and Adam D. Dixon, „The Strange Geographies of the „New“ State Capitalism,” *Political Geography* 82 (June 2020), <https://doi.org/10.1016/j.polgeo.2020.102237>.

for example digital surveillance in combination with social credit systems, that Western nations frown upon. Consequently, governments will need to pay more attention to the normative coping capacities of companies. Furthermore, diverging normative baselines raise the question as to which values will ultimately drive a company's Corporate Social Responsibility (CSR) practice. As a consequence, cultural diplomacy designed to embed a company in different normative spaces could become a new instrument of corporate soft power.

Finally, both developments occur in tandem with the changing nature of the five geoeconomic domains due to digitalization. Digitalization permeates all geoeconomic domains and weaves them together. Government-driven digital regulation thus reverberates across all domains and shapes the business model of digital companies and their clients. In the regulatory shadow of a benign international environment, digital business models reached global dominance by leveraging the central role of unifying digital platforms. Today, this approach turns into a digital trap. China's data protection regulations, for example, are becoming increasingly hawkish, which affects companies operating in China and extends to Chinese companies listed overseas. This highlights how the political will to control technology champions, national security concerns over data sovereignty, and worries about tougher U.S. audit requirements that conflict with Chinese law in combination with the drive for self-sufficiency projects geoeconomic interests into financial markets, thereby also affecting global investment firms that "bought into fast-growing Chinese startups expecting to cash out after the companies list on global exchanges."⁴⁶

Corporate Geoeconomics

Looking at the developments discussed above with the help of Michael Porter's five forces of competition highlights the scope of change.⁴⁷ First, competitive rivalry will intensify due to the rise of state-owned enterpris-

46 Keith Zai and Jing Yang, „China Targets Firms Listed Overseas After Launching Didi Probe,” *Wall Street Journal*, July 6, 2021, <https://www.wsj.com/articles/china-to-revise-rules-and-strengthen-supervision-of-overseas-listings-11625572533>; Elizabeth Chen, „Rapidly Implementing a Chinese Data Security Regime,” *China Brief* 21:14 (July 16, 2021), pp. 1-5, <https://jamestown.org/program/rapidly-implementing-a-chinese-data-security-regime/>.

47 Michael Porter, „How Competitive Forces Shape Strategy,” *Harvard Business Review* (March 1979), <https://hbr.org/1979/03/how-competitive-forces-shape-strategy>. This paragraph is based on: Borchert, *Flow Control Rewrites Globalization*, pp. 26-29.

es that follow political goals. Their risk-related coping capacity outstrips commercial and stock-listed competitors, which gives them greater leeway. Second, the threat of substituting existing products and services is increasing, as ambitious emerging nations strive for import substitution to grow local industries and pave the ground for future exports. Third, policies tailored to groom local champions can lower market entry barriers at home, as these programs effectively lock out more sophisticated international competitors. In addition, the lack of specific business models in emerging countries might enable local companies to combine products and services in ways unfamiliar to Western nations, which in turn increases their attractiveness once they serve overseas markets. For example, Alibaba and We Chat started as online platforms and social networks and quickly entered financial and delivery services also because of the lack of local competitors in these segments. Fourth, governments can use identity politics and shore up nationalism as a geoeconomic instrument to influence other nations via their suppliers. This happened to the South Korean retail store Lotte Mart in China when Seoul decided to procure U.S. air defense systems.⁴⁸ Finally, emerging nations engaging in geoeconomics will also strengthen the bargaining power of their suppliers vis-à-vis incumbent competitors. Localization programs, for example, are accompanied with demands to cooperate with preferred local partners, which gain the upper hand.

Despite the significant consequences of the new geoeconomic agenda on companies, it would be wrong to believe that business only sits at the receiving end of geoeconomic change. Rather, companies have geoeconomic agency, best understood as corporate geoeconomics. Indirect corporate geoeconomic power refers to the fact that corporate activities reinforce or run counter to geoeconomic intentions of governments. This is one of the reasons why technology proliferation is becoming so contested, as the business motive to serve clients can collide with governmental interests in preventing competitors from gaining access to certain technologies.

Direct corporate geoeconomic power refers to the fact that companies use and shape economic exchanges across different geoeconomic domains to

48 „South Korean retailers a casualty of political stand-off,” *Financial Times*, September 11, 2017, <https://www.ft.com/content/c5fb42c8-969f-11e7-a652-cde3f882dd7b>.

advance their own commercial interest.⁴⁹ Direct corporate geoeconomics comes in defensive and offensive variants.

The defensive perspective mainly addresses risk mitigation. This requires companies to take a detailed look at the impact of geoeconomics on core management functions. Identifying the respective vectors of influence is key to understanding how geoeconomic risk exposure threatens corporate business models. For example, companies need to analyze to what extent financial sanctions could impair access to capital markets. Technology export restrictions might undermine a company's ability to sell products. At the same time, technology import bans are very likely to change corporate supply chain configurations, as new suppliers are needed. These bans can also question existing research and development partnerships, as the loss of key partners can undermine a company's technological advantage. Most importantly, companies will need to investigate sanctions-related board of director risks that arise from the fact that ties to governments that are considered strategic competitors are increasingly contentious, as these links could imply government influence on corporate decision-making.

Offensive corporate geoeconomics targets economic gains for business by combining operations along the five geoeconomic domains in one business model. Logistics companies like UPS, DHL/Deutsche Post, or Agility offer air-freight, land and sea-based transportation, thus operating in three different domains. Electronic supply chain management adds cyber as the fourth dimension to their business model. Oil and gas companies mostly combine land and sea-based exploration with transportation along the same domains. Their business is especially prone to regional instabilities that can lead to supply interruptions, thus requiring them to pay special attention to geostrategic and geoeconomic developments. The same is true for mining companies like Rio Tinto, BHP Billiton, or Vale. Together these companies are the leading iron ore producers that also own substantial shares of the global iron ore shipping capacity; this gives them significant downstream power along the supply chain.

49 For a similar idea dubbed „corporate statecraft“ that looks at corporate adaptation to a changing geoeconomic landscape, see: Henrique Choer Moraes and Mikael Wigell, *The Emergence of Strategic Capitalism. Geoeconomics, Corporate Statecraft, and the Repurposing of the Global Economy* (Helsinki: FIIA, 2020), <https://www.fii.fi/en/publication/the-emergence-of-strategic-capitalism>.

As these examples refer to the “old economy,” the geoeconomic dimension might be less surprising given the physical footprint of transport-heavy business models. But the “new economy” has geoeconomic agency, too, which is growing rapidly. In this regard, Amazon might be the poster child of corporate geoeconomics in a digitized world, because it truly integrates operations across all five geoeconomic domains in a comprehensive business model.⁵⁰

- Amazon maintains a fleet of trucks for land-based transportation. In the United States alone, the company has ordered 100,000 Rivian custom electric delivery vehicles.
- Amazon Air operates 80 airplanes, and the U.S. Federal Aviation Authority has given Amazon the green light to operate logistics drones.
- Amazon China is registered to operate as an ocean freight forwarder offering sea transport for Chinese sellers.
- AWS, Amazon’s cloud-based services, not only provides the digital backbone for all of Amazon’s activities but also holds 32% of the global cloud market by serving third parties.
- The U.S. Federal Communications Commission has approved operation of the Kuiper satellite constellation including more than 3,000 satellites that will provide additional satellite-based bandwidth for Amazon’s digital business model.
- Finally, Blue Origin envisions providing rockets and spaceships for future space transportation.

Conclusion

This paper has argued that geoeconomics is a two-level game. A new international geoeconomic dynamic results from the resurgence of systemic peer-to-peer competition, whereas the disciplining effect of the existing liberal international order is waning. At the same time, Western and non-Western

50 Elijah Shama, “Amazon is purchasing 100,000 Rivian electric vans, the largest order of EV delivery vehicles ever,” CNBC, September 20, 2019, <https://www.cnbc.com/2019/09/19/amazon-is-purchasing-100000-rivian-electric-vans.html>; “Amazon leases 12 Boeing aircraft to bolster air cargo fleet,” Reuters, June 3, 2020, <https://www.reuters.com/article/us-amazon-aircraft-idUSKBN23A37D>; “Amazon Wins FAA Approval for Prime Air Drone Delivery Fleet,” UAS Weekly, September 1, 2020, <https://uasweekly.com/2020/09/01/amazon-wins-faa-approval-for-prime-air-drone-delivery-fleet/>; Shefali Kapadia, “Amazon Ramps Up Ocean Shipping Services,” Supply Chain Dive, January 22, 2019, <https://www.supplychaindive.com/news/amazon-shipping-freight-forwarding-first-mile/546548/>; Felix Richter, “Amazon leads \$150bn Cloud Market,” statista, July 5, 2021, <https://www.statista.com/chart/18819/worldwide-market-share-of-leading-cloud-infrastructure-service-providers>; Michael Koziol, “Amazon’s Project Kuiper is More than the Company’s Response to SpaceX,” IEEE Spectrum, August 17, 2020, <https://spectrum.ieee.org/tech-talk/aerospace/satellites/amazons-project-kuiper-is-more-than-the-companys-response-to-spacex>; <https://www.blueorigin.com/>.

domestic political preferences evolve in different directions, thus giving geoeconomics a new twist. As a result, connectivity increasingly turns toxic, as dependence on foreign partners comes to be seen as a major strategic concern.

This new geoeconomic environment challenges Western governments and business alike. New modes of public-private cooperation in tackling these challenges are needed, and this requires reforms along three axes. First, public-public coherence needs to be improved by identifying how foreign geoeconomic practice affects national and allied policy leeway. This requires a thorough assessment of individual and collective geoeconomic vulnerabilities and a better understanding of the courses of action strategic competitors might use to exploit them. In addition, strategic misfits among national and allied policy choices need to be identified and mitigated.

Second, public-private interaction needs to be stepped up. Overall, joint situational awareness and understanding of geoeconomic challenges and response options need to be improved. A geoeconomic dashboard consisting of a risk map and indicators illustrating dependence, vulnerabilities, and political and business opportunities could be a major step forward. This dashboard would guide public-private dialogues among ministers and leading business representatives to discuss individual and joint interests in specific overseas markets, reflect upon the strategic impact of national and international technology developments, and shine light on likely challenges that emerge from current regulatory policies in different markets.

Finally, closer private-private interaction should be seen as the first line of defense vis-à-vis overseas geoeconomic challengers. Intelligence-driven information exchange among companies operating along the same supply chain could advance mutual preparedness. In addition, companies should launch voluntary initiatives to combine liquidity with data to provide incentives to advance supply chain transparency.⁵¹

51 Carsten Jaekel and Heiko Borchert, *The European Way. How to Advance Europe's Strategic Autonomy by Pairing Liquidity with Data to Make Supply Chains More Transparent, Resilient, and Sustainable* (Cologne: Ernst & Young, 2020), https://www.ey.com/en_ch/supply-chain/the-european-way-how-to-advance-europes-strategic-autonomy.

3

Systemic Divergence and the Future Economic Order

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More than 200 years ago David Ricardo analyzed how international trade benefits all participants by exploiting their respective comparative advantages. In its purest form countries should not engage in any action that inhibits trade, or artificially distorts trade, as this would have a negative impact on their national welfare.

Economic reasoning has often served as an excuse for opening up markets but also at times for closing markets to foreigners. When Commodore Perry steamed into Edo Bay in 1853 to force Japan to open its markets to outside trade, we can safely assume that it was not the theory of comparative advantage driving either the U.S. Navy or the Japanese side in this rather one-sided confrontation. Politics and economics interact with each other in ways that are often difficult to decipher behind the smoke and mirrors of seemingly innocent altruistic interest in the general good.

Today we seem to be at an inflection point in this relationship. The extent to which Europe will be able to play a role in shaping these developments will have an impact on our collective welfare over decades. Obviously the proclaimed "end of history"⁵² did not materialize: The systemic "victory" of liberal market economies and pluralistic democracies that would produce systemic convergence economically, if not also politically, did not come about.

The reality is a more than ever a complex and discordant pattern of geopolitics. We are witnessing an erosion of hegemonic power, an increasingly multipolar world order, and economic and social orders that are anything but convergent. However, the institutions and "rules of the game" are – still – tailored to the world as we knew it some decades ago. A central question of our times will therefore be how systemic differences can be managed in a mutually beneficial manner instead of steadily ratcheting up antagonism. Economics and geopolitics are inextricably entwined.

For Europe this is a difficult issue, as it runs counter to decades of our own economic and political experience. To what extent our institutional governance can become fit for such complexities and trade-offs is an open question. On the one hand we have a common trade policy and a common set of rules and institutions for the globally largest internal market – but on the other hand divergent rules on inward investment, as well as foreign and security policies that struggle to find a common denominator. This makes

52 Francis Fukuyama, „The End of History?,” *The National Interest* 16 (Spring 1989), pp. 3-18.

Europe well suited for trade negotiations, but definitely not for geopolitically charged trade relations.

The EU's Market Integration Has Shaped Its Outlook on Trade

The genesis of the European Union (EU) also shapes its approach to global relations, especially on trade. The reasoning behind the Common Market, and later the Internal Market, was that increased integration would create economies of scale and scope. Gradually, from the 1950s onwards, internal tariff barriers were dismantled and a common external regime established. Free circulation within rested on a jointly agreed external trade regime and policy. This took away much of the national room for maneuvers on commercial policies. As tariff levels on external trade were reduced in successive General Agreement on Tariffs and Trade (GATT) Rounds and effective rates of protection declined, protectionist measures took on more subtle forms. Legendary was the requirement of the French authorities that all imported video cassette recorders (VCR) had to be processed through the (small) customs office of Poitiers.

Apart from highly protected agriculture, protectionist measures in the 1970s and 1980s largely targeted trade in manufactured products with other industrialized countries, often disguised as "voluntary" export restraints, "orderly market arrangements," or local content requirements. A sequence of events, such as the two oil price shocks and the collapse of the Bretton Woods System of exchange rates, ended the long years of industrial country growth. Mature industries went into decline, and Japan was steadily emerging as an innovative and high-volume exporter. Steel, automobiles, and semiconductors were sheltered by such arrangements and often received massive subsidies to keep them afloat.

The EU's internal disciplines developed only gradually, steadily strengthening state aid controls, public procurement rules, and other disciplines that ensured that the emerging Internal Market could function without too serious disruptions and distortions of competition.

The European experience suggests that the closer one is integrated, the more elaborate such disciplines tend to become, and ultimately there needs to be

an independent institutional governance structure that applies them, with possibilities of legal redress. This experience explains some of the struggles the EU faced in Brexit negotiations with the UK.

This history generates, among other things, three results:

- Individually, EU Member States are no longer accustomed to waging trade conflicts,
- and indeed have lost much of the technical negotiating know-how that is required,
- and have not managed to agree on a unified approach to restrictions on inward investments.

Globalization Took Off After 1990

Our globalized world rests on a number of pillars, including the multilateral institutions and rules developed over the last decades. The institutions were set up and the rules written, by and large, by the “Northern Atlantic” community, led by the United States. Europe has profited enormously from this structure. Others by and large stuck to these rules and accepted the institutions.

The systemic shifts post-1990 changed the volume and structure of global trade and economics for good, with China’s integration into the world economy being the single most important trade event of the last three decades. Emerging markets became drivers of international trade and, increasingly, major actors in the multilateral rules-based system. All major participants were or became members of the World Trade Organization (WTO) and largely kept to the rules of the system, including rulings of its dispute settlement system.

Up to the 1990s, trade rules had been designed largely by and for developed market economies. Non-market economies, importantly China and the countries belonging to the Council for Mutual Economic Assistance (COMECON), were not well connected to global trade. Developing countries were given preferential access to industrialized markets through the Generalized System of Preferences (GSP), but their overall competitive pressure on developed market economies was rather limited.

In those times of systemic competition between "West" and "East," trade was rarely weaponized, logically so, as mutual trade was limited. The United States as the clear and undisputed hegemon, both in economic and security terms, saw little need for directing genuine trade instruments at their main systemic rivals. Politics had, and used, other instruments.

An important distinction between the relative roles of trade and foreign policies of large versus small countries should be noted, as it is important as ever today. For large countries, notably for the United States, trade policy was an instrument of foreign (and security) policy rather than vice versa. Conversely, for small countries, foreign policy was more often seen as an instrument of trade policy.

Genuine restrictive trade practices tended to be directed against other market economies. The long-standing trade conflict between the United States and the EU on wide-body aircraft has its origins in that period. Boeing versus Airbus is a mixture of arguments that range from national security, to the effects of monopolistic market structures, and to the role of governments in providing subsidies to research and development.

As trade linkages increased, the effects of specialization and scale economies raised growth and incomes. Strong growth over the last decades of trade in goods and services has globally lifted hundreds of millions out of poverty. The effects on income levels and income distribution in advanced economies have been more nuanced, as the effects of trade and of technological change differ from country to country. Taken together, they appear to have by and large increased income dispersion/variance in and between advanced economies, benefitting skilled labor and keeping wages of less skilled labor low.

As the rest of the world has gained in economic strength, global dominance of the Northern Atlantic business model is in decline. This leads to the question of how much longer one set of rules will be acceptable and accepted. Institutions such as the International Monetary Fund (IMF), WTO, or World Intellectual Property Organization (WIPO) are being questioned. The last U.S. administration clearly saw its interests not being served by the WTO.

Is China a Market Economy? And What Are the Rules of the Game?

China's WTO accession in December 2001 was one of the most significant game changers in international trade and economics for many decades. It rested on the assumption – or presumption – that China was on course to becoming a market economy as understood by many of the European and other participants. This has not materialized, and differences in the role of the state in the economy have led to rising trade frictions for which even a functioning WTO would not be well suited.

The huge domestic market of China provides producers with significant economies of scale and scope, while restrictive policies regulate the access of foreign firms to the Chinese market. Technology sharing has been an important aspect for foreign firms wanting to set up production facilities there. Import restrictions are designed not only to protect domestic firms but also as foreign policy sticks, such as abruptly limiting certain Australian commodity exports.

State owned enterprises (SOEs) do not face the cost constraints of market-based competitors, meaning that SOEs can more easily engage in strategic pricing in export markets. Given the large role of the state in the Chinese economy, the scope for significant market distortions is large. Apart from subsidizing domestic producers and restrictive market access practices, the appropriation of intellectual property of foreign firms has long-term consequences for the global location of production processes, an element of decoupling in the long run.

Needless to say, there are divergent views, but it seems clear that the hope of 20 years ago, namely, that WTO accession would propel China towards a market economy, subject to the same rules as “Western” market economies, was misplaced. Different roles of the state in the economy have remained, and therefore conditions of competition clearly are not aligned with market economies. One may therefore ask how much longer a stronger China will see WTO rules, rules on intellectual property, or rules on State Owned Enterprises as being agreeable with its economic model of development.

The EU has recently put forward modernized measures to counteract the distortionary effects in the internal market of such practices.⁵³ This partially reflects a growing skepticism about the functionality of global trade rules and institutions as they are today.

Trade effects obviously stem not only from subsidized exports, or import competition but also from the ability to take over other firms. Protecting domestic firms from foreign takeovers has been a standard instrument of industrial and security policies of Western economies, even though seldom used. The United States, for example, have a long-standing instrument that can subject foreign takeover deals to a review by the Committee on Foreign Investment in the United States (CFIUS) under the heading of potential risks to national security.

Recent legislation has expanded the type of deals that may be reviewed: The CFIUS is directed to consider whether potential transactions may affect personal data and cyber security, and whether such an investment might give foreigners access to "material" non-public information. The control over overseas investments, such as joint ventures, was expanded.

What Future for Trade Relations? Tense or Worse?

The trade effects of the systemic differences between market and non-market economies have for years been grudgingly accepted, but the future holds an increasing application of defensive measures in store. This could become even more pronounced as international differences in carbon pricing lead to additional border measures.

Of the several factors leading to trade tensions each by itself may well lead to increased protectionist measures over the coming years, let alone taken together. Market and non-market economies remain bound by a common set of rules that are not fit for the realities of today, despite ever closer trade linkages among them. Global institutions have been weakened, and a number of other factors have further increased the fragility of our system.

53 Regulation of the European Parliament and of the Council on Foreign Subsidies Distorting the Internal Market, COM(2021)223 final, Brussels, May 5, 2021, https://ec.europa.eu/competition/international/overview/proposal_for_regulation.pdf.

We have witnessed widespread backlashes against globalization and trade agreements across an ever widening social and political spectrum. Trade liberalization is no longer seen as providing overall benefits. Political actors in many Western economies see global trade as undermining domestic manufacturing, living standards, social cohesion, or environmental standards.

But presumed trade effects are not the only cause for restrictions. Security and foreign policy aspects have become important drivers of trade and investment policies. Many of the trade conflicts between the United States and China (and indeed other countries as well) have their origin in national security concerns, or at least purported national security considerations. Whereas some appear to be purely protectionist, others have a genuine security-technology nexus. Over time we would expect such conflicts to, at the least, lead to diversifications in global supply chains, increasing complexity and fragility.

Technological progress has impacted on trade and trade relations in a variety of ways over the last decades. Trade between advanced nations has steadily shifted from trade in manufactures to trade in services. Provision of services is often platform-driven, markets are characterized by technology induced monopolistic competition, and first movers tend to dominate second comers and markets.

As ever the size of the domestic market is important, as first movers reap the steeply rising benefits of scale economies. Other than in traditional manufacturing, geographic and national boundaries become increasingly irrelevant for large technology-driven platforms. Scale economies are even more important, and market power becomes ever more difficult to contest by new entrants.

Trade in such services is often data driven, and incumbents have unrivalled access to personal data of worldwide clients. Trade, national security, data privacy, and technological rivalry come together to provide a platform for potential and actual conflicts between countries. Is the blocking of Huawei 5G networks truly an issue of national security? Possibly. Is it – also – an instrument of systemic competition? For sure. Is there reason to believe that either way, either China or the United States will retaliate against countries that block or do not block Huawei – in more or less subtle ways? This seems inevitable.

An important aspect of such systemic rivalries or conflicts that we are increasingly witnessing is that curbs, controls, and restraints are not confined to the direct antagonists. Up to the early 1990s, the main instrument of trade controls was to ensure that goods that had potential dual usage would not be exported. The United States and its allies had a well-developed system of such controls, and although there were certain aspects of industrial policy involved, the main intent was indeed security related.

With the end of the Cold War, such restraints and export controls were of lesser importance, with the exception of countries targeted as being exporters of terrorism. Cutting off those countries from global capital markets played an important role and was a source of tensions even among Western countries. The extraterritorial application of domestic U.S. law made sure that all firms engaged in trade relations in those countries would be heavily penalized, even if their business was legitimate under national legislation. Given the disappearance of borders in digital age trade, the use of trade and investment instruments needs to attempt to have a nearly global reach. The United States, given the role of the U.S. dollar in international finance, is uniquely placed to exercise – possibly increasingly – such extraterritorial effects of its national policies. There is little likelihood that any other currency would be able to replicate this function in the near or medium term.

Anything We Can Do?

As trade in services has become less and less unencumbered by physical borders and obstacles and a greater share of assets is intangible, there is a need for an agreement of market economies on technical regulation and digital trade. Trade flows have become even more difficult to influence, and therefore unilateral control mechanisms are becoming more and more intrusive.

As such market structures lead to presumptions of market abuse, “foreign” competition authorities reach into their traditional toolbox in trying to curb restrictive business practices of firms. However, what worked fairly well against “traditional” industries is not well suited for curbing the market power of advanced technology firms that do not require a physical or even legal presence in countries where they place their services. These issues are often closely interlinked with issues of taxation, where even a global agreement on minimum corporate taxation would be little more than a first step towards solving issues of a fair distribution of global turnover and earnings.

The role of governments in shaping markets is currently undergoing one of its generational shifts, as state interventions have started to gain credibility also among market-oriented economists and policy makers. The COVID-19 pandemic has shown that the resilience of our economies is largely dependent on the adjustment mechanisms of markets, but that governments do play an important role.

Given rising concerns in many market economies about competition and intellectual property issues in non-market economies, it is nearly inevitable that restrictions on trade and investment will continue and also increase. Such a decoupling will, however, just as inevitably lead to globally sub-optimal solutions for global problems. Agreeing on global standards, ranging from intellectual property rights to regulation of data collection to privacy arrangements, would be needed so as to prevent such decoupling.

The complexities of the issues, and their novelty, imply that trade conflicts will be conflicts in search of the appropriate instruments, and this search process may well lead to escalations among countries. The more such conflicts are part of a larger systemic rivalry, the larger the fall out will be and may ultimately even lead to a decoupling of platforms and other high-tech providers.

However, avoiding such a decoupling requires that there is an international agreement on standards, norms, taxation, and how to curb market power. Otherwise, we may even see the emergence of two standards, two sets of rules, and possibly in the long run even two sets of institutions that divide global trade and investment. That this would severely undermine global welfare effects of competition – fair competition, that is – and of trade and international investment goes without saying.

As it is, and to make things even worse, we are still lacking such convergence and agreements on regulations and other standards among market economies. Building on recent agreement on high-level principles among the G7 economies could be a first step in that direction, around which a wider set of countries could gather.

However, as long as security concerns are driving trade and investment policies, the outlook is a cause for concern. To the extent that such systemic differences can be politically harnessed so as to morph towards systemic co-existence, divergence of regulations, governance, and institutions could be held in check and possibly even overcome.

Will Climate Change, ESG, and Sustainability-Driven Supply Chain Transparency Initiatives Reinforce Current Protectionist Practices?

The COVID-19 pandemic has presumably accelerated certain changes that otherwise would have come to the fore later, possibly slightly differently. In the international debate a number of these issues have been discussed under the heading of "economic resilience." Immediate causes have been such issues as:

- supply shortages due to surges in demand and limited or no domestic production capacities
- supply shortages due to pandemic-induced disruptions of shipping capacities, or border closures
- natural sourcing constraints, e.g., for rare earths
- market structures, such as for semiconductors

This has engendered a debate on reshoring parts of supply chains, but so far the evidence on the ground is not conclusive. Although there will certainly be some such effects, firms will continue to locate production with a view to cost advantages and proximity to important markets, such as China. India is at present trying to portray itself as the location of choice for diversifying supply chains. However, given its protectionist and sometimes arbitrary interventionist trade and other policies, India is unlikely to have a significant impact on global supply chain configurations.

Increasingly, environmental policies will have a trade component and impact. As carbon pricing discussions pick up globally, it is unlikely that there will be an agreement on minimum carbon pricing any time soon. Absent that carbon border adjustment mechanisms would presumably need to be introduced by the European Union. Although a satisfactory and non-distortive instrument in theory, this will be difficult to put into practice and may well lead to significant trade disputes and retaliatory measures. If introduced, it will be of the essence to come to a global understanding, at least among the major market economies. Defensive measures may well in turn lead to escalating retaliatory measures.

Conclusions

Trade, as any other form of cross-border activity, needs to rely on a credible set of rules, administered by a credible institutional setup. To what extent the WTO was fit for this purpose at the turn of the new millennium is open for discussion, and with the actions of the previous U.S. Administration change became inevitable. In what direction this will lead the global trade system is open.

To conclude our line of reasoning: There are a number of reasons why trade disputes are on the rise and will most likely become more numerous and heated. The nature of trade instruments that are being used has, just as inevitably, evolved rapidly over recent years.

First, the global shift of power politics has been a main driver. In the Cold War, the systemic competition between East and West had a fairly limited economic component compared to today. Importantly, the export of security-related technological components ("dual use") was heavily restricted and controlled. Today, both trade and security are important aspects of international tensions.

Second, global integration by trade has changed tremendously: As long as trade was not substantially liberalized and barriers were comparatively high, countries saw little need for additional discretionary protectionist measures. With increasing liberalization of trade, at least among developed market economies, sectoral protectionist measures were increasingly adopted in view of emerging competition, so as to shield established incumbents against lower cost entrants in manufacturing industries. As globalization from the 1990s onwards then increased global trade linkages, restructuring challenges of sectors especially in mature market economies went up. A rise in trade measures was inevitable.

Third, we have moved away from the post-1990 period, when the world appeared to move towards a more cooperative and collaborative system of international politics. Thirty years later, this is only a memory, and the world has moved from a nearly unipolar to a multipolar systemic setting. Instead of systemic convergence, we are witnessing rapidly progressing systemic divergence. As the players in this system are nevertheless closely tied to each other in a comparatively liberalized global trading system, it is inevitable that trade becomes weaponized.

Fourth, digitalization has changed the nature of trade, competition, and international rules: Technological change has shifted the structure of advanced and middle-income economies towards technology-based service sectors. As discussed above, those sectors gravitate towards monopolistic market structures; government support can be decisive in establishing global champions; and purely national regulation is helpless in trying to stem abusive market practices.

Fifth, this has led to trade, foreign investment, and national security becoming more intertwined with each other than ever: Cybersecurity concerns, access to proprietary data, and control of firms' activities have meant that security policy and trade policy are now inextricably interlinked with each other. Trade measures have therefore focused more and more on trying to deny access of competitors' firms to markets, including third country markets.

The effects are obvious: Systemic divergences will impact on our welfare one way or the other. The weaponization of trade is a result of this divergence, and there is little likelihood that the next years and decades will see any decrease in export restrictions, import barriers, investment barriers, and increasingly sophisticated border measures.

Therefore, one cannot exclude that in the medium-term, alternative institutions and sets of rules will be proposed. At that point one would need to reflect on whether it is better to have one set of imperfect global rules. Alternatively, we would see moves towards two or more sets of rules, each considered better by their proponents but incompatible with each other.

Global issues such as climate or health require global solutions. This requires the trust that empowers global institutions to find mutually acceptable policies and disciplines. How to increase trust in times of rising trade and security tensions? This requires politicians that rise above their own backyard – on all sides.

4

Austria's Open Strategic Autonomy

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The Gains and Pains of Austria's Embeddedness in Global Markets

Open Markets Matter

Austria is a clear winner of European integration and an increasingly interconnected global economy. As a small economy in the heart of Europe, Austria did exceptionally well through open markets for goods, services, capital, and people. The fall of the Iron Curtain, Austria's accession to the EU, and the introduction of the euro were all major drivers of Austrian welfare.

A study commissioned by the Ministry for Digital and Economic Affairs estimates that as a result of Austria's EU membership,⁵⁴ Austrian trade with other EU members increased by 46% and thus significantly more than for our peers like Finland with 13% and Sweden with 6%. And this strong trade impulse is also reflected in other key economic indicators: Austria's real gross domestic product is almost 16% and total employment 13% higher than if Austria had not joined the EU in 1995, and inflation is 2.4% lower than it would have been without EU membership.

Austria has not only benefited from being a member of the EU internal market but also from being part of the EU's Common Trade Policy. The network of more than 40 EU trade and investment agreements with some 78 partners improves Austrian companies' access to inputs they need and increases their competitiveness in important markets outside the EU. EU trade agreements have thus led to noteworthy positive net welfare effects – not only for Austrian businesses but also for employees and consumers: According to the 2020 Globalisierungsreport by the Bertelsmann Stiftung, between 1990 and 2018 the average Austrian benefited from Austria's integration into European and global markets to the amount of €870 per year.⁵⁵

Increased foreign direct investment (FDI) flows also played a major role in this success story: After accounting for only 3% of the Austrian GDP in the year

54 Harald Oberhofer and Gerhard Streicher, *Die Handelseffekte der österreichischen EU-Mitgliedschaft 25 Jahre nach der Volksabstimmung* (Wien: WIFO Österreichisches Institut für Wirtschaftsforschung, 2019), https://fiw.ac.at/fileadmin/Documents/Publikationen/Studien_2018/Handelseffekte_25JahreEU_final.pdf.

55 See: Andreas Sachs et. al., *Globalisierungsreport 2020 – Wer profitiert am stärksten von der Globalisierung?* (Gütersloh: Bertelsmann Stiftung, 2020).

1990, the stock of investments by Austrian companies abroad now amounts to more than 50% of GDP, making Austria one of the biggest investors in many countries in Central, Eastern, and Southeastern Europe. Austrian foreign affiliates employ more than 900,000 people. Likewise, Austrian subsidiaries owned by foreign investors secure around 7% of total employment in Austria.

The open trading and investment environment allowed Austria's 62,700 exporters to develop highly differentiated trade relations through which they sell their high-quality products to more than 200 countries worldwide. Through their focus, innovative strength, and customer orientation, more than 180 Austrian "hidden champions" have become world leaders in their specialized markets. Many of them are medium-sized family businesses; more than half come from the mechanical engineering, metalworking, and electronics industries. On average, they sell more than 85% of their production abroad. Their success depends on open and secure global markets and functioning institutions and rules ensuring this openness.

The Flip Side of Openness: Increased International Interdependencies

2020 was a reminder that these advantages of open markets cannot be taken for granted and that they come at a price. The COVID-19 pandemic required unprecedented measures to protect human lives. Worldwide restrictions on the internal and external movement of people and goods caused the biggest economic downturn since the end of World War II. And with demand and supply of goods and services swinging in an unprecedented manner and at times not matching each other, many achievements of economic integration came under pressure or were put on hold temporarily.

In March 2020, the EU shut its external borders to curb the spread of the SARS-CoV-2 virus. Sudden supply shortages of facemasks, protective gear, respirators, and other medical equipment caused governments to struggle to secure the functioning of public health systems. Within the EU, new old borders emerged when France and Germany banned the export of personal protective equipment. Even confiscating medical products while in transit was no longer taboo. It took a while until the internal market was restored and solutions for the joint procurement of crucial items such as ventilators and vaccines were put in place.

The EU was of course not alone in resorting to trade policy in order to protect public health and national economies during the pandemic. Global Trade Alert counted 3,488 trade policy measures in 2020, up 66% from the preceding year. Of those, 2,712, or 78%, affecting some 14% of world trade, were trade-restrictive and only 776, or 22%, were trade-liberalizing. And, contrary to the EU-internal measures, many of the crisis-related trade policy interventions still remain in place.

The COVID-19 pandemic also reminded us of the strength of international interdependencies: About 90% of active pharmaceutical ingredients needed for the production of generic medicines in the EU are sourced from only two countries, India and China.⁵⁶ And such dependencies are not limited to pharmaceuticals: A recent paper by the Jacques Delors Institute comes to the conclusion that while the EU as a whole is less at risk than individual member states, it is nevertheless highly dependent on imports of 137 goods, and particularly vulnerable for 34 of them including rare earths, many of which are dominated by Chinese producers.⁵⁷ This fits with the results of a study by the Vienna Institute for International Economic Studies commissioned by the Austrian Ministry for Digital and Economic Affairs that estimates that more than one third of Austria's imports can be considered as vulnerable to global economic shocks and that identifies significant dependencies, especially for high-tech and medical goods, on producers in China and Southeast Asia.⁵⁸

The Necessity to Balance Openness and Preparedness

Embeddedness in global markets thus comes with gains and pains. Whereas in normal times the benefits of comparative advantages and the efficient allocation of resources overwhelmingly outperform protectionist approaches, trade disruptions and high dependencies on single sources for strategically important goods can cause significant harm.

⁵⁶ DG Health and Food Safety, „Dependency of the EU Pharmaceutical Industry on Active Pharmaceutical Ingredients and Chemical Raw Materials imported from Third Countries,” PHARM 795, Brussels, March 12, 2020, https://ec.europa.eu/health/sites/default/files/files/committee/ev_20200312_795_en.pdf.

⁵⁷ Elvire Fabry and Giovanni Butelli, *Reducing the EU's Strategic Dependence* (Paris: Jacques Delors Institute, 2021), <https://institutdelors.eu/en/publications/reduire-les-dependances-strategiques-de-lue/>.

⁵⁸ Oliver Reiter and Robert Stehrer, *Learning from Tumultuous Times. An Analysis of Vulnerable Sectors in International Trade in the Context of the Corona Health Crisis* (Vienna: wiiw The Vienna Institute for International Economic Studies, 2021), https://fiw.ac.at/fileadmin/Documents/Publikationen/Studien_2021/FIW_RR_04_2021_Learning_from_Tumultuous_Times.pdf

Being economically open thus requires being systematically prepared for the associated risks. Risk preparedness starts with identifying risks and understanding that there is no one-size-fits-all solution: Handling acute demand shocks or supply shortages requires different approaches than securing the long-term supply of strategically important goods and key technologies.

Resilience Comes with Openness

When it came to fighting the COVID-19 pandemic, cross-border trade has been at least as much part of the solution than of the problem. The first phase of the pandemic was characterized by global shortages in health-related products, in particular personal protective equipment (PPE). Even China, the biggest producer of PPE, at first struggled to meet the unforeseen spike in domestic demand and turned to an importer in the first quarter of 2020. Fortunately, by April, when the health crisis fully hit Western countries,⁵⁹ Chinese PPE exports had mostly resumed, although at higher prices, and during the rest of 2020 they rose further, assisted by liberalizing measures, such as customs waivers in many importing countries, until their volume reached more than twice the pre-pandemic levels.

Openness Requires Foresight and Diversification

It is seldom wise to put all your eggs in one basket. Over the past decades, global value chains have significantly increased the efficiency of global production and distribution networks. But through these networks, asymmetric shocks in one area can lead to supply shortages or production disruptions in others that were not hit in the first place.

One way to ensure the supply of strategically important goods even in times of large-scale disruptions is to diversify supply chains in order to reduce dependencies on single suppliers. The automaker Toyota can serve as an example: After the big 2011 earthquake led to a fall of its production by 78%, Toyota created a database of its direct and indirect suppliers including available alternatives and diversified its supply chain in order to be able to switch to alternative suppliers if necessary. The efforts paid off: When another big

59 Chad P. Bown, *How COVID-19 Medical Supply Shortages Led to Extraordinary Trade and Industrial Policy* (Washington, DC: Peterson Institute for International Economics, 2021), <https://www.piie.com/sites/default/files/documents/wp21-11.pdf>.

earthquake hit in 2016, Toyota recovered much faster, and although it could not avoid being hit by the 2021 semiconductor shortages, the company was affected later and less by them than many of its peers were.⁶⁰

Besides diversification, sufficient stockpiles of strategically important goods are another tool in order to reduce the risk and to mitigate the effects of short-term spikes in demand or supply. As a relic of the Cold War, some countries, including Switzerland and Finland, mandate domestic producers and importers of medical supplies, oil, grains, agricultural tools, and raw materials to keep significant stocks.⁶¹ Having immediate access to masks placed them in a more comfortable position when confronting the early stages of the pandemic, not having to resort to extreme measures such as export bans.

Openness Depends on a Level Playing Field

Openness requires self-confidence, trust, and respect between partners. Many of the trade-related problems in the course of the COVID-19 crisis can be traced back to uncoordinated beggar-thy-neighbor policies. In the end, a rules-based level playing field is the best way to keep markets open and efficient while minimizing dependencies.

In tumultuous times, some countries tend to react unilaterally without regard to the interests of their partners. One lesson – for which we would not have needed the pandemic, although it was forcefully reiterated by it – is that contractual/treaty obligations always matter. Trust always matters!

Economies that are less market-oriented, state-owned enterprises, and investors that benefit from excessive subsidies or from protected domestic markets distort the level playing field and thereby threaten the functioning of markets not only but in particular in times of crisis. This is a concern not only for smaller economies like the Austrian but also for the EU as a whole: Being vigilant and assertive against unfair and coercive business practices, willing

60 Matt Leonard, "Toyota, Citing Lessons Learned from 2011 Earthquakes, Expects No Major Semiconductor Impact," *Supply Chain Dive*, May 14, 2021, <https://www.supplychaindive.com/news/toyota-semiconductor-shortage-earthquake-inventory-ihs-gartner-forecast-2022/600193>.

61 Christina Anderson and Henrik Pryser Libell, "Finland, 'Prepper Nation of the Nordics,' Isn't Worried About Masks," *The New York Times*, April 5, 2020, <https://www.nytimes.com/2020/04/05/world/europe/coronavirus-finland-masks.html>; Sean McLain, "Toyota Succumbs to Chip Shortage and Shuts Factories," *Wall Street Journal*, August 19, 2021, <https://www.wsj.com/articles/toyota-succumbs-to-chip-shortage-and-shuts-factories-11629372702?mod=djemalertNEWS>.

to live up to one's values and to enforce one's rights must not be confused with protectionism. On the contrary, it is a service to the proper functioning of the international division of labor from which we all benefit. The term "open strategic autonomy" in the new EU trade strategy captures this notion well.

Storms Ahead: Other Global Hazards and Challenges

In all likelihood, the next global crisis will not be another pandemic. The main lesson from the COVID-19 crisis therefore is not only to improve our defenses against future health hazards but also to prepare for other disruptive developments. According to experts, catastrophic events with the potential to negatively affect global sourcing, production, and distribution patterns are already at unprecedented levels and are likely to become still more frequent, more severe, and less predictable.⁶² Three substantial risks – the fight against climate change, geostrategic competition, and digital disruptions – to the functioning of the world economy and global value chains stand out.

The Fight Against Climate Change

As global temperatures rise, heat waves and floods will grow in frequency and severity, and chronic hazards such as droughts and rising sea levels will intensify. The knock-on effects of such events, even if they are local, increasingly threaten to disturb the global economic system. Global food systems and infrastructure services are particularly at risk. This summer, intense heat waves and wildfires hit Northern America and parts of Southern Europe, while devastating floods left a trail of destruction in heartlands of global trade like Germany and China.

In addition to the direct impact of climate change, the fight against it bears a risk to have repercussions of its own. Climate friendly measures, such as abandoning dirty technologies, putting a price on CO₂ emissions, or subsidizing clean technologies, all have the potential to cause unintended adverse effects, the most obvious being the risk of relocations of production to coun-

62 See, for example: Susan Lund et al., *Risk, Resilience, and Rebalancing in Global Value Chains* (McKinsey Global Institute, 2020), <https://www.mckinsey.com/business-functions/operations/our-insights/risk-resilience-and-rebalancing-in-global-value-chains>.

tries with less stringent environmental standards. Unilateral measures cannot only undermine economic competitiveness, but even, through the associated carbon leakage, increase rather than reduce global CO₂ emissions. As a global threat, the climate crisis calls for global approaches. If this proves elusive (as it well may), coalitions of countries that share ambitious climate targets (for which Nobel laureate William Nordhaus coined the term "Climate Club") may be the second-best solution.

Geostrategic Competition

The recent economic skirmishes between the United States and China have given us a hint of the destructive power of a full-blown trade war. After former U.S. President Trump started a spiral of escalation by imposing import tariffs on steel and aluminum in March 2018, reciprocal tariffs in both countries were raised to over 20% on average by the end of 2019. Although they have slightly decreased in the meantime, due to the 2020 U.S.-China Phase 1 trade deal and the new U.S. administration coming into office in early 2021, tensions remain high, and the risk of a re-escalation is real. Research by the Institute for World Economy in Kiel, commissioned by my ministry, showed that Austria and the EU have so far benefited from the Sino-American trade conflict.⁶³ But the situation would be different if the rivalry put the rules-based global trading system at risk. Progress at this year's WTO Ministerial Conference will therefore be important.

Digital Disruptions

With the digital space having become a crucial part of global infrastructure, attacks against it can have enormous consequences. The COVID-19 pandemic exemplified how many of our activities rely on functioning digital services. Without well-functioning digital networks, social as well as economic costs of public lockdowns would have been far greater. However, as the digital dependency increases, so do malicious cyber activities. Cyberattacks on critical infrastructure such as airports, power grids, ports, hospitals, or water facilities have become a common threat to companies, communities, and entire countries. They require a reassessment of our understanding of risks, taking

63 Gabriel Felbermayr et. al., *Perspektiven einer erfolgreichen europäischen Handelspolitik im Kontext geopolitischer Herausforderungen* (Kiel: Kiel Institut für Weltwirtschaft, 2021), <https://www.bmdw.gv.at/Services/Publikationen/Perspektiven-europaeische-Handelspolitik.html>.

into account new cyber risks as well as the need for more European digital sovereignty and the potential of digital technologies, through the availability of data and the emergence of artificial intelligence, to revolutionize risk assessment and risk management.

Three Strategic Pillars for Resilient Economic Policies

Successfully safeguarding Austria's safety and prosperity will depend on a systematic and comprehensive, all-hazards-and-threats approach to identifying, analyzing, preventing and, to the extent this is not possible, at least mitigating relevant risks.

Pillar 1: Austria as an Active Member of an Open and Strong European Union

As one of the world's major per capita exporters, Austria disproportionately benefits from the advantages of an open and rules-based world trading system and from being a member of a strong EU that meets other global players at eye level. The EU has the largest common market in the world, it is the most important trading partner of 74 countries and imports more goods from developing countries than the United States, Canada, Japan, and China together. The sheer size and attractiveness of the EU market with its 450 million consumers gives the EU significant influence in international negotiations and when it comes to setting international standards by encouraging exporters in third countries to adopt EU standards, which is called the Brussels-Effect.

Ensuring that Austrian interests are well represented in EU policies and decisions is a cornerstone of Austria's economic policy and allows us to pursue Austria's policy objectives more effectively than would be possible outside the EU. Let me just give three recent examples:

- The EU Action Plan on Critical Raw Materials, adopted in September 2020, aims to reduce Europe's dependency regarding critical raw materials for strategic technologies and sectors (including, for the first time, lithium, which is essential for the shift to e-mobility), diversify supply, improve

resource efficiency and circularity, and promote responsible sourcing. The first two of the strategic partnerships on raw materials foreseen in the Action Plan – with Canada and Ukraine – are already in place.

- The EU FDI Screening Regulation, finalized during the latest Austrian Presidency of the European Council, became fully operational in October 2020. It significantly facilitates the exchange of information and co-operation between member states necessary to monitor and control investment activities in sensitive technologies and critical infrastructure.
- And the opening of major procurement markets such as the United States or China is a key interest of Austrian exporters. Using the EU's €2bn public procurement market as leverage, the new EU International Procurement Instrument will create a powerful incentive for third countries that hitherto refused to grant European companies access to their domestic procurement markets.

The EU has a solid track record in upholding European interests and values in international negotiations and markets. But with the trade winds turning violent and sometimes approaching gale force, it needs to further flex its muscles and to assert its position as a champion of not only open and rules-based but also fair and sustainable trade relations. That means seeking co-operation with partners to advance the European agenda wherever possible but pursuing our interests and values autonomously where necessary. Austria welcomes the focus of the new "open strategic autonomy" EU trade strategy on reducing dependencies and ensuring a level playing field for European companies, including by addressing the discriminatory effects of extraterritorial sanctions, market-distorting subsidies, and state-owned enterprises.

Another way to reduce strategic dependencies and to boost both competitiveness and resilience is to deepen and expand the single market that allows for strong, flexible, and efficient continental and regional value chains such as the Central European Manufacturing Core including Austria, Germany, and the Visegrád countries.⁶⁴ Important Projects of Common European Interest (IPCEI) are an important instrument to improve Europe's innovative strength

64 Robert Stehrer and Roman Stöllinger, *The Central European Manufacturing Core: What Is Driving Regional Production Sharing* (Vienna: FIW Research Center International Economics, 2015), https://fiw.ac.at/fileadmin/Documents/Publikationen/Studien_2014/Studien_2014_adapted_file_names_stoellinger/02_Stoellinger_FIW_Research_Report_The_Central_European_Manufacturing_Core_What_is_Driving_Regional_Production_Sharing.pdf.

in key technological areas such as microelectronics, batteries, hydrogen, and life sciences. Austria, in cooperation with other member states, is also calling for modernization of EU state aid and competition regimes including the revision of the Block Exemption Regulation in order to facilitate cross-border cooperation between European companies and strengthening them vis-à-vis overseas competitors.

Pillar 2: Using the Full Potential of Autonomous National Policies

The European dimension is a necessary but not sufficient condition for increasing the resilience of the Austrian economy and preparing it for inevitable future shocks. It needs to be complemented by informed national policies, be they complementary to and using the margins of maneuver of EU regulations or stand-alone measures in areas outside EU competence.

Based on the lessons learned from COVID-19 crisis management, the Federal Ministry for Digital and Economic Affairs has developed a comprehensive national strategy for economic crisis preparedness (Wirtschaftliche Krisenvorsorge). The aim is to be able to deal with any kind of crisis impact in a systematic and targeted manner and using a holistic, all-hazards approach. The strategy is structured around three levels – crisis management: securing supply of the Austrian population with critical goods and services during a crisis; continuity management: maintaining production capabilities during and in the aftermath of a crisis; and resiliency management: improving the preparedness of Austrian companies and the Austrian economy for future crises.

Last year, jointly with the state of Tyrol and Novartis, we succeeded in securing a comprehensive expansion plan for the Novartis Sandoz division in Kundl, Tyrol. With an investment of €50m over the coming years, we are making a decisive contribution to keeping the Novartis antibiotics production in Tyrol. Moreover, Novartis plans to manufacture important components for the COVID-19 vaccine candidate CureVac at its Kundl site. Securing the production of such strategically important products will help us to reduce dependencies on pharmaceuticals imports. It also creates regional value-added and secures valuable jobs.

Pillar 3: A Strategic Public-Private Dialogue

Any initiative to increase the competitiveness and resilience of the Austrian economy would be incomplete without an inclusive public-private dialogue in order to ensure meaningful private sector and stakeholder engagement. Although recent developments, e.g., the computer chip shortage that seemingly caught much of the automotive sector unprepared, have exposed weaknesses, companies remain the real experts when it comes to managing supply chain risks. Regulatory efforts to strengthen private sector risk management practices in the public interest need to involve private sector know-how. On the other hand, what makes sense for an individual company or sector need not be the best solution for society as a whole, and it is important to raise awareness of the need for measures in the public interest, such as mandatory strategic stockpiling. To find the right balance, business representatives are an essential part of the Task Force Wirtschaftliche Krisenvorsorge. The implementation of the forthcoming EU Supply Chain Due Diligence Directive is another topic that calls for intensive discussions with the private sector and with civil society.

Increasing Resilience: The Task of Our Times

Resilience – the ability to cope with unpredictable adverse events and to emerge from a crisis intact or, ideally, stronger – has become the core competence of our times. This is true not only for companies and institutions but also for economies and societies (as well as – on the other side of the scale – individuals).

Increasing the resilience of the Austrian economy is one of the priorities of post-COVID Austrian economic policy. It is a challenging task requiring a holistic approach and the concerted efforts of the public and private sector in order to find the right balance between as much preparedness, self-reliance, and autonomy as necessary and as much openness, European integration, and international cooperation as possible. To be successful, technological innovation will have to play a major role, as will also foresight and early decisive action, because the best way to cope with the effects of a crisis – and in particular a big global challenge like climate change – will always be to prevent it from happening.



5

A tous azimuts? Russia's Balancing Act Between Resource Power, Economic Transformation, and Global Systemic Competition

Dmitri Trenin

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Russia prepares for a new and different era in international affairs. On July 2, 2021 President Vladimir Putin signed into law the new National Security Strategy (NSS).⁶⁵ This is no routine update of the 2015 paper. Rather, the new version of NSS appears to be a manifesto for a period of global upheaval characterized by climate change, energy transition, inadequacy of national and global institutions, social tensions, major-power rivalries, pandemics, and a massive technological revolution.

The document outlines Russia's strategic thinking on an international future characterized by intense long-term confrontation with the United States and its allies.⁶⁶ Preparing for confrontation with the West and mitigating its likely consequences while focusing on self-empowerment and expanding ties to non-Western partners shapes Russia's overall policy preferences and thus also its geoeconomic ambition.

This paper looks at Russia's geoeconomic policy through the lens of the newest version of its NSS. The focus on geoeconomics is the strategy's most striking feature, as it affects policy choices ranging from the need to ramp up national socio-economic security, transform the national economy, and emphasize the strategic importance of issues like climate change and environmental protection.

It is too early to tell if and to what extent Russia's future foreign and economic policy will change as a result of this conceptual innovation, but recognizing the shift from Russia's traditional focus on geopolitics and its international status to new strategic priorities is important to understand – also in view of potential new areas of international cooperation.

Seeing The World Through Russian Eyes

From the Russian leadership's perspective, the general geoeconomic situation in the world is characterized by increasing fragmentation within the globalized and interconnected environment. This is the logical result of the end of unchallenged U.S. global dominance that came with the end of the Cold War and the collapse of the Soviet Union, and of the U.S. reaction to the rise of China as its main challenger. Major-power rivalry has thus resumed. The

65 Available in Russian at: <http://publication.pravo.gov.ru/Document/View/0001202107030001>.

66 For more on this, see: Dmitri Trenin, „Russia's National Security Strategy: A Manifesto for a New Era,” Carnegie Moscow Center, July 9, 2021, <https://carnegie.ru/commentary/84893>.

former U.S. Trump administration's refusal from 2017 to follow Washington's decades-old China policy of engagement and hedging was confirmed by the Biden administration that took over in 2021 and thus represents consensus within the American body politic. Even before that happened, Russia from 2014 found itself in a confrontation first with the United States and later also with the European Union.

The process of globalization, Moscow believes, has not been reversed by these developments. Interdependence remains high, connectivity is growing on the whole. However, multiple geopolitical fissures and widening divides lead to the emergence of new partial economic arrangements (e.g., China's Belt and Road Initiative) or elevation of existing sub-global or regional groupings (U.S. efforts to reconsolidate the West). Driven by political or economic motives, individual countries (such as the United States) or their associations (like the EU) introduce economic, financial, and technological restrictions. This has resulted in the technology war between the United States and China, with dozens of sanctions packages against Russia and Iran. Supply chains have suffered, some becoming broken; investment flows are drying up in some channels. In this context, global institutions, such as the World Trade Organization (WTO), are losing their role: by blocking appointment of judges, the United States is seeking to prevent WTO decisions that would go against U.S. economic and business interests.

After 2014 many outside observers began to argue that, in the environment of confrontation with the United States and growing estrangement from the European Union, Russia would have to rely on China, and even become dependent on it. True, China, rather than Germany, is now Russia's number one trading partner; China also exports more machinery to Russia than does Germany. In 2018, the share of the Chinese currency in the Russian currency reserves tripled; Chinese development banks gave Russia \$16 billion in credits, e.g., for the Yamal LNG project; in 2019, China and Russia agreed to use national currencies in their bilateral trade.

This relationship, however, needs to be viewed in a broader perspective. Russia relies more on China than it used to, but this does not make Moscow overly dependent on Beijing – just like previous reliance on Germany did not turn Russia into Berlin's follower. De-dollarization of the Russian economy and foreign trade is a fact, and in 2020, for the first time since the end of the Second World War, the share of the U.S. dollar in Russia's foreign trade fell below 50%. However, this, and the adjustment of the share of various

currencies in the Russian reserves, mainly benefited the euro rather than the yuan. Indeed, over 80% of Russo-Chinese trade is handled in euro. The use of the national currencies between China and Russia has made some headway, but on a modest level: from 2% of the yuan and 1% of the ruble in 2013 to 6.3% of the yuan and 5.7% of the ruble in 2020. Chinese investments in Russia remain puny compared to those of the Europeans.

Although welcoming the diversification of the global finances, Russia did not express much practical interest in using the new international financial institutions set up by China, such as the Asia Infrastructure Investment Bank (AIIB). Russia took some time to study Beijing's Belt and Road Initiative and eventually pronounced it useful in terms of creating transport corridors across Russia. Rather than joining BRI, Moscow decided to work with Beijing to "harmonize" it with the Russia-led Eurasian Economic Union. In Central Asia, Russia and China have tacitly agreed to divide their spheres of principal interest in geoeconomics and regional security; in the Arctic, Russia is jealous of non-littoral countries, including China, claiming rights in the Polar region.

Yet, the universal Western-centered order has not been replaced by global fragmentation or the emergence of opposing blocs led by America and China, along the model of the Cold War. Rather, the universality of the immediate post-Cold War set-up underpinned by U.S./Western hegemony has been superseded by a hybrid condition. Surviving elements of universality which still form the bulk of the system co-exist with an increasing number of restrictions: sanctions, countersanctions, and the like. Governments around the world are also taking measures to bolster national security in the field of economics and finance, trade and investment, technology and innovation. Universal rules survive by and large, but their field of application is shrinking: In an increasing number of cases it is the rules of national jurisdictions that take precedence.

The State is reasserting itself, and globalism has had to cede some ground to nationalism. Russia, too, is determined to control foreign investment in strategically important sectors of Russia's economy (NSS, para. 67). By imposing protectionist measures, however, the Russian leadership does not embrace autarky and leave the field. Competition over rules, particularly between the West on the one hand, and China and Russia, on the other, is becoming more pronounced.

Politicization of economic relations is not limited only to the United States' own relations with China. The Biden administration is working to build a global coalition of democratic countries to thwart China's economic and technological challenge. America's allies – the European Union, Japan, Canada, Australia, other nations – all have close economic links with China and are reluctant to sever them, but all are getting more circumspect to China's penetration of their economies. India, a major economy, is also limiting its exposure to Chinese trade and technology as a result of the downturn in the bilateral relations following the 2020 border clashes in the Himalayas. This has implications for Russia, which is China's main partner.

As the global balance is changing with the continuing rise of China and the projected long-term emergence of India as a major global player, so do regional orders. More centers of power and influence emerge in various parts of the world, so the international order promises to be more complex than the original multipolar vision of the 1990s. Turkey in the Middle East, Indonesia in South-East Asia, Brazil in South America, Nigeria and South Africa on the Black Continent, and Saudi Arabia and the United Arab Emirates in the Middle East are impacting on their regions.⁶⁷

From Moscow's perspective, this trend is a positive development, as it reflects the growing importance of non-Western actors, of which Russia sees itself as one. In its quest to integrate into the Western-dominated global economic system without making political concessions, China has made huge gains. As a result, the United States has been put on the defensive. For the first time, it is facing an adversary that is likely to overtake it soon in nominal GDP terms and may also win a technological competition. However, the notion of the Western economic model of economic development being in crisis, which is contained in the strategy (NSS, para. 7), is largely an exaggeration.

Changing political and economic fortunes of various countries and the decisions taken by their political authorities massively influence global labor, technology, and energy markets. All are important for Russia, particularly the latter. Russia continues to be still heavily dependent on oil and gas exports. Europe's policy of decarbonization and China's decisions going in the same direction, plus similar trends in Japan and the United States represent likely the most serious challenge to the Russian economy since the break-up of

⁶⁷ See also the chapter by Theodore Karasik in this volume.

the Soviet Union. The scale and significance of the challenge have not been lost on the Kremlin.

There is probably more recognition in the Kremlin now than in the past two decades of the urgency of economic, industrial, technological, scientific, and educational development to bolster Russia's international competitiveness (NSS, para. 22). Even more broadly, domestic, particularly socioeconomic security is regarded as key to overall national security. Such a conclusion requires economic modernization and sustainable development (NSS, paras. 3, 5). Without such development there can be no solid guarantee of Russia's sovereign statehood as its capability to carry out an independent foreign and domestic policy and withstand external pressure (NSS, para. 1).

Russia is not an isolated case here. China, previously heavily dependent on exports, has come up with a dual circulation economy, emphasizing the importance of the domestic market.⁶⁸ The United States leadership, from Barack Obama to Donald Trump to Joe Biden, has been – albeit in different ways – highlighting the importance of strengthening the U.S. home base. The challenges facing Russia along this road are different from those facing Chinese and the United States, and evidently much more difficult. Yet, there is no better alternative.

This contrasts with the two previous decades, when Moscow placed emphasis squarely on winning back recognition of the country's great power status and on rebuilding its military might. Having largely achieved its objectives, the Kremlin, at least rhetorically, is turning its attention to Russia's glaring deficiencies in non-military spheres. However, closing that gap even partially is going to be a difficult task.

Much of Russia's foreign trade is with the European Union countries, which are not only U.S. strategic allies but also have been imposing sanctions of their own on Russia. Since the Ukraine crisis of 2014, Russia-EU trade has halved. Technology transfers and investment have been hit particularly hard. The main message of U.S. sanctions to third parties has been: If you want to do business with or in Russia, you might cross the path of the United States. This has worked as a deterrence even in the countries that formally stay outside the Russia sanctions regime, like China. Many Chinese banks that have interests in the U.S. market refused to give loans to Russian companies even

⁶⁸ See also the chapter by Alicia García-Herrero in this volume.

without checking whether they have been put on U.S. sanctions lists: Simply being Russian often qualified for immediate refusal.

The Russian economy was not torn apart by Western sanctions. Indeed, it has proven to be remarkably resilient. Russia has engaged in import substitution, reached out to alternative sources of trade and investment, but above all has had to focus on its own resources and talents and better ways of using them. Crucially, since the 1990s, Russia has become self-sufficient in many food products; since the mid-2010s, it has been able to compensate for the loss of the Ukrainian suppliers to the defense industry, and in 2020 it was able to come up with a domestic vaccine against COVID-19, Sputnik V. With a comparatively low sovereign debt, Russia has been financially solid since the mid-2000s.

Yet, the task at hand is no less than restructuring the entire economy on a new technological level. This means reducing critical dependence in a number of areas (NSS, para. 67), from pharmaceuticals to electronics. The National Security Strategy stipulates the need to increase research and development funding to the level of the leading nations – an area where Russia has been severely lagging since the demise of the Soviet Union (NSS, para. 75). Russian officials have long been talking about the need to return funds of Russian origin that have been parked abroad, in off-shore tax havens. Little has been done in that regard, though: Switching to Russian jurisdiction still does not look attractive or safe enough for many business entities. And “nationalization of the elites” has remained a slogan. Indeed, the challenge that Russia is facing now is huge.

Russia’s Strategic Leeway

To meet the challenge, the Russian leadership banks on several of the country’s competitive advantages. Russia has vast territory that stretches from China, Japan, and Korea in the east all the way to the European Union in the west. Its vast land territory physically links Russia to many important economic centers. Besides the powerhouses China and the EU, on which Russia borders on land, it also connects to the United States and Canada, across the Arctic, and to Turkey and the Middle East, across the Black and Caspian seas. Russia is rich in diverse natural resources, including, apart from the minerals, Siberian forestland, and has immense reservoirs of sweet water; it still boasts a relatively high level of education of its citizens and can still

display impressive scientific and technological capabilities. A special source of pride for the Kremlin is the country's macroeconomic and political stability (NSS, para. 61). In the view of the authorities, Russia's potential strong points include aerospace and shipbuilding capabilities, engine construction, nuclear energy, and information technology (NSS, para. 67).

Currently Russia is a major world exporter of oil and natural gas, metals and fertilizers, grain and other agricultural items, nuclear energy technology, arms and weapons systems – not a very long list. Moreover, the relevant markets are all undergoing changes as a result of de-carbonization programs, tough competition from other countries, or Western sanctions against Russia. In order to sustain itself financially through exports proceeds, Russia needs to do more than diversify its foreign trade flows from their historical European orientation to China and the rest of Asia and stimulate integration within the Eurasian Economic Union (EaEU) with neighboring post-Soviet countries Belarus, Kazakhstan, Kyrgyzstan, and Armenia. As to the Kremlin's vision of a Greater Eurasian Partnership to connect the EaEU to China's Belt and Road Initiative, ASEAN and the EU, this is, at the moment, little more than a dream.

To stay in the position of a major energy power, Russia would have to transform its entire energy policy and the energy sector. After initial doubts, there is at last understanding of the need to start doing this (NSS, para. 62). The issue of climate change has recently moved to the center of Russian policy discussions, with the Kremlin accepting the need for active adaptation to the drastically changing conditions. There is also understanding that natural gas will not save the day for the current energy posture, nor will the Siberian forests that absorb CO₂. Hydrogen energy may be one way to develop, but closer engagement with other players appears both unavoidable and potentially useful. Over the past decade, Russia has learned to work closely with the Saudis and other principal OPEC members to craft agreements supporting the oil price at acceptable levels. The challenge now is to learn climate diplomacy and use it effectively to protect the national interest. Most recently, Moscow's opening of climate dialogue with the European Union and the United States has looked both serious and promising.

The labor market presents challenges and offers some opportunities. Since the breakup of the Soviet Union, large numbers of qualified workers have left Russia for the United States, Europe, Israel, and other countries. Bringing them back in not an option except in a few cases. The thrust of the effort needs to be placed on stemming the continuing brain drain by creating at-

tractive conditions for bright scientists, engineers, IT specialists, and others. At the other end of the spectrum, to deal with the deficit of labor resources writ large, Russia needs to find ways and means to successfully attract and integrate large masses of immigrants from Central Asia and other countries of the former USSR.

In the world of advanced technology, Moscow hopes for a spillover effect from the arms manufacturing industry, which it has been able to revive after the near-total collapse of the 1990s. There is much skepticism in the West as to how realistic this approach can be. Previous experience does not make one optimistic about the knowledge and know-how transfer from the defense industry to the civilian sector. Yet, the Kremlin believes that state corporations such as Rostec, which have both defense and civilian components, would be more flexible and transparent within their corporate boundaries than the Soviet-era ministries were.

President Vladimir Putin's 2018 annual address to the Russian Parliament, which featured hypersonic weapons, was held up as a symbol of post-Soviet technological revival. The hope is that leading state corporations, private IT companies like Yandex and Mail.ru, hybrid conglomerates like Sber, various public-private partnerships and government-supported scientific centers, including at research universities, can produce a breakthrough and return Russia to the ranks of leading technological countries, where the Soviet Union belonged in the second half of the 20th century.

As for the role of the state in the national economy, it is likely to remain dominant. The experience with the private sector has proven to Russian leaders that without firm guidance from the state, the "oligarchs" seldom follow the national interest and are prone to taking their profits made in Russia out of the country, mostly to the jurisdictions that have become risky in the new era of Russian-Western confrontation. The trade-off may not be ideal, but at least it is based on some logic.

Russia's Geoeconomic Priority Regions

Russia's National Security Strategy lists Moscow's priorities in the following order: its integration partners within the Eurasian Economic Union, above all Belarus and Kazakhstan; its key strategic partners in Asia: China and India; other countries of Asia, Africa, and Latin America; all other countries. This is

clearly a political ordering. In reality, Russia's economic relations are greatly at odds with its political relations.

Actually, the most important trading and investment partner for Russia remains the European Union, led by Germany and The Netherlands. True, the share of Europe in Russia's foreign trade, which stood at just above 50% in the early 2010s, is now just under 40%. China is the biggest partner as a country, and its share of Russia's commerce in the same period has increased from just above 10% to just under 20%, but it trails well behind Europe. As for the EaEU partners' share, it hovers at around 5%.⁶⁹ Trade with the other main strategic partner, India, has stagnated at a low level. On the other hand, the turnover with the United States, though small, is about half the size of the German trade, and the Ukraine connection, although severely damaged by the ongoing conflict, is still not completely severed.

Russia recognizes economic and technological realities. Despite the fact that Russia's failed attempt at integration with the West was followed by intensifying confrontation with it, Moscow still values highly its economic ties with Europe and the broader West. Part of Russia's recent trade diversification has been an involuntary result of the U.S. and EU sanctions on Moscow. For similar reasons, Russia has also had to alter the structure of its foreign exchange reserves: The share of the U.S. dollar has gone way down, and the share of the Chinese yuan has gone up. Yet, as Putin explained at the Russia Calling! Investment Forum, "we are not seeking to walk away from the dollar – rather, the dollar is walking away from us."⁷⁰ Actually, to support this argument, the share of the euro has been increased, as well as of the Swiss franc.⁷¹

Russia has welcomed the rise of non-Western actors not only for geopolitical reasons and in the name of multipolarity. In the recent decade Moscow has expanded economic links not only with China but also with Turkey, the Gulf States, and some others. However, despite the objective of building diversified links with all important economic centers in the world (NSS, 65), Russia remains economically absent from much of Asia, Africa, and Latin America.

⁶⁹ Based on the Russia's Federal Customs Service statistics: <https://customs.gov.ru/statistic/vneshn-torg>.

⁷⁰ "Russia Calling! Investment Forum," President of Russia, November 28, 2018, <http://en.kremlin.ru/events/president/news/59216>.

⁷¹ See for instance: Vadim Visloguzov, "TSB menyayet valyutu. Regulyator prodolzhayet pereklyadyvat'sya iz dollara v yevro i yuani" [Central Bank Changes Currency. The Regulator Continues to Shift from Dollar to Euro and Yuan], *Kommersant*, October 2, 2019, <https://www.kommersant.ru/doc/4111141>.

The COVID-19 pandemic came as a severe challenge to the Russian government, as it did to others. Russia managed to roll out several vaccines, one of which, Sputnik V, it sought to promote internationally. Although this promotion succeeded in a number of countries, it stalled in much of the developed world, where the Russian vaccine, alongside its Chinese equivalent, has failed to be registered. To the Russians, who describe their vaccine as a scientific breakthrough comparable to the first earth satellite – hence the name – this came as a disappointment. Moreover, Russian gestures of medical aid to Western countries, such as Italy and even the United States, were dismissed in the West as propaganda and influence operations. Rather than leading to international cooperation in health care, the COVID pandemic has exacerbated growing tensions between Russia and the West.

Russia's Long-Term Geoeconomic Coping Capacity: Will Climate Change Tilt the Balance?

As noted above, Russia has been able to withstand over seven years of sanctions pressure. True, the sanctions imposed so far have not been as severe as those imposed on Iran. Still, Russia has become the biggest economy subjected to economic restrictions since the end of the Second World War. Resilience in the face of those restrictions has been the other salient feature of the Russian economy, along its inability to generate sustained growth. Under conditions of confrontation, the Kremlin is introducing strategic planning system into Russia's macro-economic policy with a risk-orientated approach. Anticipating even harsher confrontation, Russia is building strategic reserves for mobilizational needs (NSS, para. 67).

In the opinion of President Putin, this pressure is not solely about geopolitics, aiming at changing Russia's international behavior – which it has failed to achieve – but equally if not more important, it is a way to compete unfairly. Cases as far apart as the Nord Stream II and Sputnik V vaccine are treated in Moscow as incidents of such unfair competition. Russian companies' access to investment and technology is thus being restricted.

In the view of Russian leaders, sanctions also have a different objective. According to the national Security Strategy, "unfriendly states" – above all, the United States – seek to use socioeconomic issues to undermine the Russian

political regime and destabilize the country. (NSS, para. 20). So far, however, this danger has not materialized.

The growing salience of climate issues in the policies of Western countries is fraught with another kind of danger: measures – such as the carbon tax – that would impede Russian energy exports to the EU market (NSS, para. 16).⁷² In response, Moscow vows to counter attempts by foreign states to regulate sectors, such as energy, that are key to Russia's exports (NSS, para. 67). Having “rediscovered” the Arctic for economic and infrastructure development, including for navigation along the Northern Sea Route linking Western Europe to East Asia, Moscow is now worried lest these plans are impeded by Western powers (NSS, para. 16).

Overall, the Kremlin's attitude toward climate change has undergone a sea change in the last few years. De facto denial of human activity as the origin of the change was first followed by positive expectations of global warming for the country, much of whose territory is situated in cold northern regions. Finally, by the turn of the 2020s the Russian leadership accepted the idea of major and comprehensive changes, many of them negative (such as the melting of permafrost that supports infrastructure in Russia's Arctic zone), wrought by human industrial activity (NSS, para. 77).

In terms of the impact of the Paris Accord on its economy, Russia sits in the middle between advanced and less developed countries. It is a major global emitter: 4th in overall volume, and 6th if its vast forests are taken into account.⁷³ The Soviet Union used to be the world's number 2 emitter. Since then, Russia has halved its emissions, from 3.109 billion tons of CO₂ equivalent in 1990 to 1.629 billion tons in 2020. There is no risk of Russia not living up to its national commitments by 2030. It will play a significant role in the future as a major global exporter of hydrocarbons, and decarbonization will have a major impact on Russia.

Not being a rich country, Russia is in no hurry to dramatically cut its emissions. Russia is yet to recognize the need to cut emissions now to reduce future damage. The expectation that global warming will turn out to be a net positive for Russia—such as by expanding agricultural activity toward

⁷² See also the chapter by Kirsten Westphal in this volume.

⁷³ “Historical GHG Emissions,” *ClimateWatch*, undated, https://www.climatewatchdata.org/ghg-emissions?end_year=2018&start_year=1990; Ilya Arzumanov, “Reshayushchiy gradus: ekopolitika” [Decisive Degree: Eco-policy], *Kommersant Ekologiya*, June 27, 2012, <https://www.kommersant.ru/doc/1966726>

the country's north and making the Northern Sea Route commercially navigable—still lingers, despite the very clear risks to the infrastructure that rests on permafrost, which covers almost two thirds of Russia's territory. Moscow is prepared to be criticized but is unlikely to change its attitude as a result. It also needs to be recognized that Russian emissions are part of a process of producing goods that are then imported by low-emitting Western European countries. Thus, international efforts are needed to properly deal with the problem.

One should not expect Russia to be a financial donor in this regard, however. Moscow has declared its readiness to transfer a modest amount of money into the climate fund established within the framework of the Paris Accord, with the purpose of using that money for projects in Central Asia. From the Russian perspective, it would be fair if Western Europe were to fund projects in Russia that are aimed at lowering emissions while producing goods—such as metals, petrochemicals, and fertilizers—that are intended for the EU market.

To reconcile growth with solving ecological issues, Russia must completely transform its economy: not just oil and gas production but also metals, fertilizers, the pulp and paper industry, and so on. The complete transformation of a national economy is a mammoth task and a hyper-expensive enterprise. Moreover, someone still has to engage in "dirty" production for the benefit of the global economy.

On carbon pricing, the view in Moscow is that there should be different mechanisms for different countries. It would be a huge mistake for Russia to introduce mechanisms that operate in the EU, such as trade in quotas. Russia needs a different form of carbon pricing, for example, replacing energy taxes. Russia has enormous energy taxes that are imposed exclusively on companies' excess profits. These energy taxes can be recalibrated on the basis of how "dirty" relevant production is, thus stimulating cleaner energy production. Potentially Russia can greatly raise the energy efficiency of its economy; it should also stimulate replacing coal with natural gas. This is de facto another form of carbon pricing built into the energy system.

The National Security Strategy clearly recognizes that "green/low carbon energy" "is becoming the main issue on the international agenda" (NSS, para. 80). The European Union's Green Deal, particularly in conjunction with similar decarbonization plans announced in China and Japan, plus the current policies of the Biden administration in the United States, put Russia before

a serious challenge. The introduction of the transborder carbon tax to be imposed from 2023 on companies exporting goods to the EU would affect Russia. Transforming the Russian economy in the short term is impossible, so Moscow would immediately try to offset the EU tax by seeking areas where its losses would be compensated, if only partially. However, in the longer term, global trends will push Russia toward structural changes in its economy that make it less vulnerable to these trends. In the energy field, such changes would include a focus on hydrogen energy.

Russia, of course, has been a leading nuclear energy technology producer and exporter. Rosatom, the state corporation that dominates the field in Russia, proposes to expand its activities inside and outside the country, including in Asia and the Middle East. However, competition with international rivals is stiff. In the global market, Russia has been able to capitalize on several countries' – such as Germany's – withdrawal from nuclear energy, mostly by offering its natural gas as a substitute.

The Northern Sea Route: A Geoeconomic Wild Card for Russia?

Overall, the response to climate change is the centerpiece of a broader ecological issue: protection of the environment in the world's largest country. This issue is immensely important, and already visible (NSS, paras. 77-83), but it is yet to feature as a policy priority. If and to what extent this policy priority will emerge in the future will also affect Russia's policy vis-à-vis the High North.

The Arctic, where Russia is the country with the longest shoreline, is a most sensitive and fragile area, ecology-wise. Several years ago, President Putin, an enthusiast of Arctic development, called for a general clean-up of the Arctic, severely littered by the decades of Soviet-era industrial and military activity in the region. When assuming two-year presidency in the Arctic Council in May 2021, Moscow presented an ambitious agenda of international cooperation.⁷⁴

At the same time, however, Russia is bolstering its military presence in the Arctic, which is opening up to the world. Security-wise, this is a vital area

⁷⁴ „Russia's Chairmanship Priorities for the Arctic Council 2021-2023,” undated, <https://arctic-council.org/en/about/russian-chairmanship-2/>.

for Moscow, given that the Northern Fleet, based at Severomorsk on the Kola Peninsula, forms the bulk of Russia's second-strike deterrent. Russia also wants to make sure that the Northern Sea Route (NSR) along its Arctic coast stays under Moscow's control. There, Russia's legal position is similar to Canada's with regard to the North-Western Passage but is at odds with the views of the United States and China, which insist on the freedom of navigation.

As for the NSR itself, this is part of Moscow's effort to benefit from the country's geographical position between Europe and Asia. The melting of the Arctic ice is making the ocean much easier and less expensive to navigate than before. The Russian government's expectations regarding the tonnage of goods to be transported along that route may be overly optimistic, but there is certainly a potential for profitable exploitation of the waterway that substantially cuts the time of travel between the EU and East Asia. In parallel, Russia is seeking to upgrade its existing land routes, like the Trans-Siberian Railway, and is engaging with China to build railways and motorways from western China to Europe across the Russian territory.

Digital Financial Power: Desired But Difficult to Accomplish

Since 2014, Russia has been facing a threat of being cut off from the SWIFT payments system. This has pushed the Russian authorities to build a national financial, banking, and payments system. One of the first steps was creating a Mir electronic payments system to function alongside Visa and Mastercard. Another step has been seeking to use national currencies in foreign trade in lieu of the USD, to obviate the need to go through the U.S. banking system. As already noted, Russia has reduced dependence on the U.S. dollar in its foreign exchange reserves (NSS, para. 67).

Financial technologies are developing fast in Russia. From 2017 through mid-2020, the share of non-cash payments in retail trade, paid services, and public catering rose from 39 to 69%.⁷⁵ The country's Central Bank (CBR) is studying the possibility of introducing a digital ruble that would be emitted by CBR.⁷⁶

⁷⁵ Alexey Zabolkin, "Digital Ruble: Opportunities and Scenarios," *ECONS Economic Conversations*, January 21, 2021, <https://econs.online/en/articles/economics/digital-ruble-opportunities-and-scenarios/>.

⁷⁶ *A Digital Ruble. Consultation Paper* (Moscow: Bank of Russia, 2020), https://www.cbr.ru/eng/analytics/d_ok/dig_ruble/.

It has been decided to create a platform for future testing of the digital currency. At the same time, the use of cryptocurrencies for payment and saving is forbidden by law in force since January 1, 2021. However, by the same law, individual companies were allowed to issue their own tokens. The Global Palladium Fund established by Norilsk Nickel issued its first tokens already in December 2020.

The geoeconomic sense of Moscow exploring the potential of cryptocurrencies is the same as diversifying away from the U.S. dollar: reducing Russia's financial dependence on the United States in the context of long-term confrontation with it.

In Lieu of Conclusion

The above analysis leads to the conclusion that the 2021 Russian National Security Strategy's most striking feature is its focus on geoeconomic issues, from the need to completely transform the national economy on a new technological basis, to the critical role of science and technology, to the vital importance of climate and environmental protection for the future of the country. This recognition is no guarantee that the objectives set in the Kremlin paper will be met, but this testifies to the major change in the leadership's thinking, which until recently was singularly focused on geopolitics, status, and military security.

In future, Moscow's foreign economic policy will be essentially pragmatic, seeking practical economic benefits for Russia. However, U.S., EU, and other Western countries' policies toward Russia will continue to use economic restrictions in an effort (hopeless in the past and probably also in the future) to change Moscow's international behavior and, less overtly, the political situation inside the country. In the Western countries' basic approach toward Russia, geopolitics will continue to trump geoeconomics. For its part, Russia has very few instruments of economic pressure that it can use vis-à-vis the West and remains interested in maintaining existing economic ties with it.

As for Western accusations, the Russian leadership does not regard its policies vis-à-vis Ukraine, Syria, Belarus, the Arctic as disruptive but rather as defensive and based on the national interests of Russia. Russian forays, in various forms, into the field of Western domestic politics are not publicly admitted by Moscow but are likely meant as a payback for Western promotion

of democracy in Russia, which the Kremlin views as potentially destabilizing interference. Thus, although Russia is genuinely willing to restore its much-reduced economic ties with the West, it is not prepared to make one-sided political concessions to the United States and the EU in order to achieve that. Seen from the West, however, economic and financial restrictions remain an instrument of choice in the hands of U.S., EU, G7 policymakers, as they continue trying to punish Russia and make it change its course.



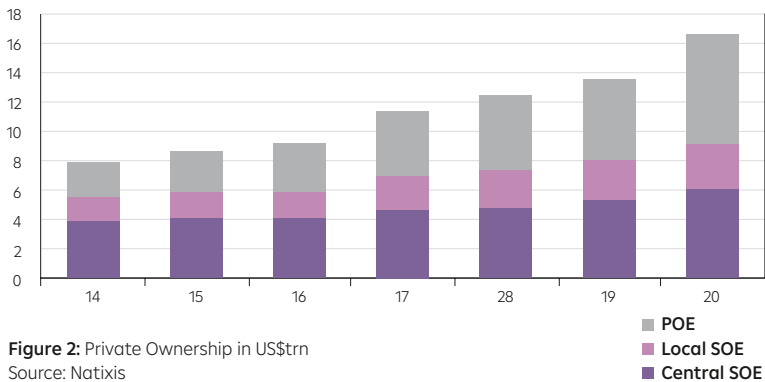
Chinese Economic Statecraft: What to Expect in the Next Five Years?

Alicia García-Herrero

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China's Achievements After 100 Years of Single Party Rule

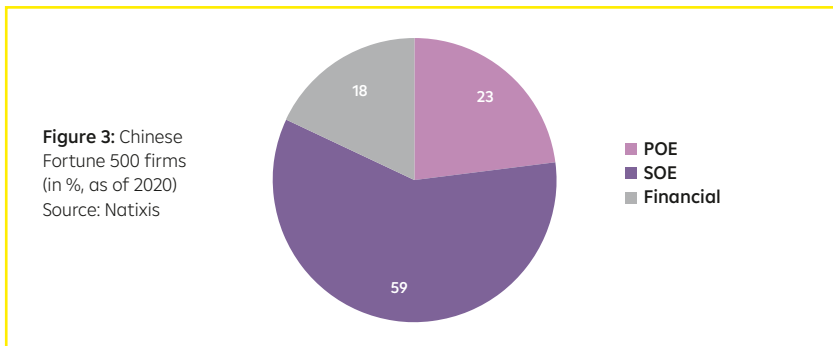
The start of economic reform under Prime Minister Zhu Rongji and President Deng Xiaoping in the late 1980s was widely seen as the turning point for the trajectory of Chinese economy. Key to the reform was the increased private ownership of the production of goods and services as well as the opening to trade and foreign direct investment.⁷⁷ The reason for the push toward private ownership is not so much ideological – China remains a socialist country – but pragmatic. Private-owned enterprises' (POEs) return on assets has remained stubbornly higher than that of state-owned enterprises (SOEs) – and not just centrally owned state enterprises but local state-owned companies, too.⁷⁸ More importantly, state-owned companies having undergone partial private privatization, and the so-called mixed ownership companies also tend to have high returns on assets. In other words, China's economic success cannot be understood without the dynamism of its private sector and its openness to the rest of the world.



77 Alicia Garcia-Herrero, "Will the Private Sector Save China's Growth Model?," *ZhongHua Mundus*, June 9, 2021, <https://mailchi.mp/648c2c1c032f/zhnghu-mundus-will-the-private-sector-save-chinas-growth-model>.

78 Alicia Garcia-Herrero and Gary Ng, *China's State-Owned Enterprises and Competitive Neutrality. Policy Contribution No. 5/21* (Brussels: Bruegel, 2021), <https://www.bruegel.org/2021/02/chinas-state-owned-enterprises-and-competitive-neutrality/>.

China's reform and opening has moved in zigzag in the last few years, however. On the one hand, private ownership has continued to increase, when measured as the share of listed assets (Figure 2), but POEs are not yet as big state-owned companies. In fact, the number of Chinese private companies in the Fortune 500 is much smaller than that of SOEs, all the more so if we consider that the largest Chinese financial institutions are all state owned (Figure 3).



In addition, the regulatory environment faced by private companies has become much more complex since the 13th Plenum in November 2013, the first under the new chairmanship of President Xi Jinping. Since that Plenum, and especially since the modification of China's Communist Party (CCP) Charter in 2017, several measures have been announced to increase the control of the state in private companies.⁷⁹

Regarding China's opening process, China has signed a number of important trade deals in the past few years, the most important one being the Regional Comprehensive Economic Partnership among ASEAN countries and Japan, South Korea, and China. On the investment front, China has finally moved to a negative list for inward foreign direct investment (FDI) at the national level, with 33 sectors remaining closed for foreign investors.⁸⁰ Furthermore, and

79 On September 15, 2021, the General Office of the Central Committee of the Chinese Communist Party (CCP) issued the *Opinion on Strengthening the United Front Work of the Private Economy in the New Era*, calling on the nation's United Front Work Departments (UFWs) to increase CCP ideological work and influence in the private sector. In the same vein, in 2020 hundreds of Chinese SOEs amended their corporate charters to codify a role for the Party in corporate governance. See: http://www.gov.cn/zhengce/2020-01/05/content_5466687.htm.

80 "2020 National Negative List," National Development and Reform Commission and Ministry of Commerce, July 23, 2020, http://www.gov.cn/gongbao/content/2020/content_5532623.htm (in Chinese).

partially as a response to the U.S. import tariffs for Chinese products, China has also embarked on an array of protectionist measures on the trade side, such as import tariffs or export controls on some key technologies where China is strong (e.g., drones and components of 5G).⁸¹ More recently, export tariffs have also been introduced on iron ore to protect its domestic use and avoid a further escalation of iron ore prices.

Against a backdrop of much slower reform and a zigzag strategy for opening up, the question is how much China can grow in the next few decades, and what the main sources of growth will be in this new stage of development.

Where Is China in Terms of Growth and Where We Should Be Heading

As mentioned in the previous section, China has successfully defied the convergence trend with still meteoric growth thanks to the adoption of reform and openness measures that lift the productivity growth rate. However, China's growth rate has been on a downward trend for the last decade in what is generally considered to be a structural trend, which will continue for decades to come. In this section, we review the forces behind China's structural deceleration but also possible ways to counter the process, especially through human capital investment and "effective" innovation.

Thanks to the positive overall population growth rate and the rural-urban population migration, the size of China's Gross Domestic Product (GDP) grew massively even before its accession to the World Trade Organization (WTO), with the GDP expanding from US\$0.3trn as of 1980 to US\$1.2trn as of 2000 (Figure 4). Since stepping into the 21st century, China has sustained its growth at a rapid pace boosted by international trade. The convergence with the United States in terms of GDP per capita has been obvious. The GDP per capita of China has increased by more than three times from less than US\$1,000 to over US\$3,000 (Figure 5). But the situation seemed less favorable after the global financial crisis, based on which one would point to a consistent slowdown of the Chinese economy. This seems not hard to understand, as it reflects a wealthier China. Although lower growth as a consequence of "eco-

81 "Revision of the Catalogue of Technologies Prohibited or Restricted from Export," Ministry of Commerce and Ministry of Science and Technology, August 28, 2020, http://www.gov.cn/zhengce/zhengceku/2020-08/29/content_5538299.htm (in Chinese).

conomic convergence" is a given phenomenon, the question is whether China's structural deceleration might be faster than one would expect because of China's fast aging but also a lower return of assets stemming from a too rapid increase in fixed asset investment.

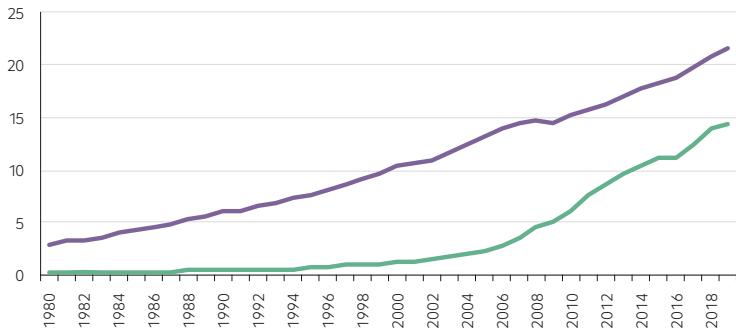


Figure 4: China's Nominal GDP (US\$trn)

Source: UNCTAD

— US
— China

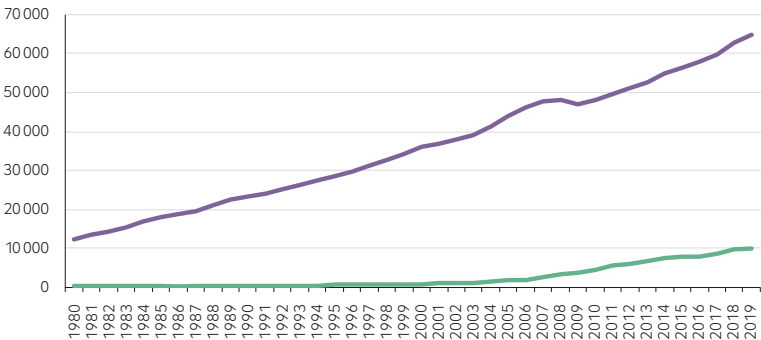


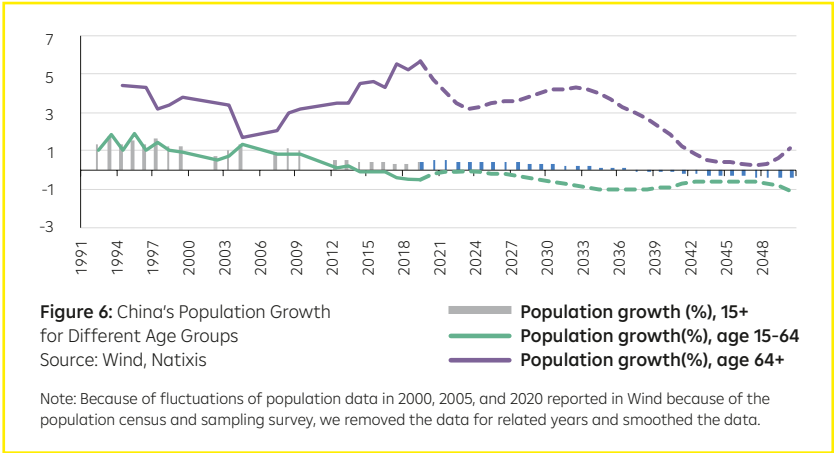
Figure 5: China's GDP per Capita (US\$)

Source: UNCTAD

— US
— China

Against the backdrop, most of the existing quantitative estimates of China's future growth point to much lower growth, especially after 2035. This is even more the case for those projections assuming limited reform, which is argu-

ably where we are today. For example, the World Bank⁸² predicts average growth below 4% from 2021 to 2030. This echoes an earlier study by Albert et al. that points to a steady deceleration to 4.5% up to 2025 and a much faster one thereafter (2.3%).⁸³ The IMF's World Economic Outlook seems more optimistic, but it only covers the next five years, and it has already incorporated the likely massive rebound in 2021 after COVID-19. Bai and Zhang are much more optimistic, with expected growth above 6% and at 8%, respectively.⁸⁴ Still, Justin Lin et al.⁸⁵ make it clear that this is more an aspiration than a baseline projection, as favorable conditions are needed to achieve it, which might have been the case at the time of their publication, when China was blessed by a very favorable external environment, which radically changed in 2018 with President Trump.



There are two key variables for China's growth potential in the future. The first is aging. China's labor force is bound to grow less over time (from 0.5% from 2011 to 2019 to 0.4% on average from 2020 to 2030 (Figure 6). Although this

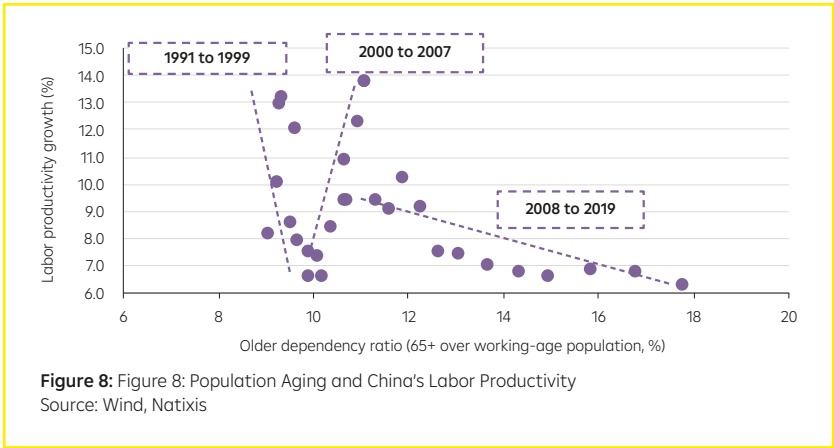
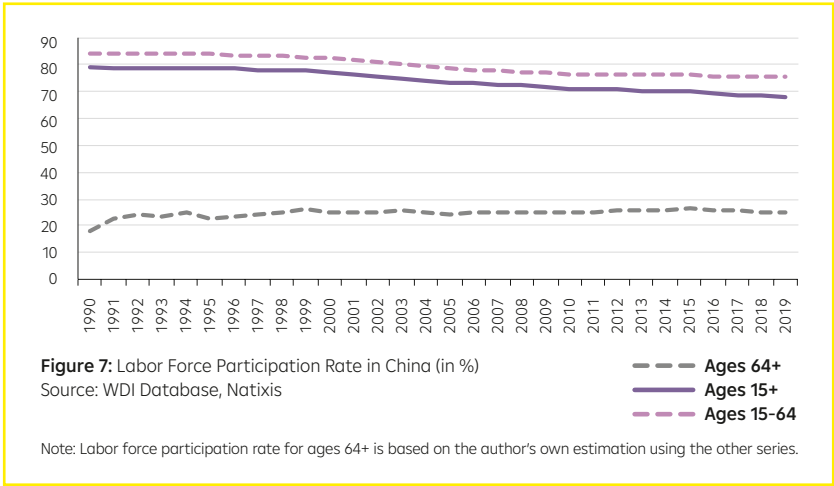
82 *Innovative China: New Drivers of Growth* (Washington, DC: World Bank, 2019), <https://openknowledge.worldbank.org/handle/10986/32351>.

83 Marie Albert, Cristina Jude, and Cyril Rebillard. *The Long Landing Scenario. Rebalancing from Overinvestment and Excessive Credit Growth. Implications for Potential Growth in China*. Banque de France Working Paper No. 572 (Paris: Banque de France, 2015), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2671760.

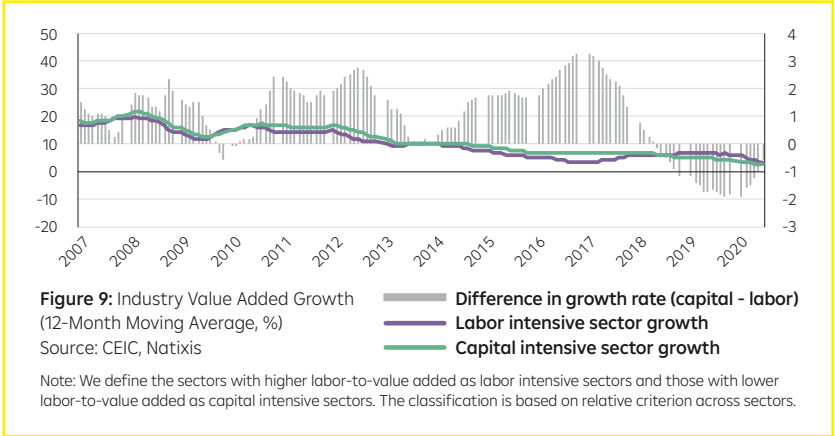
84 Chan-en Bai and Qiong Zhang, *A Research on China's Economic Growth Potential* (London: Routledge, 2020).

85 Justin Yifu Lin, Guanghua Wan, and Peter J. Morgan, "Prospects for a Re-Acceleration of Economic Growth in the PRC," *Journal of Comparative Economics* 44:4 (November 2016), pp. 842-853, <https://ideas.repec.org/a/eee/jcecon/v44y2016i4p842-853.html>.

change is tiny, China's aging implies that the overall labor participation rate will also shrink beyond what is already has. In fact, China's labor force participation rate has decreased significantly over the past decades from nearly 79.0% in 1990 to 69.4% in 2019 (Figure 7). Still, technology upgrading could enable more room for the elderly to work and push up the labor participation rate. In that regard, China is likely to raise retirement age from the current very low level compared to international standards (60 for men at 50/55 for women, depending on whether they are blue or white-collar workers).



Second, the slow-down in labor productivity is much more significant than aging when explaining the rapid deceleration of the Chinese economy. One of the key reasons for this trend might be aging, as both aging and labor productivity have decelerated in tandem in the last few years, although this was not the case in previous decades (Figure 8). There are other important factors behind the rapid slowdown in labor productivity. An important one is China's turn towards more labor-intensive sectors in the past few years, as the growth model turns to services – which require more labor at a time of relatively larger labor scarcity (Figure 9). Another potential and perhaps even complementary reason for this is whether China's push for technological upgrade through research and development (R&D) and investment in human capital can stop, or at least mitigate, the slowdown in productivity. To date, these efforts have not yet been fruitful, as neither labor productivity nor total factor productivity growth are showing signs of a lift. Beyond the counterintuitive push for labor-intensive innovation, there is a more general issue – the rather inefficient allocation of resources, which drags down total factor productivity.



Beyond the Baseline Scenario: Geopolitics Is Increasingly Important

The U.S.-China relationship has shifted dramatically since late 2017, when the Trump administration officially labelled China a strategic competitor. The Biden administration does not seem to have changed that rhetoric regarding

China. As such, geopolitical risks, especially the confrontational relationship with the United States, may also push China's medium-term perspective lower, the more the two economies bifurcate their path from the still important economic relations, whether we look at trade or investment.⁸⁶ In this section, we zoom into where we stand with the U.S. administration's efforts to contain China, especially as regards bifurcation in their trade, technology, and financial relations. We also investigate China's actions, some of which started even before the U.S.-led trade war in 2018. For trade and technology, dual circulation seems to be China's main strategy. For finance and the extraterritorial role of the dollar as reserve currency, a renewed effort to internationalize the RMB, possibly with the help of China's Central Bank Digital Currency (CBDC), seems key.

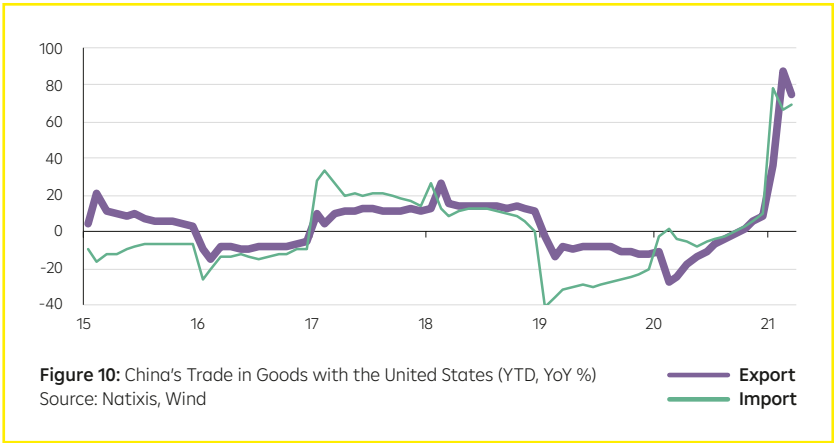
U.S.-Led Bifurcation

Since the announcement of the seemingly untargeted measures in early February 2018 for solar panels and washing machines, the United States has moved to increasingly targeted action against China, with trade flows between the two contracting massively (Figure 10). The most obvious case in point was the announcement of 25% additional import duties to be applied to US\$50bn equivalents of imported goods from China on the basis of China's infringement of intellectual property rights (García-Herrero, 2018a). The speedy introduction of the announced import tariffs by the United States, without allowing for much time to negotiate a deal between China and the United States, shows the U.S. resolve to move away from the status quo in terms of the functioning of the global trading system, at least as China is concerned.⁸⁷ China retaliated with equivalent import tariffs on U.S. goods. In that regard, even with a truce reached on the sidelines of the Buenos Aires G20 summit in late 2018, the U.S.-China trade war re-escalated soon in May 2019 with former U.S. President Trump's unexpected announcement to ramp up tariffs from 10% to 25% on products covered by the September 2018 action. In January 2020, right before the outbreak of the COVID-19 pandemic, the Phase 1 deal was finally reached as an interim agreement between China and the United States. This, together with the United States' massive need for imports

86 Alica García-Herrero and Junyun Tan, *Deglobalisation in the Context of the United States-China Decoupling*, Policy Contribution 21/2020 (Brussels: Bruegel, 2020), <https://www.bruegel.org/2020/12/deglobalisation-in-the-context-of-united-states-china-decoupling/>.

87 Alica García-Herrero, *Europe in the Midst of China-US Strategic Economic Competition: What Are the European Union's Options?* (Brussels: Bruegel, 2019), <https://www.bruegel.org/2019/04/europe-in-the-midst-of-china-us-strategic-competition-what-are-the-european-unions-options/>.

during the pandemic explains the return to massive trade flows between the two countries in 2020. It should be noted, however, that neither the Phase 1 deal nor COVID-19 have resulted in the United States eliminating its import tariffs for Chinese goods. All the more worrisome, the Biden administration has passed legislation to enhance the resilience of U.S. supply chains for key strategic sectors, including semiconductors and rare earth metals.⁸⁸ Such legislation ultimately aims at reshuffling some critical U.S. value chains away from China in the light of heightened geopolitical tensions and the risk of China retaliating. China's recent anti-sanction legislation, making retaliation against any target legally feasible, has only increased the concerns of the U.S. and other Western countries' governments but also the private sector.

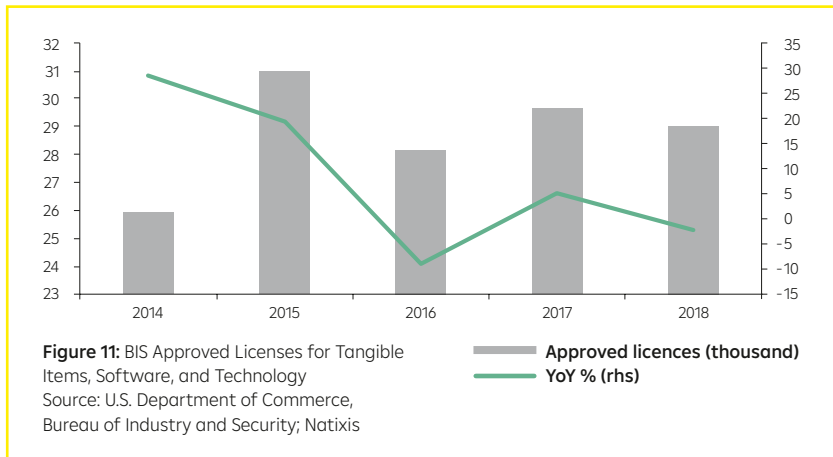


Beyond trade, the Trump administration stepped up the measures for China's containment, but they were not fully unexpected, especially as concerns the tech side. In fact, the Obama administration had already increased the scrutiny through stricter export controls, especially after China announced the adoption of Made in China 2025, its landmark industrial policy. This long-term plan made it increasingly clear that China would be aggressively pursuing rapid technological upgrade and ambitious objectives in terms of substituting key imports with domestic components. In other words, the idea of self-reliance being a desirable objective for China does not really start with

88 "Executive Order on America's Supply Chains," *The White House*, February 24, 2021, <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/02/24/executive-order-on-americas-supply-chains/>.

the dual circulation strategy but earlier, especially since Made in China 2025 was launched in 2015 as President Xi came to power.⁸⁹ Against that backdrop, the transfer of technology has become increasingly restricted by tightening exports control on high-end technology products (Figure 11). In turn, China has recently introduced export licenses for key technologies, such as drones and artificial intelligence.

One important measure taken by the Trump administration to contain China's technological rise is the expansion of the "entity list."⁹⁰ This tool effectively forbids U.S. companies to conduct business with the Chinese companies on the list. In fact, the U.S. Bureau of Industry and Security (BIS) had published such a list of entities deemed risky to U.S. national security as early as 1997. But the names on the list have expanded quickly since 2019 with the addition of Huawei as well a couple of its affiliates and more Chinese corporations. In 2020, China also announced the release its own entity list as retaliation,⁹¹ but it only offers a framework, with the names of the targeted companies not yet being made public.

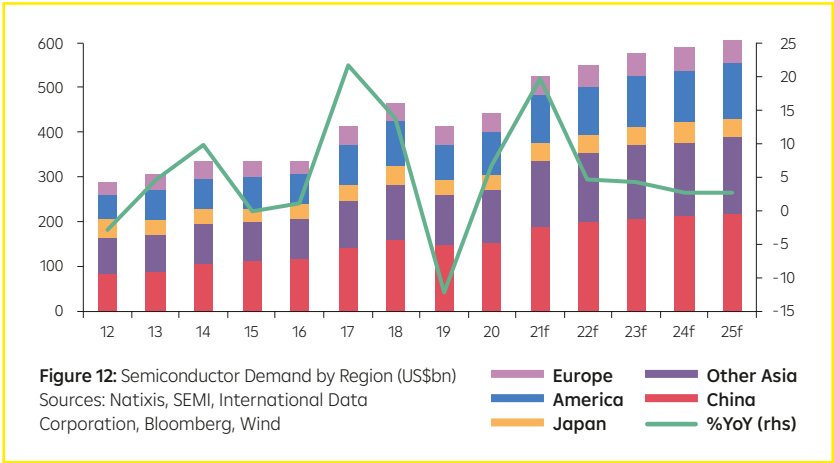


⁸⁹ Alicia García-Herrero, "US Tariffs Aim to Contain China's Technological Rise," *Bruegel*, April 10, 2018, <https://www.bruegel.org/2018/04/u-s-tariffs-aim-to-contain-chinas-technological-rise/>.

⁹⁰ "Entity List," Bureau of Industry and Security, undated, <https://www.bis.doc.gov/index.php/policy-guidance/lists-of-parties-of-concern/entity-list>.

⁹¹ "Provisions on the Unreliable Entity List," Ministry of Commerce, September 19, 2020, <http://english.mofcom.gov.cn/article/policyrelease/questions/202009/20200903002580.shtml>.

A key sector where the impact of technology bifurcation might be most serious is the semiconductor industry, which has become apparent with the ban on sourcing semiconductors to Huawei. In fact, it affects not only American producers but also Taiwanese producers, among others. Furthermore, the U.S. entity list has expanded further from Huawei to SMIC, the largest producer of semiconductors in China. Targeting semiconductors is all the more understandable as China alone has consumed 35% of the global demand, up from 29% for the same period (Figure 12), whereas it hardly produces final semiconductors and certainly not at the highest end, which is what is needed for new technologies such as electric vehicles and the like. In fact, China imports more semiconductors by value than oil.



Interestingly, the U.S. containment on Chinese technological expansion is also moving into software. Before the 2020 U.S. election, the Whitehouse published an executive order targeting Chinese owned social media platforms TikTok and WeChat. The measures have threatened penalties on U.S. residents or companies engaging in any transactions with these firms after the order is in effect. Although the Biden administration has revoked Trump's order seeking to ban TikTok and WeChat, the new order requires Chinese apps to take stricter measures to protect private information if they want to stay in the U.S. market.⁹² In other words, the Chinese apps could still

92 "Executive Order on Protecting Americans' Sensitive Data from Foreign Adversaries," The White House, June 9, 2021, <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/06/09/executive-order-on-protecting-americans-sensitive-data-from-foreign-adversaries/>.

face bans for the data practices. One should not forget that China was the first to create a great firewall to block the free flow of information back in 2009.⁹³ But as the United States follows China's lead, the Internet and thus the exchange of global information will become increasingly divided. Taking as an example China Standards 2035, the country's push to enhance its independence in standard setting, one can already envision that the creation of two major – but rather independent – ecosystems might not be as far off as some may think. This could include hardware and software and possibly other technologies.

The increasing constraints for the free flow of investment, especially as regards Chinese acquisitions of companies in key technology sectors, points in the same direction. This is particularly the case for the United States, after the granting of increased powers by Trump to the Committee on Foreign Investment in the United States (CFIUS) in 2018. The EU also set up its own investment screening process at the EU level in April 2020 to beef up the coordination among national investment screening agencies. These moves show the unease in the West about China's technological upgrade. One should also realize that, beyond the containment of technology, the lack of reciprocity as regards Western companies' still very limited access to the Chinese market, is another factor pushing for bifurcation. In fact, although China has finally approved a negative list for inward foreign direct investment, as many as 33 sectors remain on the negative list, which means that no foreign investor can gain control in such sectors. In other words, on the investment space, the lack of full openness by China and its rapid tech upgrade are additional factors pushing bifurcation.

An area where the push for decoupling looks much less obvious is portfolio investment, unless from the United States towards China as reflected in the growing presences of United States' and, more generally, foreign financial institutions in China, but also the rapid increase in portfolio flows into China. In fact, U.S. investors have flocked into China's equity and bond markets in the last few years, following a general trend by foreign investors. One key factor behind this trend has been the massive quantitative easing by the Federal Reserve and the very cheap cost of funding in the developed world. In turn, China's interest rates have remained stubbornly high, and equity performance has been very positive in the light of China's stellar recovery

93 Miguel Helft, "YouTube Blocked in China, Google Says," *The New York Times*, March 24, 2009, <https://www.nytimes.com/2009/03/25/technology/internet/25youtube.html>.

from exit compared to the rest of the world. These factors have lost steam recently, given the regulatory crackdown affecting the equity market and the increasingly lax monetary policy pushing interest rates down.

China's Response: Self-Reliance Under the Logo of "Dual Circulation"

The West's and especially the U.S. move from engagement to containment have come in tandem with a much more assertive China. In fact, China has announced retaliatory measures for close to every announcement made by the United States. However, the measures are bound to be less effective, as the trade and technology relation between the United States and China remains unbalanced in favor of the United States. At the same time, China has taken measures to accelerate its quest for self-reliance, which already existed, as the China Manufacturing 2025 plan clearly exemplifies. This quest, clearly enshrined in 14th Five Year Plan⁹⁴ through the dual circulation strategy⁹⁵ can have much longer lasting consequences both for China and the rest of the world.

The dual circulation strategy basically stands for China's quest to insulate the domestic market from the rest of the world by eliminating any bottleneck, whether natural resources or technology, for China to vertically integrate its production and achieve self-reliance served by China's huge domestic market. A relevant consequence for the world is that China will no longer need to import high-end inputs, with obvious negative consequences for major exporters of technology like Germany, Japan, South Korea, or the United States. As if this were not enough, the second aspect of dual circulation, boosting external demand, in a context of Western containment, will increase the importance of the Belt and Road Initiative (BRI) to ensure open markets in the emerging world. In essence, the dual circulation is part of China's master plan to become self-reliant in resources, technology, and also demand, through its huge market as well as that in third markets through BRI. In other words, as China become more vertically

94 *The Fourteenth Five-Year Plan for the National Economic and Social Development of the People's Republic of China and the Outline of the Long-term Goals for 2035* (Beijing: National Development and Reform Commission, 2021), <https://www.ndrc.gov.cn/xxgk/zcfb/ghwb/202103/P020210323538797779059.pdf> (in Chinese).

95 *Plan of Promoting Deep Integration and Innovative Development of Logistics and Manufacturing Industry* (Beijing: National Development and Reform Commission, 2021), <https://www.ndrc.gov.cn/xxgk/zcfb/tz/202009/P020200909333031287206.pdf> (in Chinese).

integrated, major exports of manufactured inputs will suffer. The semiconductor sector remains a bottleneck for China, however, which explains Chinese companies' buying spree during the last few years. Interestingly, in geopolitical terms, Taiwan could hold the key for China to achieve self-reliance in semiconductors, given its companies' strength (especially TSMC) in the most difficult steps of the semiconductor supply chain, namely, foundry and lithography.

Against this backdrop, it is important to note that China's growth will not only decelerate further in the future but it will also be increasingly less shared with the rest of the world, due to the dual circulation strategy. Those governments or companies expecting the manna from China in terms of exports, as happened when China announced its rebalancing towards domestic demand in 2008, may be proven wrong. In other words, whereas the old rebalancing was designed to move China away from excessive external imbalances, the dual circulation strategy aims at self-sufficiency, but with a continued push on exports as long as it is feasible. In fact, the new dual circulation is nothing more than an important substitution strategy while trying to keep foreign markets for Chinese goods.⁹⁶ This change in strategy is not a capricious move by the Chinese leadership but a hedging response to the changing nature of Beijing's relations with the United States as the leading global power.

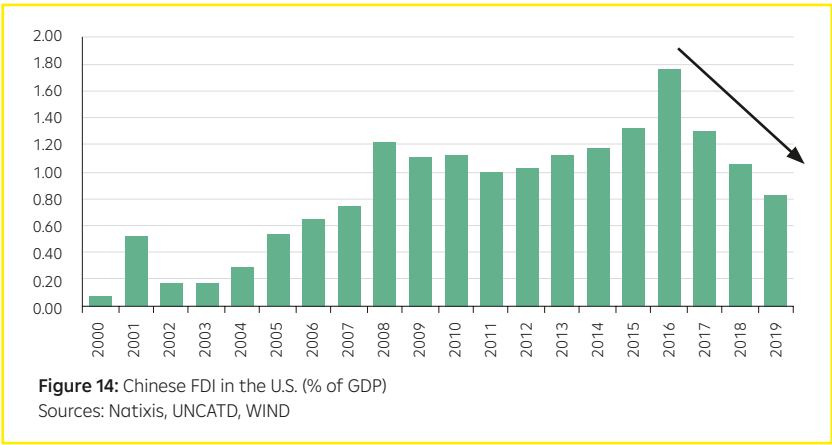
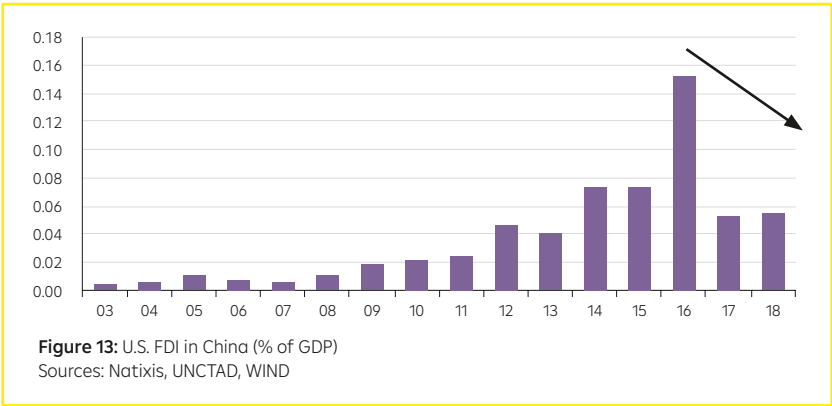
Another Important Threat Is Financial Decoupling

Beyond trade and technology, U.S. containment has also moved into finance. To start, U.S. financial sanctions on China are now in place, as the Biden administration finally passed the Trump-era list of military-related Chinese companies banned from receiving U.S.-based investment. China's response with the Anti Foreign Sanction Law (AFSL) and forcing Chinese companies to delist from the United States on the grounds of unwarranted data sharing is further pushing towards financial decoupling.

The reality is that financial linkages have been waning for years, at least as FDI flows are concerned. U.S. FDI flows into China peaked after China's entry into the WTO but have been decreasing since (Figure 13). Chinese FDI in the

⁹⁶ Alicia García-Herrero, "Why China's 'Dual Circulation' Plan is Bad News for Everyone Else," *Nikkei Asia*, September 17, 2020, <https://asia.nikkei.com/Opinion/Why-China-s-dual-circulation-plan-is-bad-news-for-everyone-else>.

United States grew until 2016 (Figure 14) and has remained low since former President Trump came to power.



Portfolio flows are a different story. Whereas China's holdings of U.S. treasuries are clearly on a downward trend, U.S. holdings of Chinese assets have increased very rapidly, notwithstanding the U.S. sanctions on some specific names (Figure 15 and Figure 16). The web of sanctions is becoming increasingly complex.⁹⁷ Some are Xinjiang or Hong Kong-related, but the most important

97 "Executive Order on Addressing the Threat from Securities Investments that Finance Certain Companies of the People's Republic of China," The White House, June 3, 2021, <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/06/03/executive-order-on-addressing-the-threat-from-securities-investments-that-finance-certain-companies-of-the-peoples-republic-of-china/>.

ones are the Pentagon list of Chinese military companies via the Office of Foreign Assets Control (OFAC), for which an investment ban for U.S. investors is in place. These are by now about 60 companies, some of which are of very relevant size, such as ChemChina or Xiaomi. China's retaliation, namely, the anti-foreign sanctions law passed in June 2021, could increase the costs for foreign firms operating in China and thus further deter investment flows.



Figure 15: China's Holding of U.S. Treasuries (US\$trn)

Source: TIC

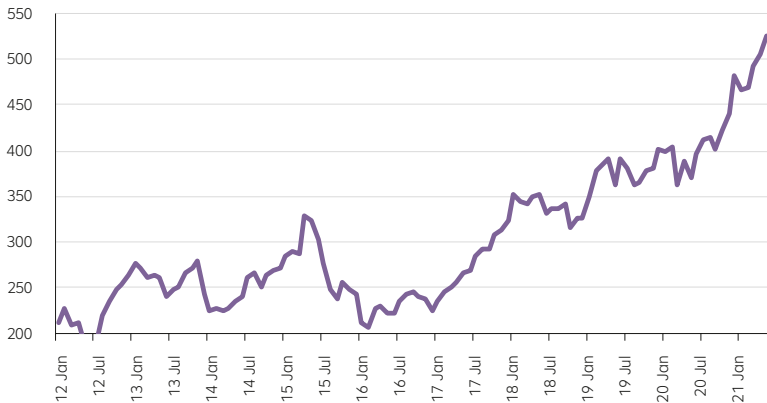
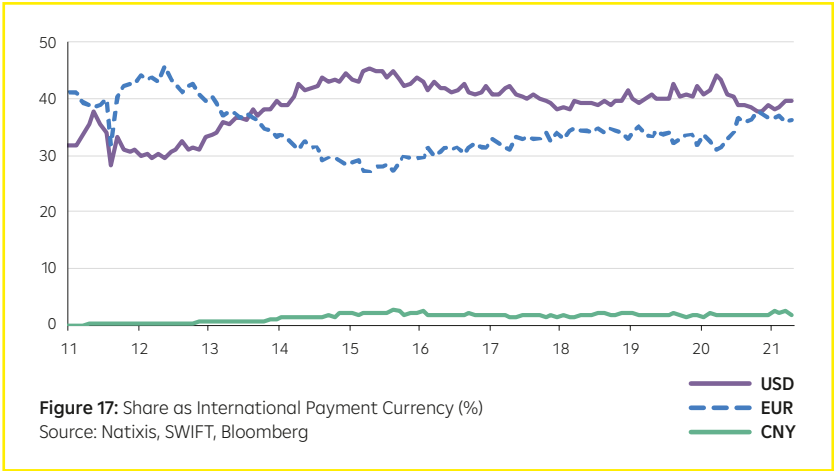


Figure 16: U.S. Holding of Chinese Long-Term Securities (US\$bn)

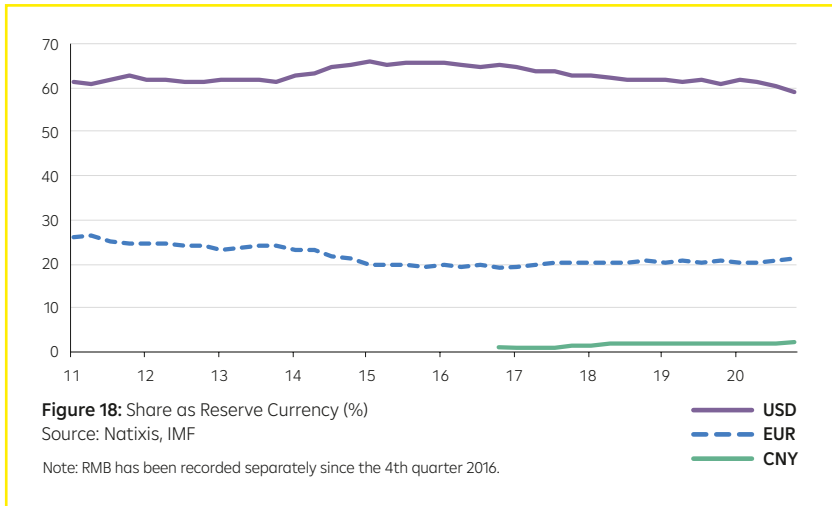
Source: TIC

Such costs may stem from additional compliance-related costs but also reputational costs if the perception exists that companies are too dependent on China.

In line with the reduction in cross-border lending, cross-border financing has become more difficult. For example, Chinese technology firms listed in the United States have opted for secondary listings to avoid the risk of delisting from the U.S. stock market. This is the case for Alibaba Group, JD.com, and NetEase Inc. At the same time, the Chinese government has meanwhile adopted policies to encourage the domestic funding of technology companies, including the launch in 2019 of the Science and Technology Innovation Board (SSE STAR Market). Based in Shanghai, the STAR Market has the objective of supporting promising technology start-ups in their equity financing, helping avoid U.S. equity markets. As if this were not enough, the Chinese government is also resorting to penalizing Chinese listings in the U.S. market, as the case of Didi shows.



Beyond the specific retaliation measures, China’s grand strategy to respond to financial bifurcation is for the RMB to eventually become an international currency. This used to be a long-term objective, but it has become more urgent as a consequence of the United States’ extraterritorial use of the U.S. dollar to target China. The fact that RMB only captures a tiny share in either global payments or reserve currency, roughly 2%, adds to the urgency (Figure 17 and Figure 18).



The first attempt by China to internationalize the RMB was centered on facilitating Hong Kong as the global hub for offshore RMB business; efforts then extended to other offshore centers, which did not work out well after the 2015 Chinese equity and currency shocks. Now China is trying again by fostering cross-border acceptance of its digital currency, profiting from a first-mover advantage.⁹⁸ This is important not only in the long run but also immediately, as it can help China bypass the use of the dollar when and if needed.

But the internationalization of a currency needs more than just technical preparations. It also requires certain conditions to be fulfilled for its global acceptance, namely, preserving its value through price stability, offering a large pool of highly liquid assets, and allowing full capital account convertibility for money to instantly flow in and out of RMB. This means that the Chinese government will need to take additional steps toward the liberalization of the capital account so as to enhance the full convertibility of the RMB.

As such, a key question is whether the digital renminbi, the E-CNY, may help Chinese authorities to square the circle, namely, to allow for more capital account openness while still being able to trace capital flows and act accordingly. This explains why E-CNY's traceability under the design of "controlled

⁹⁸ Alicia García-Herero, "Could the RMB Dislodge the Dollar As a Reserve Currency?," *BRINK News*, July 8, 2021, <https://www.brinknews.com/could-the-rmb-dislodge-the-dollar-as-a-reserve-currency/>.

anonymity" is key, as it allows China to control seemingly free financial flows. In other words, the digital currency could offer a way to promote RMB as an international currency, while still keeping control of cross-border flows. Another important objective is for China to further project soft power by using its own currency for trade and investment exchanges particularly in the areas under China's influence, which tend to coincide with the BRI geographies.

Although clearly a master plan at a time when big uncertainties exist about the U.S. ballooning debt, there are relevant technical barriers to a cross-ledger solution, and the institutional differences make it easier said than done. Data sharing of financial transactions is also an important stumbling block. Another important factor that needs to be improved is the liquidity of RMB financial assets. Although the size of the bond market has grown rapidly since the global financial crisis, it is dominated by corporates and financial institutions. More liquidity on central government paper is needed, with a longer yield curve and clearer benchmarks. But whether the E-CNY can help on this front remains an open question.

Conclusions

The meteoric rise of the Chinese economy, not just in sheer GDP size but also income per capita, has a lot to do with China's reform and opening-up, but both, especially the reform path, have slowed down. In that regard, although the Chinese economy is poised to become the largest in the world around 2028, its convergence in income per capita with the United States is set to slow down quite substantially in the next few years, led by aging but more importantly by the rapid deceleration in productivity. The latter trend does not seem to be changing course, notwithstanding Chinese massive investment in human capital and especially R&D. This is all the more the case if the current, much more hostile, external environment continues, which seems very likely.

The Biden administration has not shown any sign of wanting to change Trump's containment towards China or of going back to the good old times of engagement. In fact, the scars of the trade war remain in place, although the Phase 1 deal and the COVID-19 pandemic have further pushed up trade exchanges. Still, the Biden administration is more focused on supply chain reshuffling than import tariffs, as well as on containing China in its tech upgrade. This, added to the outright ban on key components in China's key

companies as well as Chinese software in the United States are clear signs of bifurcation. All of these things are pushing China towards self-reliance as suggested by the introduction of the dual circulation strategy, which is clearly very bad news for global exporters, as China will engage in substituting imports with domestic production while competing in third markets. Through dual circulation China might be able to achieve further vertical integration, but there is also a risk that existing bottlenecks, such as in the semiconductor industry, will further reduce China's growth potential. Regarding finance, the push for decoupling is coming from both sides. The United States is imposing sanctions on key Chinese corporates, and China is forcing its companies to delist from the United States. Furthermore, the push by the United States to profit from the extraterritorial reach of the U.S. dollar as reserve currency is putting pressure on China to internationalize the RMB faster. The silver bullet is the RMB digital currency, the E-CNY. This is obviously an experiment, and as such a risk, so the impact on China's potential growth remains uncertain.

All in all, there seems to be a big geoeconomic puzzle overshadowing China's future economic policy that relates to the CCP's current clamp-down on China's Big Tech companies and, more generally, China's – relatively more productive, and thus profitable – private sector. The impact of this crack-down is bound to reduce China's potential growth further. This will make the redistribution of income, promised under the new "common prosperity" ⁹⁹ mantra, much more difficult.

⁹⁹ „China Economists Say ‚Common Prosperity‘ Won't Rob the Rich,“ *Bloomberg*, August 25, 2021, <https://www.bloomberg.com/news/articles/2021-08-25/china-economists-say-common-prosperity-not-about-robbing-rich>; „‘Common Prosperity’ Push to Share China Wealth More Fairly,“ *South China Morning Post*, August 20, 2021, <https://www.scmp.com/comment/opinion/article/3145702/common-prosperity-push-share-china-wealth-more-fairly>.

7

With a Little Help from a Friend: A Geoeconomic Infusion for the Transatlantic Partnership

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Europe's Geoeconomic Base Is the Atlantic

Despite transatlantic political turbulence, the rise of other powers, and the COVID-19-induced recession, the United States and Europe remain each other's most important markets and political partners. The transatlantic economy is the geoeconomic base that enables thousands of U.S. and European companies to be globally competitive. It generates US\$6.2trn in total commercial sales a year and employs up to 16m workers in mutually "onshored" jobs on both sides of the Atlantic.¹⁰⁰ It is the largest and wealthiest market in the world, accounting for two-thirds of global direct foreign investment (FDI), half of total global personal consumption, and close to one-third of world GDP in terms of purchasing power. Ties are particularly thick in FDI, portfolio investment, banking claims, trade and affiliate sales in goods and services, mutual R&D investment, patent cooperation, technology flows, and sales of knowledge-intensive services.

The transatlantic region is also the fulcrum of global digital connectivity. North America and Europe generate approximately 75% of digital content for internet users worldwide. U.S. and European cities (Frankfurt, London, Amsterdam, Paris, Stockholm, Miami, Marseille, New York) represent the world's foremost hubs for international communication and data exchange.

Despite the rise of other economies, North America and Europe remain the core of the international financial and monetary system. The dollar, the euro, the pound, and the Swiss franc are determining currencies, and North America and Europe are home to 22 of the top 30 Globally Systemically Important Banks as identified by the Financial Stability Board.¹⁰¹

Transatlantic flows in research and development (R&D) are also the most intense between any two continents. In 2018 U.S. affiliates spent US\$33bn on R&D in Europe, 56% of total R&D conducted by U.S. companies outside the United States. R&D spending by European affiliates in 2018 totaled US\$45.1bn, representing 67% of all R&D performed by majority-owned foreign affiliates in the United States.

There is great confusion in Europe about the relative economic importance

¹⁰⁰ This section draws on Daniel S. Hamilton and Joseph P. Quinlan, *The Transatlantic Economy 2021* (Washington, DC: Woodrow Wilson Center, 2021), <https://www.wilsoncenter.org/book/transatlantic-economy-2021>.

¹⁰¹ 2019 List of Global Systemically Important Banks (G-SIBs), (Basel: Bank for International Settlements, 2019), <https://www.fsb.org/wp-content/uploads/P221119-1.pdf>.

of China and the United States to European prosperity. Media reports blare that China has become Europe's top trading partner. This is simply not true. In 2020, a one-off year, China narrowly had more goods trade with the European Union (EU) than did the United States. But trade is more than trade in goods. If one adds together goods trade and services trade – the fastest growing segment of global trade – the United States is by far Europe's most important commercial partner, as Europe is for the United States. And if one then adds mutual investment flows – the lifeblood of the transatlantic economy – the central geoeconomic importance of the North Atlantic for the world becomes very clear. In the first three quarters of 2020, for instance, U.S. companies invested US\$55bn in Europe, seven times more than what Chinese firms invested in Europe. And despite the pandemic-induced recession, U.S. companies in 2020 earned US\$254bn from their operations in Europe – 23 times what they earned from operations in China.

In short, despite the travails of the Trump years and media headlines about how America and Europe have fallen apart, the underlying reality is that networks of interdependence across the Atlantic have become so dense that they transcend "foreign" relations and reach deeply into our societies, affecting a wide range of domestic institutions and stakeholders. In a world of growing geostrategic contestation, greater geoeconomic competition, and deepening global connections, the transatlantic relationship remains the thickest and strongest weave in the web.

Fresh Start

U.S. President Biden and EU leaders have moved quickly to open a new chapter in transatlantic relations. They have underscored that the United States and Europe are indispensable partners of first resort. In this regard, the advent of the Biden administration is an opportunity for the United States and Europe to reinvigorate and recast their relationship as a partnership fit for a more competitive, geoeconomic age – one that is more effective at leading our societies and economies from sickness to health, enhancing our prosperity, protecting our interests, advancing our values, and working with others to forge global responses to global challenges.

Within the first six months of the Biden administration, the two parties undertook a series of initial actions to reinvigorate the relationship after four turbulent years under Donald Trump. As core partners within the G7 and at

their own U.S.-EU summit in June 2021, the two parties agreed to provide vaccines to two-thirds of the world's population by the end of 2021. They agreed to rewrite global tax rules on corporate income that could overturn a century of established tax practice. And they agreed to an ambitious climate partnership, anchored by a U.S.-EU High-Level Climate Action Group and a Transatlantic Green Technology Alliance.¹⁰²

The two parties have also made some progress on trade, investment, and technology cooperation. First, they demonstrated a commitment to remove bilateral irritants that Trump left on Biden's doorstep. They agreed to suspend for five years mutual tariffs related to the ongoing Boeing-Airbus dispute, as they seek an ultimate resolution to the matter. They also agreed to work to lift U.S. tariffs on European steel and aluminum, which the Trump administration imposed for "national security" reasons, as well as countervailing European tariffs on U.S. goods.

Second, they agreed to the EU's proposal to create a Transatlantic Trade and Technology Council to grow the bilateral trade, investment, and technology relationship; to avoid new unnecessary technical barriers to trade; to facilitate regulatory cooperation; and to cooperate on compatible and international standards development.¹⁰³ Working groups have been launched on climate and green tech cooperation, strengthening critical supply chains and cybersecurity, and on technology standards cooperation, including on artificial intelligence (AI), the Internet of Things, and other emerging technologies. A functioning council of this type could form the core of a more effective geoeconomic partnership between the United States and the EU.

These initial actions promise a fresh start. A renewed sense of common purpose is likely to start quickly – although not necessarily easily – in the foreign policy realm. The two parties will want to ensure that U.S.-EU-UK relations remain strong and sturdy. They share a common interest in a more capable Europe, including in defense and security. They are likely to look for ways to harness their capabilities to counter instabilities in many world regions generated by domestic conflicts, revisionist actors, or malign external influences. The EU and the Biden administration want to control Iran's nuclear ambitions, strengthen democracy around the world, fight corruption, authoritarianism, and human rights abuses, support workers' rights, enhance coordination in

102 „U.S.-EU Summit Statement,” *White House Press Release*, June 15, 2021, para. 10-11, <https://www.whitehouse.gov/briefing-room/statements-releases/2021/06/15/u-s-eu-summit-statement/>.

103 „U.S.-EU Summit Statement,” para. 17-19.

the use of sanctions in pursuit of shared objectives, and strengthen the multi-lateral system. There are greater prospects for enhanced U.S.-EU cooperation in the Western Balkans, Eastern Europe, and the Mediterranean. The two parties will certainly differ on various details, but they share many common perspectives on these issues.

Key foreign policy challenges are likely to lie with transatlantic approaches to Russia and to China. Each is a revisionist power, yet each poses a different challenge.

China continues to rise. It is not only a key power in the state-centric world, it has become an important connective hub in the flow-centric world. Its economic reach, rapid technological progress and growing military capabilities, global diplomacy geared to very different norms, and its vast resource needs render it a systemic challenger.

Russia, in contrast, is a declining power. It does not have China's resources. It is still a key territorial power in the state-centric world, but with the exception of energy it has failed to become an important connective hub in the flow-centric world. It is, however, both more desperate and much closer to many NATO/EU members. This can mean that in the short- to medium-term it could also be more dangerous.

While Moscow loudly smashes the rules, Beijing quietly erodes them. Russia can be a spoiler, but it does not have the capacity to reset the rules of the game. China, in contrast, has both the will and the resources to reset the international order itself. It has been said that if Russia is a tornado, China is climate change.¹⁰⁴

The best transatlantic response to these challenges consists of three elements. The first is to deter and defend as necessary against direct assaults to our territorial integrity and vital interests. The second is to avoid the temptation to revert to "containment" strategies from a very different era, and instead to define a positive agenda for democratic societies. Without vibrant, inclusive, and sustainable economic growth powered by ground-breaking innovative capacities, sustained stewardship of the international order is implausible, for the normative appeal and continued relevance of the U.S.

¹⁰⁴ Jean-Baptiste Jeangène Vilmer and Paul Charon, „Russia As A Hurricane, China As Climate Change: Different Ways of Information Warfare,” *War on the Rocks*, January 21, 2020, <https://warontherocks.com/2020/01/russia-as-a-hurricane-china-as-climate-change-different-ways-of-information-warfare/>.

and European models for others depend heavily on how well they work for their own people. The third is to recognize that although the transatlantic partnership is indispensable, it is insufficient to meet current challenges. Transatlantic initiatives must include other like-minded countries via differing coalitions of variable geometry depending on the issues at hand.

Here again the June 2021 summit offers reason for greater optimism.¹⁰⁵ At the NATO summit allies demonstrated a striking degree of unity when it came to addressing Russia's military adventurism and other troublesome behavior. And to the surprise of many pundits, Washington and Brussels also came together more closely on how to deal with China. There is general agreement that both sides want to work with China where it is in their interest, for instance on climate change, non-proliferation, and in many areas of trade. There is also agreement to address areas where both sides view China as a competitor, such as forced technology transfers, massive subsidization of domestic industries, and Beijing's failure to meet its WTO commitments. And there is greater alignment that China seeks to be a systemic rival, for instance by contesting democratic norms and adherence to standards of human rights and rule-of-law norms. Debates continue on each side of the Atlantic over the proper balance that might be struck among these different approaches. There are as many differences on these issues within the EU as there are between Europe and America. Yet there is now a transatlantic frame through which both sides can address the China question.

Reinvention, Not Restoration

If the United States and the European Union are to make their partnership more effective, they will need to align their geostrategic and geoeconomic goals more closely with their domestic concerns. That is the essence of Joe Biden's "foreign policy for the middle class."¹⁰⁶

The case for domestic renewal is self-evident on both sides of the Atlantic. Europeans and Americans are unlikely to act together effectively abroad if they can't get their acts together at home.

¹⁰⁵ „Brussels Summit Communiqué,” NATO Press Release (2021) 086, Brussels, June 14, 2021, https://www.nato.int/cps/en/natohq/news_185000.htm.

¹⁰⁶ Joseph R. Biden, Jr., „Why America Must Lead Again,” *Foreign Affairs* 99:2 (March–April 2020), pp. 64–76, here pp. 68–71.

European self-confidence has been shaken by a series of challenges, from the financial crisis, eurozone disruptions, and Russian military adventurism to migration flows, populist assaults, and the shock of Brexit, that have generated fissures across the continent. A Europe that is fractured and anxious is unlikely to be the type of stable, outward-looking partner the United States seeks.

Nor is the United States likely to be the type of consistent global partner that Europeans need and want if it does not beat COVID-19, generate more equitable, inclusive, and sustainable growth, and work to heal its deep social, racial, and class divisions. America can't help others if it can't help itself.

Perhaps the greatest danger to a renewed transatlantic bond is the temptation to believe that the relationship can go back to "business as usual." That would be a mistake. We should not aim to restore transatlantic partnership; we must reinvent it. We must position each side of the Atlantic for a world of severe health, economic, and climate challenges, more diffuse power, dizzying technological changes, greater insecurities, billions of new workers and consumers, and intensified geostrategic and geoeconomic competition.

This reinvented partnership will demand more, not less, from each partner. It will require Americans and Europeans to devise a new model of globalization, one geared less to market efficiencies than to enhancing societal resilience and well-being. Some international institutions, such as the World Trade Organization (WTO), will need to be recast. Others will need new authorities – for instance the World Health Organization (WHO), which needs to be able to gather and disseminate real-time information and investigate when states are being deceptive. Still others will need to be created – for instance a global disease surveillance and rapid response system similar in concept to our global weather forecasting capabilities. New mechanisms could be devised to tackle climate change, the proliferation of agents of mass destruction, and challenges emanating from the digital, biological, and quantum computing revolutions. The old state-centric multilateralism will not do. A new multilateralism is needed – more networked- and flow-centric, more inclusive, more flexible, more agile. Six priorities loom.¹⁰⁷

107 For more, see: Daniel S. Hamilton, *First Resort. An Agenda for the United States and the European Union. TransAtlantic No. 1* (Washington, DC: Woodrow Wilson Center/Transatlantic Leadership Network, 2021), <https://transatlanticrelations.org/publications/first-resort-an-agenda-for-the-united-states-and-the-european-union/>.

From Sickness to Health

COVID-19 will be a high-priority health security threat for years to come. Even after vaccination becomes routine, it is likely that the virus will remain endemic and continue to evolve, requiring vaccine adjustments and constant vigilance.

Beyond COVID-19, transatlantic cooperation will be an essential motor behind multilateral efforts to improve global health security and governance, including support and reform of the World Health Organization, and prioritization of "One Health," an approach that recognizes that the health of people is closely connected to the health of animals and our shared environment.¹⁰⁸ One Health is not new, but it is becoming more important as more humans live in close contact with animals, as animals become more susceptible to diseases due to disruptions in their environmental conditions and habitats, and as greater cross-border movement of people, animals, and animal products accelerate the spread of known and emerging zoonotic diseases that spread between animals and people.

There is also a need to improve security responses to future health security threats. The COVID-19 experience is dramatic evidence that pathogens can kill and sicken many millions of people, damage economies, exacerbate inequalities, and degrade security readiness and military assets. The United States and Europe share common interest in exploring how these events have changed our vulnerability to accidental or deliberate threats from biological agents and in determining whether preparedness is sufficiently in line with those dangers. This could include a joint assessment to the Biological Weapons Convention (BWC) of how biological threats have changed, how the states parties can address them, and how the BWC should be funded and organized to meet expanded challenges.

The COVID-19 pandemic has been accompanied by what the WHO calls a global "infodemic" of mis- and disinformation that has undermined public health measures and led to additional loss of life. Groups spreading disinformation about COVID-19 are coordinating and highly organized. Europe and the United States must mobilize international efforts to address this infodemic, including through public education efforts that reach beyond COVID, and through more rigorous vaccine diplomacy that showcases how democracies are addressing the challenge.

¹⁰⁸ For more on this, see: <https://www.euro.who.int/en/health-topics/health-policy/one-health>.

Meeting the Climate Challenge Through Energy and Economic Opportunities

The EU has welcomed the U.S. return to the Paris Climate Agreement and President Biden's goal of carbon neutrality by 2050, which mirrors the EU's own target. The more difficult reality is that few countries are on pace to cut emissions at the scale and pace needed to meet the 2015 Paris Agreement goals, much less reach global net zero. The sober truth is that the Conference of the Parties (COP) process itself is proving to be sluggish and unwieldy, crowding out opportunities for major emitters to align and advance policies that make global net zero a realistic goal. A reinvigorated transatlantic climate partnership will need to facilitate multiple policy pathways, beyond and alongside the COP26 process, that can take the world to net zero emissions.

The two parties have pledged to work more closely to develop clean and circular technologies and will want to explore how to advance a transatlantic green trade agenda. The most immediate challenge will be U.S.-EU consultations on carbon border adjustment mechanisms (CBAMs) – taxes on imported goods based on their attributed carbon emissions – given that the European Commission is moving ahead with such plans without adequate prior consultations with the United States, and it is questionable whether such plans are compatible with WTO rules.¹⁰⁹ Because the EU and the United States are each other's largest commercial partners, driven by significant mutual investments forming dense interlinkages across both economies, it will be important for the parties to work together to devise WTO-compatible CBAMs. Transatlantic alignment could set a global template for such measures; transatlantic divergence could further disrupt the transatlantic economy and derail cooperation on a host of other issues.

Promoting Jobs and Growth, Including Through Trade and Investment

On the economic front, if the two sides are able to address the lingering irritants they have agreed to tackle first, this could clear a pathway to a more ambitious agenda. WTO reform is near the top of the list. This includes restoring dispute

¹⁰⁹ See also the chapter by Kerstin Westphal in this volume.

settlement by reforming the Appellate Body, intensifying U.S.-EU-Japan work on level playing field issues, and bringing forward WTO e-commerce negotiations.

The United States and the EU must also reframe the goals of their economic cooperation. The pandemic-induced recession has swelled economic insecurities on each side of the Atlantic, amplifying popular concerns about jobs and equitable growth. The climate change crisis and the digital revolution are challenging industrial-age patterns of production and consumption, innovation, and regulation. Intensified global competition, driven in part by China's model of authoritarian state capitalism, is challenging the attractiveness of democratic market-based systems. These factors compel the United States and Europe to focus transatlantic cooperation squarely on creating jobs, boosting sustainable growth, and protecting our values by ensuring that North Atlantic countries are rule-makers, rather than rule-takers, in the global economy. Transatlantic trade and investment initiatives should be advanced as means to these ends, not as ends in themselves.

Despite dense transatlantic commercial interlinkages, the two parties have struggled to harness the full potential of the transatlantic economy to generate jobs and growth. Their most ambitious initiative, the Transatlantic Trade and Investment Partnership (TTIP) negotiations, made respectable progress but ultimately ran out of gas when the Obama administration ended in January 2017. Given the multitude of bilateral irritants that have accumulated since then, there is temptation to keep transatlantic negotiations in the deep freeze. Currently, the obstacles seem too high, and the incentives too low, for either side of the Atlantic to invest much political capital in any major transatlantic economic initiative.

Nonetheless, an ambitious transatlantic trade and investment agenda is important to the ability of the United States and the EU to build a broader agenda, because if they prove unable to resolve bilateral frictions and clarify the terms of their own extensive commercial relationship, it will be difficult to find common ground on other issues. Standing still means losing ground.

The two parties must recommit to a positive trade and investment agenda, even as they focus that agenda on effective ways to render both economies stronger and promote better jobs and sustainable growth. They should start by separating regulatory cooperation from market access negotiations. Negotiating mutual recognition of essentially equivalent norms and regulatory coherence across a plethora of agencies rendered TTIP enormously complex.

It gave the impression that trade negotiators might be prepared to bargain away basic rules and standards that societies on each side of the Atlantic had devised through their respective democratic procedures. TTIP's complexity created a deep gap between the aims of the partnership and what ordinary citizens believed it would produce. Any new transatlantic initiative must be grounded in a fundamentally new narrative and approach. Bilateral regulatory cooperation should be about helping regulators become more efficient and effective at protecting their citizens in ways that are democratically legitimate and accountable, not about removing or reducing non-tariff barriers to trade. It must help regulators do their job; positive economic gains that might result would be important but secondary.

Ultimately, the United States and the EU should seek a Transatlantic Zero tariff agreement that would eliminate all duties on traded industrial and agricultural goods and services. Given that most U.S.-EU tariffs are low (1-4%), a tariff-free agreement could be achieved relatively quickly, would translate into millions of new jobs across the North Atlantic space, and improve both earnings and competitiveness for many companies, particularly small- and medium-sized enterprises. Because the volume of U.S.-EU trade is so huge, eliminating even relatively low tariffs could boost trade significantly. And because a substantial portion of U.S.-EU trade is intra-firm, i.e., companies trading intermediate parts and components among their subsidiaries on both sides of the Atlantic, eliminating even small tariffs can cut the cost of production and potentially lower prices for consumers. Transatlantic Zero should exclude sanitary and phytosanitary (SPS) measures such as GMOs, chlorinated chicken, beef hormones, which should be addressed by those responsible for food/plant safety. It should also exclude investor-state dispute settlement (ISDS) provisions.

Bridging Transatlantic Digital Disconnects

The United States and Europe bear particular responsibility to define the digital world, because the transatlantic theatre is the fulcrum of global digital connectivity. Transatlantic flows of data continue to be the fastest and largest in the world, accounting for over one-half of Europe's global data flows and about half of U.S. flows. North America and Europe generate about 75% of digital content for internet users worldwide. Transatlantic cable connections are the densest and highest capacity routes, with the highest traffic, in the world. The United States and Europe are each other's most important

commercial partners when it comes to digitally-enabled services. Moreover, as the EU has noted, the digital revolution is about more than hardware and software: "it is also about our values, our societies and our democracies."¹¹⁰

Instead of building on these dense transatlantic interconnections, the two parties have allowed a series of digital disconnects to roil U.S.-EU relations. These include the collapse of the U.S.-EU Privacy Shield regulating personal data flows across the Atlantic, as well as broader differences over privacy rules, digital services taxes, antitrust laws, efforts to address dis- and mis-information through digital channels, contrasting approaches to 5G regulation, and the EU's proclaimed ambition to strengthen its "technological sovereignty," which aims in part to reduce European dependence on U.S.-based cloud operators. In addition, the European Commission has advanced major initiatives through its Digital Services Act and Digital Markets Act that could create additional complications for the Biden administration. If the two sides of the Atlantic are to form the core of a wider coalition of like-minded democracies on issues of data governance that can prove more vibrant than autocratic alternatives, they must address these issues. The TTC could offer a framework for initial efforts in this area. Ultimately, however, transatlantic differences are rooted in different legal regimes. Greater alignment on data governance will require legislative action, which underscores how important it is to engage the U.S. Congress and European parliaments in more effective transatlantic dialogue.

Enhancing Resilience

The COVID-19 pandemic, cyberattacks, dis- and mis-information through digital channels, terrorist threats, and disruptions to supply chains are grim examples of how essential flows of people, goods, services, transportation, energy, food, medicines, money, and ideas that power our societies are increasingly susceptible to disruption. There is pressing need to implement operationally the concept of resilience – the ability to anticipate, prevent, protect against, and bounce forward from disruptions to critical functions of our societies.¹¹¹

¹¹⁰ *A New EU-US Agenda for Global Change, JOIN(2020) 22 final, Brussels, December 2, 2020, https://ec.europa.eu/info/sites/info/files/joint-communication-eu-us-agenda_en.pdf.*

¹¹¹ *For more on the idea of how to share and project resilience with partners, see: Daniel S. Hamilton (ed.), Forward Resilience. Protecting Society in an Interconnected World (Washington, DC: Johns Hopkins Center for Transatlantic Relations, 2015), <https://transatlanticrelations.org/publications/forward-resilience-protecting-society-in-an-interconnected-world/>.*

Ensuring the resilience of one's society is foremost a task for national governments. Resilience begins at home. Nonetheless, no nation is home alone in an age of pandemics, potentially catastrophic terrorism, networked threats, and disruptive hybrid attacks. Country-by-country approaches to resilience are important but insufficient in a world where few critical infrastructures are limited to national borders and where robust resilience efforts by one country may mean little if its neighbor's systems are weak. Moreover, not only are European and North American societies inextricably intertwined, no two economies are as deeply connected as the two sides of the North Atlantic. If Europeans and Americans are to be safe at home, national efforts must be coupled with more effective transatlantic cooperation.

A vigorous transatlantic and international resilience effort should be a core priority for the U.S.-EU partnership. U.S.-EU Summit principals should adopt a Transatlantic Solidarity Pledge by issuing a joint political declaration that they shall act in a spirit of solidarity – refusing to remain passive – if either is the object of a terrorist attack or the victim of a natural or man-made disaster, and that they shall mobilize instruments at their disposal to assist at the request of their respective political authorities. The United Kingdom and Canada should be invited to join that declaration. To operationalize this initiative, they should create a U.S.-EU Resilience Council, develop a Critical Infrastructure Security Action Plan, improve coordination among relevant operations centers, and take up the EU's offer to cooperate on cybersecurity capacity building, situational awareness, and information sharing.

A political pledge would create key preconditions for advancing overall resilience, give political impetus, bureaucratic guidance, and spur operational mechanisms toward that shared objective. An EU-U.S. Resilience Council could operationalize this initiative and serve as a cross-sector forum for strategic deliberations about threats, vulnerabilities, and response and recovery capacities. This group would ensure coordination across existing work within established but sector-focused and often stove-piped bureaucratic agencies.

A key element of this agenda is more effective cooperation on cybersecurity capacity building, situational awareness, and information sharing, including possible restrictive measures against attributed attackers from third countries. Data-sharing and mutual assistance for real-time responsiveness to cyber threats will be increasingly essential in a world characterized by the growing use of sophisticated AI to penetrate often vulnerable systems. It would be a concrete expression of a Transatlantic Solidarity Pledge.

A coordinated approach to strengthening the resilience of critical infrastructures would not only benefit the transatlantic economy; it can ensure that our shared values are the engine powering the upcoming transition from a world of "openness at all costs" to one in which trusted infrastructures protect critical flows from disruption and attacks.

Effective resilience also requires engagement by the private sector, which owns most transnational infrastructures and movement systems critical to essential societal functions. U.S.-EU efforts in this area have been uneven at best. One model might be Information Sharing Advisory Councils, which are sector-based entities established by critical infrastructure owners and operators to foster information sharing, situational awareness, and best practices about anticipating and addressing physical and cyber threats and disruptions.

The Transformation of Financial Statecraft

A striking confluence of technological innovation and geopolitical competition is transforming the very nature of money. This revolution will change how financial systems operate, societies function, and nations contend with one another in ways we have yet to fully comprehend.

Key technologies such as blockchain, AI, cloud services, big data analytics, and quantum computing are creating a new financial universe. FinTech firms and start-ups are creating new platforms, products, and services. Open-data financial ecosystems are emerging across the globe. Cross-border payments are becoming cheaper and more efficient. More than 80% of the world's central banks participating in a most recent poll by the Bank for International Settlements "are now exploring the benefits and drawbacks" of central bank digital currencies.¹¹² Private actors are launching cryptocurrencies and alternative token-based designs.

These financial innovations promise tremendous new value for stakeholders and new tools to drive the growth of inclusive economies. They highlight the increasingly central role of data flows and related issues of data governance. They also pose significant dilemmas for public policymakers and private sector actors alike: how to balance privacy concerns and security issues; how

112 Codruta Boar and Andreas Wehrli, *Ready, Steady, Go? – Results of the Third BIS Survey on Central Bank Digital Currency* (Basel: Bank for International Settlements, 2021), p. 3, <https://www.bis.org/publ/bppdf/bispap114.htm>.

to regulate and supervise certain fintech innovations like crypto assets; how central bank digital currencies will work, and whether they can and should be interoperable; and how to ensure that such currencies do not erode commercial bank deposits, replace cash, crowd out innovation, or become shadow currencies in small countries.

These challenges are exacerbated by today's competitive geopolitical era. Countries are tempted to weaponize financial flows and to instrumentalize the chokepoints and asymmetric dependencies that growing financial entanglements can engender. Many are deploying fintech innovations as powerful tools of surveillance. Some see the development of digital currencies as a means to bypass traditional banking systems, evade sanctions, and to challenge the central role of the U.S. dollar in the international monetary system. Cryptocurrencies are gaining footholds in countries where the national currency is volatile or unreliable, even as cybercriminals turn to such payments to facilitate ransomware attacks. Countries such as China are combining finance, infrastructure, and digital innovation to generate new currencies of influence, particularly in the developing world. Power is also diffusing from states to private companies, many wielding superior technologies and boasting a global customer base of billions, that have entered the financial space yet are unconstrained by traditional banking regulations. Concern is growing that disruptive innovations could create new channels of contagion when it comes to financial risk.

Addressing these concerns is critical for the transatlantic partnership, but the U.S.-EU channel, while indispensable, is inadequate to the task. That is because the eurozone does not correspond to the full EU membership, and because central banks from other European countries such as the United Kingdom and Switzerland, as well as other key countries globally, will need to be involved. There is likely to be an initial wave of "forum shopping" and competition among various organizations and frameworks, from the Bank of International Settlements to the IMF to the G7 and the G20, before key countries are able to appropriately engage on the issues.

On all of these issues and more, the United States and Europe have been presented with a rare moment of opportunity. The next few years will tell whether Europeans can muster the will, and Americans the patience, for the nuanced and painstaking work required to make the transatlantic partnership more effective and strategic in the disruptive, competitive world that lies ahead.



The Triangle Faces East: The Geoeconomic Power of Russian- Chinese-Arab Gulf Cooperation

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Introduction: What Is the Rationale for the Increasing Relations Between China, Russia, and Arab Gulf Countries?

The global geopolitical order is undergoing a dramatic bifurcation as the rise of illiberal nations threatens to tear the current liberal international order apart with a north-south seam. This rising divergence is pulling the global economy into two camps based loosely in the East and West, respectively. This eastward shift of power is driven by a collection of countries, chiefly a continuously ascendant China, resurgent Russia, and increasingly assertive Arab Gulf, which seeks to increase their relative power in the international arena and lead the "New East" as peer competitors. These countries are currently challenging the liberal world order by aiming to obtain the autonomy to conduct their economic and political relations in the manner they wish, free from the purview of the West and a fractured Europe. These actors, based on their thinking, see themselves all as peer competitors. They see a broken West; they are instead seeking to achieve mutually beneficial outcomes and are establishing a new global nexus of power. Their geopolitical weight is not measured in traditional statistics but maneuvers and actions that give advantage over their competitors. These nations enjoy more strategic leeway because they are less "entangled" by commitments as they synergize. This factor foreshadows particular features of the future international order. Business and economic activities have been the preferred tools used to gain further sovereignty and related privileges for these triangular partners. By joining forces, they are leveraging and exploiting vulnerabilities within the existing international system to their advantage.

Motives and Cooperation away from the United States

China, Russia, and Arab Gulf countries are driven by a desire to further grow their power and influence in the international arena, something they collectively view as only achievable through the rejection of the liberal international order and construction of an alternative, and illiberal, system. At the heart of this lay efforts to fundamentally reshape the global economy and construct an alternative to the current system. The implications of this are profound and touch every aspect of the globalized economy, primarily by enabling these

respective actors to face fewer obstacles to pursuing their desired agendas and creating alternatives to established norms. Their triangulation moves them away from the United States.

The triangular partners' economic strategy consists of taking leading roles in the construction of new global routes of trade, increasing access to emerging markets (notably throughout the Global South), hastening the shift away from the U.S. dollar by withdrawing holdings of U.S. Treasury Notes as the dominant currency in foreign exchange holdings, and taking leadership positions in Fourth Industrial Revolution (4IR) technology fields. As such, China, Russia, and Arab Gulf countries view a coalescence and triangulation of efforts as having the potential to expedite the eastward movement of the global economy.¹¹³

The primary driving force of the triangulated efforts is flow control¹¹⁴ as illustrated by the Chinese Belt and Road Initiative (BRI). Bringing the BRI into existence necessitates the fostering of lasting partnerships with key strategic actors that will control various aspects pertaining to the potential success of the initiative. The Arab Gulf lays at a logistical checkpoint, as the 21st Century Maritime Silk Road depends on secure access to the Arabian Sea, Gulf of Oman, Gulf of Aden, Red Sea, Bab al-Mandab straight, and Suez Canal.¹¹⁵ Russia also acts as an important gatekeeper, especially in and around the Mediterranean theater. The triangular partners all stand to benefit tremendously from the development of the BRI and have increased cooperation to facilitate its introduction and success.

But the ongoing historical process is not based solely in BRI. The speed at which the triangular partners are moving away from the West following the commencement of the Biden presidency has only increased. This axis of countries has focused on highlighting America's weaknesses, a long-favored technique by those that do "not play geopolitics in its traditional form. It aims to discredit American doctrines of free markets, globalization, and liberal democracy. The members have forged their coalition with anti-American rhetoric, a coercive use of oil and natural gas shipments, and deterrence

113 Theodore Karasik, "Russia and China leading eastern economies away from troubled West," *Arab News*, August 28, 2018, <https://www.arabnews.com/node/1363156>.

114 Heiko Borchert, *Flow Control Rewrites Globalization. Implications for Business and Investors. HEDGE21 Strategic Assessment* (Dubai: HEDGE21/Alcazar Capital, 2019), https://www.borchert.ch/wp-content/uploads/2021/08/1901_Borchert_Flow_Control.pdf.

115 John Calabrese, "China's Maritime Silk Road and the Middle East: Tacking Against the Wind," *Middle East Institute*, May 19, 2020, <https://www.mei.edu/publications/chinas-maritime-silk-road-and-middle-east-tacking-against-wind>.

through asymmetric warfare capabilities."¹¹⁶ The logistical networks of these triangular partners are growing in tandem with the increasing need for post-pandemic economic recovery as bifurcation comes closer to fruition. DP World's Logistics Passport functions as an inclusive shipping network that builds on the BRI and other shipping networks on global scale. The program consists of twenty-three nations across Asia, Europe, Africa, and South America. It is the world's first global freight loyalty scheme with access to different tiers of benefits and helps to move the economic center of the world considerably eastward towards Beijing.¹¹⁷

Triangular Cooperation in Action

The further bifurcation of the global economy is contingent upon the continued shift away from the U.S. dollar. Fundamentally, for China to overcome the United States economically and be able to translate this economic might into tangible soft power they will need to move the global economy away from the U.S. dollar and towards one that incorporates the Chinese yuan even more. Russia shares the desire to shift the global economy away from a dependence on the U.S. dollar, as it would shield Russia from the ramifications of potentially being cut off from the global financial system. This is largely being pursued by the leveraging of regional groups, organizations, and banks, such as the Asian Infrastructure Investment Bank and the Shanghai Cooperation Organization (SCO), as political tools.

Energy

For Arab Gulf countries, triangulation with China and Russia offers further assistance with their desire to transform their respective economies away from oil and natural gas (O&G) dependence to having diversified portfolios. O&G is the glue that helps to bring this triangulation together towards smart energy while still extracting and processing petroleum and gas products to the very last drop. Fighting among OPEC members, for example, should be seen within the context of rebooting from the energy crash of 2020 as part of the economic reset of the pandemic's impact. OPEC members Saudi Arabia and the United Arab Emirates (UAE) will fight in their own unique way

116 Jeremy Ghez, Theodore Karasik, and Brian Nichiporuk, "A New Anti-American Coalition," *Rand Review* 32:2 (Summer 2008), p. 22, https://www.rand.org/pubs/corporate_pubs/CP22-2008-08.html.

117 For more on this, see: <https://www.worldlogisticspassport.com/en/about-us/what-is-wlp>.

over market share especially through the 2021-2022 period. The impact on triangulation helps to shake out kinks in the emerging new energy market by focusing on the long term.

Renewables are part of the landscape in terms of partnerships and competition for energy intensive reasons that have been in development since the early 2010s. China is for now winning the global race to invent and manufacture the technologies that will allow a new low-carbon world, and both Russia and the Gulf are in sync with these programs. UAE's Masdar, long thought to be a joke by Western experts, is now leading efforts to build up its capacity in this sphere. Masdar's investments in Russia and China plus surrounding partner countries of both Moscow and Beijing help boost the triangulation and its "pull" eastward in renewables in terms of smart city development such as in Malaysia and Indonesia.¹¹⁸

Energy technological transfers are central to this shift, as the region has begun moving towards a position. These three parts of the triangle can work together in clean tech and energy futures. Triangular partners may engage on their own energy ecosystem. Technology sharing with third countries and Western actors may lose its dominance. Artificial intelligence (AI) for smart energy grids is a case in point. AI provides unique solutions for energy production, power grid balance, and energy consumption analysis within the scope of coordinating efforts in the energy grid evolution. AI has become an important part of the power industry to help with self-learning and calculation.¹¹⁹ Data AI and IoT Blockchain, which are seen as potential solutions for enhanced energy efficiency and reliability, are part of the triangulation effect. This cooperation is important with its eastward flow in terms of data sharing and knowledge management. The energy game continues to be as is, but only the technology has changed. The impact on BRI supply chain is exponential.¹²⁰

118 See, for example: Mary Thornbush and Oleg Golobchikov, "Smart Energy Cities: The Evolution of the City-Energy-Sustainability Nexus," *Environmental Development*, March 26, 2021, <https://doi.org/10.1016/j.envdev.2021.100626>; Mark Ringel, "Smart City Design Differences: Insights from Decision-Makers in Germany and the Middle East/North-Africa Region," *Sustainability* 13:4 (February 2021), <https://doi.org/10.3390/su13042143>; Natalie Koch and Veli-Pekka Tynkkynen, "The Geopolitics of Renewables in Kazakhstan and Russia," *Geopolitics* 26:2 (March 2019), pp. 521-540, <https://www.tandfonline.com/doi/abs/10.1080/14650045.2019.1583214?journalCode=fgeo20>.

119 Abdallah Chehri, Issouf Fofana, and Xiaomin Yang, "Security Risk Modelling Smart Grid Critical Infrastructures in the Era of Big Data and Artificial Intelligence," *Sustainability*, 13:6 (March 2021), <https://www.mdpi.com/2071-1050/13/6/3196>.

120 Kevini Lim, *China-Iran Relations: Strategic, Economic and Diplomatic Aspects in Comparative Perspective* (Tel Aviv: INSS, 2021), <https://www.inss.org.il/publication/iran-china-memorandum>.

Finance

The move away from the U.S. dollar has partially been fueled by resistance to US actions, such as the weaponization of the U.S. dollar and threats of withholding it from countries that do not adhere to U.S. sanctions on Iran or support broader foreign policy objectives. The threatening of lack of access to the U.S. dollar and U.S. banks is likely to have backfired and may have contributed further to the global move away from the dollar as alliances were strained. The direct implication on the United States is that countries most frequently hold the currencies of their allies,¹²¹ and as the United States is viewed as a less reliable partner by countries of the East, specifically Russia, and China.¹²²

Sovereign Wealth Fund (SWF) activity is also important to see within the scope of triangulation. As of January 2021, the China Investment Corporation was the second largest SWF in the world with over US\$1trn in assets. The Abu Dhabi Investment Authority (ADIA) ranked third with around \$580bn while the Kuwait Investment Authority ranked fifth with total assets worth around \$530bn. These are followed by the Qatar Investment Authority and Mubadala.¹²³ These funds all participate on a global scale, but the strategies differ between West and East investment. Although these SWFs focus on investment in Western firms and projects, this seem to be short-term investments, whereas the investments in the East are long term. This difference in time scale favors the triangulation's pull towards China. Saudi PIF investment in East Asia is growing with a focus on China. The UAE-China Joint Investment Cooperation Fund will deploy capital in jointly approved investments in the UAE and China. This vehicle provides the linkage necessary between the two countries for investment flow in both directions.

Cryptocurrencies are another facet of this effort and serve to obfuscate the origin and purpose of transactions from Western eyes and algorithms, thus serving as critical tools to break Western sanctions. Blockchain transactions between UAE and China signal cooperation that influences the direction of electronic financial flow.¹²⁴ This goes hand in hand with joint efforts to es-

121 Barry Eichengreen, Arnaud Mehl, and Livia Chitu, *How Global Currencies Work. Past, Present, and Future* (Princeton: Princeton University Press, 2018).

122 Barry Eichengreen, "The Dollar and its Discontents," *Seoul Journal of Economics* 34:1 (February 2021), pp. 1-15, <https://doi.org/10.22904/sje.2021.34.1.001>.

123 Katharina Buchholz, "The World's Biggest Sovereign Wealth Funds," *World Economic Forum*, February 12, 2021, <https://www.weforum.org/agenda/2021/02/biggest-sovereign-wealth-funds-world-norway-china-money>.

124 Varun Godinho, "China Strengthens Fintech Cooperation with Dubai through New Agreement with DFIC," *Gulf Business*, July 26, 2020, <https://gulfbusiness.com/china-strengthens-fintech-cooperation-with-dubai-through-new-agreement-with-dfic/>.

establish an alternative financial infrastructure. Russia and China strive to set up an indigenous financial infrastructure that tilts financial flows away from SWIFT as part of the triangulation affect. Furthermore, it can be speculated that the stronger Fintech bonds will grow among the partner countries, the more these nations will be willing to tear away from SWIFT. These countries require Fintech in their ecosystem with cryptocurrency. Regulatory issues are the frontier where this emerging transactional system will finally settle, likely between East and West.¹²⁵ If China can convince Russia and the Gulf into a circular economy at their end of the triangulation, then there is a major tectonic change in geoeconomics.

Ports and Connectivity

The construction of ports at key locations to control access to markets and resources or serve as a logistical or military centers is a key feature of the efforts throughout the Global South by the triangular partners.

For China, the commencement of the BRI has brought forth plans for an integrated logistics system in the region that will be utilizing rail-to-port throughout. The Chinese and Arab Gulf partners share a recognition of the importance in keeping these shipping routes secure. Djibouti, similar to the above actors, is an important partner for the Chinese, who have secured a naval base in the country in return for considerable infrastructure investments. The Chinese navy base mirrors much of that of investments in the lynchpin of the China-Pakistan Economic Corridor, the port in Gwadar, Pakistan valued at \$46 billion. China has coupled military power projection with increased economic access from investments in key ports along the BRI.¹²⁶ Currently, China is looking at Mozambique, where DP World is already scoping out their next corporate move with both dry and wet port operations.¹²⁷ China is actively pursuing the Port of Bogomayu in Tanzania as part of a larger strategy for a larger hub and spoke model in this strategic part of the east coast of Africa.¹²⁸

125 John Riley, "The Current Status of Cryptocurrency Regulation in China and Its Effect around the World," *China and WTO Review* 7:1 (March 2021), pp. 135-152.

126 "The Belt and Road Initiative in the Global Trade, Investment and Finance Landscape", in *OECD Business and Finance Outlook 2018* (Paris: OECD Publishing, 2018), https://doi.org/10.1787/bus_fin_out-2018-6-en.

127 <https://dpworldkomatipoort.com/>.

128 Ken Moriyasu, "China Looks to East Africa for Second Indian Ocean Foothold," *Nikkei Asia Review*, June 30, 2021, <https://asia.nikkei.com/Politics/International-relations/Indo-Pacific/China-looks-to-East-Africa-for-second-Indian-Ocean-foothold>.

Ensuring continued connectivity as well as the need to guarantee food security are major drivers for expanding the Gulf naval presence beyond the region and despite the relatively small size of their naval forces.¹²⁹ The UAE's presence is throughout the Horn of Africa, notably on the Bab al-Mandab strait in addition to Eritrea and Somalia, Yemen, Libya, and Seychelles. Beyond security, the humanitarian requirement to deliver food aid and help jump-start communities through state funding projects are growing strategic priorities for Abu Dhabi, Dubai, and Sharjah. In order to deliver such aid, the UAE mixes its military and civilian lift capability to deliver aid but also with a strong emphasis in securitization. Therefore, the UAE is primarily interested in securing sea lines of communications from the threat of regional piracy, disrupting illicit trafficking networks, and counterbalancing Iranian and 'extremist' actions and activity.¹³⁰

Artificial Intelligence and Cyber Security

Digitalization adds an additional layer to the triangular cooperation that is becoming increasingly important. In this regard, AI and other 4IR technologies constitute another facet of the longstanding efforts to shift the center of global power eastward. This shift has only metastasized following the outbreak of the COVID-19 pandemic and may potentially transformed the marathon for technological superiority into a full-on sprint.

China is edging closer to the west as the leader in overall AI, biotechnology, pharmaceuticals, and quantum computing.¹³¹ Increasingly, China and the UAE are cooperating on such advancements in 4IR technology, especially out of Dubai's free zones.¹³² Russia's Skolkovo Foundation partners with Arab Gulf nations on this key topic. In mid-June 2021, for example, the Qatar Science & Technology Park (QSTP) announced collaboration with Skolkovo to boost

129 Zach Vertin, *Red Sea Rivalries: The Gulf, the Horn and the new geopolitics of the Red Sea* (Washington, DC: Brookings, 2018), <https://www.brookings.edu/research/red-sea-rivalries-the-gulf-the-horn-and-the-new-geopolitics-of-the-red-sea/>.

130 Theodore Karasik and Jeremy Vaughan, *Middle East Maritime Security. The Growing Role of Regional and Extraregional Navies. Policy Notes 41* (Washington, DC: The Washington Institute for Near East Policy, 2017), <https://www.washingtoninstitute.org/policy-analysis/middle-east-maritime-security-growing-role-regional-and-extraregional-navies>.

131 Marina S. Reshetnikova, „Will China Win the AI Race?,” in Elena G. Popkova and Bruno S. Sergi (eds.), *Modern Global Economic System: Evolutional Development vs. Revolutionary Leap* (Cham: Springer International Publishing, 2021), pp. 2064-2074.

132 See, for example: Kelly Carman, „The Genie Is Out of the Bottle: What Do We Wish For The Future Of AI?,” *Journal of Law and International Affairs* 9:1 (February 2021), pp. 180-215, <https://elibrary.law.psu.edu/jlia/vol9/iss1/9/>; Robert Mogielnicki, „Free Zones in Dubai: Accelerators for Artificial Intelligence in the Gulf,” in Elie Azar and Anthony N. Haddad (eds.), *Artificial Intelligence in the Gulf* (Singapore: Palgrave/Macmillan, 2021), pp. 141-159.

the technology and start-up ecosystems of both Russia and Qatar and strengthen the commercial and economic ties between the two countries. The partnership will also see increased activities in the fields of health and biomedicine, energy, resource sustainability, information and telecommunication technologies, cybersecurity, and digital technology.¹³³ To be sure, Gulf-China methods of biometrics and AI to secure societies is part of this landscape. Old infrastructure or souks are scrapped and replaced by modern structures with embedded biometrics for convenience. The phenomenon is found from Xinjiang to the Gulf in all modern structures and streets.¹³⁴

Moreover, cybersecurity is another realm where clashes over control between the East and West are already playing out. Controversy over the use of Huawei components for future 5G telecommunications infrastructure is a case in point. Currently, this issue even clouds the supply of key defense systems such as the F-35 fighter jet from the United States to the UAE.¹³⁵ But it is exactly the mix of technologies in the cybersphere that drives the commercial and military applications of the respective technologies among triangular partners, as they are all striving to establish indigenous technology bases that reduce dependence on Western suppliers.

Finally, there is the cybersecurity aspect of the Abraham Accords (AA) between UAE and Israel. On the one hand, the AA accelerates the sharing of cybersecurity tools between the two countries that has gone on secretly for the past decade. But there is a wild card here to play by the West against the triangulation effect. The AA could be a kind of Trojan Horse to "infiltrate" the triangular partnership via Israeli-driven (and U.S.-funded) tech cooperation. This type of action could "tame" the triangular partnership.

Vaccine Diplomacy

Vaccine diplomacy expedites the plans of the triangular partners. Whereas the United States and other Western countries have turned inwards and

133 "Qatar Foundation's Technology Hub and Skolkovo Foundation to Strengthen Economic and Technological ties between Qatar and Russia," *Zawya*, June 6, 2021, https://www.zawya.com/mena/en/press-releases/story/Qatar_Foundations_technology_hub_and_Skolkovo_Foundation_to_strengthen_economic_and_technological_ties_between_Qatar_and_Russia-ZAWYA20210606041844/.

134 Rebecca Stark, "China's Use of Artificial Intelligence in their War Against Xinjian," *Tulane Journal of International and Comparative Law* 29:1 (Winter 2021), pp. 153-173.

135 Warren P. Strobel and Nancy A. Youssef, "F-35 Sale to UAE Imperiled Over US Concerns About Ties to China," *Wall Street Journal*, May 25, 2021, <https://www.wsj.com/articles/f-35-sale-to-u-a-e-imperiled-over-u-s-concerns-about-ties-to-china-11621949050>.

focused on massive and rapid vaccination programs domestically, the triangular partners have taken the initiative to provide vaccines to many countries. Despite the denials of having dual purposes, these actions have certainly grown their respective bargaining power abroad with recipient nations.

In the Gulf, the relationship between UAE and China on the use of Sinopharm by the China National Pharmaceutical Group and to make the Emirates a “vaccination hub” that locally produces Sinopharm vaccines for other regions is an example of vaccine “hub and spoke” distribution networks that triangular partners are using to deliver these medicines. Although not all vaccines are perfect because of the lack of a multi-year test run, multiple varieties of vaccine are available. This type of vaccine cooperation on the vaccine front helps to produce a product for regional or global distribution from Khalifa Industrial Zone and Dubai Humanitarian Aid City and likely complemented by World Logistics Passport for global distribution.¹³⁶

Triangular Geopolitical Ambitions

The geopolitical space of the triangulation effect is an important component of how the ecosystem pulls at geographical space. Geospatial relationships become key in the emerging political and social space as national interests are redefined in the pandemic and post-pandemic environment. The pandemic is a driver that integrates this new ecosystem. The triangulation may or may not be perfect; the effect of the geopolitical interplay continues to change the tactical space and is tectonic in nature and part of this complex period of global transformation.

Middle East

Russian strategy towards the Middle East has shifted markedly since 2007, primarily focusing on constructing a “north-south” economic corridor that allows them to regain what they view as their rightful place in the Middle East that last existed under the Soviet Union,¹³⁷ increasing economic triangulation and interconnectivity via soft power initiatives, fostering finance agreements

136 Oxford Analytica, “Emirates Position to Become Global Vaccine Hub,” *Expert Briefings*, January 19, 2021, <https://www.emerald.com/insight/content/doi/10.1108/OXAN-DB258869/full/html>.

137 Joseph L. Noguee, *The Soviet Union in the Third World: Successes and Failures* (Carlisle Barracks: Strategic Studies Institute/US Army War College, 1980), pp. 7-8, <https://apps.dtic.mil/sti/citations/ADA090959>.

between SWFs and other government-owned investment vehicles, and monopolizing the printing of currency in regional war zones.¹³⁸ All Gulf States participate in this activity to some degree. Additionally, Russia has played on popular sentiment among Arab Gulf leaders that Western governance styles are ill-suited to the region to increase triangulation.

Iran's relationship with both Russia and China plays a major role in how the triangulation will unfold because of the emerging security vacuum in Afghanistan. Importantly, Iran as a full-fledged member of the Shanghai Cooperation Organization (SCO) is again a possibility with the crisscross of new logistic lines emerging that are built on new pipelines and rail lines. But the Russia-Chinese-Iran triangle could be at odds with a Russia-China-Gulf Cooperation Council (GCC) triangle depending on the role of each GCC state. To be sure, Afghanistan's continuing power vacuum, a Taliban government, and the rise of Khorasan-ISIS will be consuming this triangle considerably more. The United States' departure from Afghanistan left a strategic gap for the triangle to consume but also, perhaps, to get bogged down in, including China, Iran, and Russia.

Another factor is the impact of the Abraham Accord (AA) on the Russia-Chinese-Iran triangle. The AA is in this sense is a military-security agreement protecting both Israeli and Emirati interests from Tehran. When the AA was signed, the strategic and tactical nature of the agreement was predominantly against Iran. The agreement is part of the joint Emirati Israeli security role in the region. From a regional point of view, it is seen as a flexible agreement, where the two sides cooperate between West and East. However, flexibility also comes at a price: On the one hand, Israel and the UAE might overplay their cards with regard to the Biden administration and U.S. congress if they cozy up too closely on technical and financial terms with Russia and China. With the UAE sitting as a non-voting member on the UNSC for 2022-2023, a triangular agenda may be pursued on diplomatic issues.

Central Asia

Central Asia is currently at the intersection of the spheres of influence of China, Russia, and the Arab Gulf countries, most notably the UAE. Russia and China have historically held the most sway over the region and often

¹³⁸ Karasik, *Russia's Financial Tactics in the Middle East*.

competed for influence. The UAE has emerged as a considerable outside influence in the region. Spurred by the ability to highlight cultural similarities (the UAE is historically tribal and Central Asia largely tribal and clannish), the UAE has garnered political goodwill in the region as well as access to natural gas markets.

This goodwill serves Chinese interests in the region that will host several BRI projects given the initiatives support by the UAE, which in turn uses its influence to piggyback off the promotion of BRI efforts and gain a stronger foothold in the region. Further, UAE investments are significant in the Central Asian energy sector and have also yielded positive results for Russia, as they serve as intermediaries with other Muslim groups. Dubai-based DP World has invested in ports on the Caspian Sea, including two in Kazakhstan that give the group management and governance rights, where Russian firms stand to benefit from their utilization."¹³⁹

Africa

China has a long history of efforts to expand relations with the African continent.¹⁴⁰ Chinese interests are centered on access to ports, markets, and materials, such as cobalt.¹⁴¹ Chinese leaders and strategists believe that China's historical experience and vision of economic development resonates powerfully with African counterparts and that the long-standing history of friendly political linkages and development co-operation offers a durable foundation for future partnership."¹⁴²

Russia engages in government-sponsored activities in the Horn of Africa dating back to the 1800s, such as the provision of military advisors to Ethiopia during struggles with European nations.¹⁴³ During the Cold War, the Soviet Union operated across the African continent. These efforts have continued following the collapse of the Soviet Union to the present day as Russia competes with China for influence. Russia, sometimes working in tandem with

139 Theodore Karasik, "The United Arab Emirates in Central Asia," *Newlines Institute for Strategy and Policy*, August 28, 2019, <https://newlinesinstitute.org/china/the-united-arab-emirates-in-central-asia/>.

140 John Cooley, *East Wind over Africa: Red China's African Offensive* (New York: Walker and Company, 1965), p. 3.

141 Nicolas Niarchos, "The Dark Side of Congo's Cobalt Rush," *The New Yorker*, May 24, 2021, <https://www.newyorker.com/magazine/2021/05/31/the-dark-side-of-congos-cobalt-rush>.

142 Marcus Power and Giles Mohan, "Towards a Critical Geopolitics of China's Engagement with African Development," *Geopolitics* 15:3 (August 2010), pp. 462-495, 10.1080/14650040903501021.

143 Robert G. Patman, *The Soviet Union in the Horn of Africa* (Cambridge: Cambridge University Press, 1990), pp. 26-30.

the UAE as in the case of Libya, seek to position itself alongside France as kingmaker on the African continent.

However, there are divergent opinions between China and Russia when triangular issues involve various investments in key countries. Mozambique has seen Russia and China struggle legally over access to the country key ports as part of "debt-relief operations."¹⁴⁴ Both Moscow and Beijing have fought over mining rights in Angola. For the two countries this is business as normal in Africa.¹⁴⁵ China offers investments that Russia simply cannot match, so the Kremlin boosts its influence through a series of tactics running from arms sales, distribution of private military contractors, to energy and mineral extraction. The UAE World Logistics Passport helps in assisting how international shipping that benefits the East, especially Russia and China, given established and planned logistical networks around the African continent.¹⁴⁶

Latin America

Chinese investments in Latin America have expanded significantly over the past decades,¹⁴⁷ Russia has long engaged in underhanded actions in the region, and now the Arab Gulf countries are feeling out the region. These countries, despite having different interests in the region, have triangulated their efforts in one key area: vaccine and related aid shipments.¹⁴⁸

China and Russia have both become critical allies for the embattled Maduro regime in Venezuela, and there exists a triangulation of efforts between China, Russia, and the UAE on the integration of sanctioned Venezuelan gold into the global economy.¹⁴⁹ Gulf States are moving quickly into Latin America, where their relationships with Russia and China will impact U.S. foreign policy

144 Gatien Bon and Gong Cheng, "Understanding China's Role in Recent Debt Relief Operations: A Case Study Analysis," *International Economics* 166 (August 2021), pp. 23-41, <https://www.sciencedirect.com/science/article/abs/pii/S2110701721000172>.

145 J. Peter Pham, "Africa Isn't an Island: An Emerging Continent and the Geopolitics of the 21st Century," *Orbis* 65:3 (Summer 2021), pp. 420-431, <https://www.sciencedirect.com/science/article/abs/pii/S0030438721000260>.

146 For more, see: <https://www.worldlogisticspassport.com/en/about-us/what-is-wlp>.

147 Gonzalo S. Paz, "Rising China's 'Offensive' in Latin America and the US Reaction," *Asian Perspective*, 30:4 (October 2006), pp. 95-112, <http://www.jstor.org/stable/42704566>.

148 "UAE Sends Fifth Aid Plane with 13 Tons of Medical Supplies to Colombia," *Weqaya*, September 19, 2020, <https://www.weqaya.ae/en/posts/uae-sends-fifth-aid-plane-with-13-tons-of-medical-supplies-to-colombia>; David Castrillon, "Colombia: China's New Amigo?," *The Diplomat*, May 14, 2021, <https://thediplomat.com/2021/05/colombia-chinas-new-amigo/>.

149 "Mali, Emirates Facilitated Venezuelan Gold Trade in 2020, Opposition Says," *Reuters*, March 5, 2021, <https://www.reuters.com/article/us-venezuela-politics-gold-idUSKCN2AX0QO>.

in the region. There is no evidence of synchronization between these countries except when it comes to diplomatic function. But the nature of 'Arab predatory' politics signals that the triangular relation is expanding deep into the South-South. The UAE Office of Public and Cultural Diplomacy signed an accord with the SICA (Central American Integration System) states.¹⁵⁰ The move is seen as a way for the UAE to garner greater influence in Central America. In the SICA states, UAE wants to counter Qatar in Panama but also garner help from Central American states to support Emirati interests in the UN Security Council during the 2022-2023 session.

Triangulation Is Strangulation: Consequences for Europe and the United States

The ongoing bifurcation of the global interests rests at the center of the dominant geopolitical crisis of this pandemic. Russia and China position themselves as natural alternatives to what they portray as a West in moral decay. The eastern-based geopolitical balance looks set to appeal to those, such as many Arab Gulf actors, that are seeking to acquire new mediator roles and partners. Peer-to-peer cooperation between regional actors and Russian and Chinese leaders is deepening and will contribute to the shaping of the future of the Middle East and North Africa.

The way the region is playing out is possibly with new alignments based on, for example, Arabism, as driven by both UAE and Saudi Arabia, with Egypt, Jordan, and Iraq as a major arch of a specific ecosystem of interconnectivity.¹⁵¹ This is part of a building up of electric grids, energy pipelines, and defense contracts among the three countries. Qatar is also involved in the defense aspects of this arrangement. Russia and China are poised in different ways to become vested in the emergence of such an Arabism driver. It helps to build closer national ties to an idea that fits into both Moscow's and Beijing's discourse. The strangulation of Western ideas in influencing the Arabism driver squeezes Western concepts outside of this sphere. The info-sphere becomes key in driving points about benefits of the East. The triangulation

150 "UAE Joins Central Asian Integration System," UAE Ministry of Foreign Affairs and International Cooperation, June 25, 2021, <https://www.mofaic.gov.ae/en/mediahub/news/2021/6/25/25-06-2021-uae-minister>.

151 Rafea Shareef Dhanoon, "Egyptian Regional Role in the Arabian Gulf During the Era of President Abdel Fattah El-Sisi," *Journal of College of Law for Legal and Political Sciences* 10:37 (June 2021), pp. 204-234, <https://www.iasj.net/iasj/article/206036>.

cuts off the oxygen necessary for Western driven human rights to influence the Gulf-driven Arabism agenda when these societies are facing the stress and strain of pandemic recovery. The process is more than integration among the triangle, and acts as an obstruction to European and American interests.

In this context Qatar deserves attention because of Doha's approach to bridging its divide between requirements of the region versus those abroad. Doha plays its diplomacy and investment with an acumen unique to Doha. Qatar is not part of the Arabism driver but sees itself as a cornerstone of support for the Palestinian cause in a completely different manner than Abu Dhabi and Israel. Qatar's role in helping in Syria is part of a larger Arab effort involving Oman and Saudi Arabia to bring Syria back into the Arab League. The prospect of the development of new interconnectivity from Qatar to the Mediterranean is becoming fashionable.

In sum, the triangular partners have moved to insulate themselves from Western blowback for bucking the established norms and challenging their political and economic systems. The United States is poised to lose its hegemonic status in the global economy as China is set to surpass it in economic strength and aspires to curb the power of the U.S. dollar. The triangular partners are now trying to sidestep the threat of sanctions and create an alternative global economic system. Western sanctions against Russia are targeting government officials, key business individuals, and companies. America's sanctions against China are primarily targeting leading Chinese tech companies and to a lesser extent energy and transportation companies over alleged illegal shipping on behalf of Iran and North Korea. The Arab angle, in contrast, has not yet been the focus of sanctions, thus providing the triangle with much needed political and financial oxygen. This fuels the emergence of a new political order that is driven by strategic flows underpinned by high-end technologies of the 4IR. The new U.S. strategic interim guidance on national security emphasizes that "our vital national interest compel the deepest connection to the Indo-Pacific, Europe, and the western hemisphere."¹⁵² But the formation of the triangular partnership constitutes a significant counter force to the United States. How Washington and the triangular partners will deal with this situation is going to have a major impact on global stability and prosperity.

152 *Interim National Security Strategic Guidance (Washington, DC: The White House, 2021)*, <https://www.whitehouse.gov/wp-content/uploads/2021/03/NSC-1v2.pdf>.



Global Supply Chain Management in a Fractured World: An Insider's Perspective

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*„There is a mysterious cycle in human events.
To some generations much is given.
Of other generations much is expected.
This generation...has a rendezvous with destiny.“*

U.S. President Franklin D. Roosevelt¹⁵³

When the novel coronavirus SARS-CoV-2 fully burst onto the global stage in January 2020, we could not have known the myriad ways in which this virus would fundamentally transform nations' and companies' relationships to all domains of supply chains. It was the first global pandemic to afflict a globalized economy, where sickness in the labor force of a factory here could produce catastrophic effects to a manufacturer there, half a world away. In those early days “we did not know what we did not know,” to paraphrase the aphorism, and moreover, the velocity with which social media is able to propagate rumor, truth, and lies had a disorienting effect on policy makers and corporate leaders.

This dynamic cuts against a foundational precept of modern supply chains: predictability. With the generational ascent of “lean manufacturing” in its myriad permutations, companies leaned into the financial benefits of keeping inventory levels low while using offshoring to minimize cost of goods in the near term by gambling that calamitous risk was not on the horizon. As the early forays into offshoring by Western manufacturers of the 1980s and 1990s began driving increasing profits for stockholders (but not necessarily resulting in productivity gains or increased reinvestment),¹⁵⁴ the concurrent rise of supporting maritime and air freight networks cemented those benefits into the new way of doing business. It is critical, then, to understand that this realignment was broadly driven by the United States' manic consumptive appetites and world-leading economy.

Under the protective wings of U.S. hegemony, individual nations' market access and companies' integration into transnational supply chains became the

¹⁵³ Franklin D. Roosevelt, “Acceptance Speech for the Renomination for the Presidency, Philadelphia, Pa.,” June 27, 1936, *The American Presidency Project*, <https://www.presidency.ucsb.edu/documents/acceptance-speech-for-the-renomination-for-the-presidency-philadelphia-pa>.

¹⁵⁴ William Mihalberg and Rudi von Armin, *U.S. Offshoring: Implications for Economic Growth and Income Distribution* (New York: Schwartz Center for Economic Policy Analysis, 2006), http://economicpolicyresearch.org/scepa/publications/workingpapers/2006/SCEPA_Working_Paper_2006-3.pdf.

dominant paradigm through which political and corporate decision-makers framed economic development. Former U.S. President Donald Trump profoundly challenged this established view while in office. Among other things, he reportedly castigated Germany as "...bad, very bad"¹⁵⁵ for its expansive market penetration in the U.S. auto market, a key driver of the German/U.S. trade imbalance. For his part, European Commission President Jean-Claude Juncker graciously deflected the reporting while reiterating the Commission's defensive stance of Germany.¹⁵⁶ The theme of market access between the two nations, and the European Union writ large, continued to be a primary economic talking point for President Trump throughout his term in office. Taken together with the even more pronounced, fiery rhetoric that frequently emanated from the Trump administration with regard to the People's Republic of China (PRC) – and the enduring implementation of aggressive tariffs targeted at a wide swath of imported goods from PRC – it is clear that President Trump viewed the United States' ballooning trade deficits to be reflective of economic and political mismanagement.

And to be sure, despite his bellicosity and the deleterious effects¹⁵⁷ the tariffs had on the United States' economic interests and political alliances, President Trump had in fact keyed in on an emergent realignment of the global geopolitical paradigm. Broadly speaking, this could be summarized as the slow-motion collapse of the Westphalian global order, along with the attendant financial systems and supply chains that shaped and sustained it. We might best characterize this "post-Westphalian" order as increasing disregard among nations relative to sovereign control of resources, a disconnect between individual self-interest and the "greater good," and a reordering of supply chains around decentralized production. Regardless, what Trump, his allies, and his adversaries alike could not have foreseen in 2017-2019 was the supercharging effect of the global COVID-19 pandemic on an incipient global reordering.

155 Peter Müller, „Trump in Brussels,” *Der Spiegel*, May 25, 2017, <https://www.spiegel.de/politik/ausland/donald-trump-bei-der-eu-die-deutschen-sind-boese-sehr-boese-a-1149282.html>.

156 Karen Gilchrist, "Trump Reportedly Calls Germans 'Very Bad!...', " *CBNC*, May 26, 2017, <https://www.cnn.com/2017/05/26/trump-calls-germans-very-bad-threatens-to-end-german-car-sales-reports.html>.

157 Aaron Flaen and Justin Pierce, *Disentangling the Effects of the 2018-2019 Tariffs on a Globally Connected U.S. Manufacturing Sector* (Washington, DC: Federal Reserve Board, 2019), <https://www.federalreserve.gov/econres/feds/files/2019086pap.pdf>.

From Chaos to Complexity

In his seminal book *The Black Swan*, economist Nassim Nicholas Taleb wrote:

A Black Swan [...] is an event with the following three attributes. First, it is an outlier, as it lies outside the realm of regular expectations, because nothing in the past can convincingly point to its possibility. Second, it carries an extreme impact. Third, in spite of its outlier status, human nature makes us concoct explanations for its occurrence after the fact, making it explainable and predictable.

Now, one cannot rightly categorize the COVID-19 pandemic as a black swan¹⁵⁸ event, despite its unexpected emergence and durable – arguably worsening – impact on the current geopolitical order and individual lives alike. Even a passably-informed layperson is likely aware that many governments experiment with the creation, destruction, modification, and sometimes weaponization of biological and chemical materials. Likewise, the same layperson would most certainly know that there are vicious and deadly natural organisms capable of making unexpected and devastating zoonotic leaps to humans, such as we have seen many times throughout human history. For this reason alone, the COVID-19 pandemic does not meet the threshold of the first attribute (unexpectedness) of a black swan event, despite its fearsome shadow darkening nearly all people's daily lives.

Yet as the pandemic today drags well into its second year, and downshifts somewhat gradually from what a Cynefin practitioner might call "chaos" to "complexity,"¹⁵⁹ we have not yet seen the re-emergence of order expected by many people. In fact, where the pandemic once carried an imminent threat to human life, it now imperils the institutions and critical supply chains¹⁶⁰ that have become the superstructure of modern civilization. Indeed, choices and strategies employed by individual nations in a hyperconnected world should have rationally been expected to have compounding nth-order effects on many other nations, industries, and individuals. Returning for a moment to the frame of Cynefin, the rapid and chaotic emergence of COVID-19 required national leaders and their sup-

¹⁵⁸ Nassim Nicholas Taleb, *The Black Swan* (New York: Random House, 2009), pp. xvii–xviii.

¹⁵⁹ David J. Snowden and Mary E. Boone, "A Leader's Framework for Decision Making," *Harvard Business Review* (November 2007), <https://hbr.org/2007/11/a-leaders-framework-for-decision-making>.

¹⁶⁰ Rhys Thomas, "Intel: Semiconductor Supply Chain Issues Could Last Years," *Supply Chain Digital*, June 2, 2021, <https://supplychaindigital.com/procurement/intel-semiconductor-supply-chain-issues-could-last-years>.

porting bureaucratic apparatuses to react in synchronicity – quite simply, an impossible task in a politicized world already on the cusp of an epochal shift in the geopolitical landscape.

Categorizing this particular moment in civilizational development proves difficult, then. We have seen global economic disruptions before, yet this one is different. We have had two world wars in the past century, yet the developing great power conflict has thus far been conducted below the threshold of open warfare. We have even experienced a similar uncertainty and tension of a bipolar “cold war” that ended as recently as 30 years ago, yet the “omni-domain” nature of this current moment feels dramatically different and even existential for many players on the global stage. And so we must grasp this dilemma at both ends – we find our interdependent system roiled by external forces such as the SARS-CoV-2 virus and internal forces such as commodity scarcity and decisions on flow of people and goods impacting nations’ economic and political stability, all with no real previous “case studies” in global affairs to reference. With an understanding now established that this emergent paradigm is at once familiar and unique, we must first quantify what it is before we can dig into what it will be.

The Nova Swan

In the spirit of recognizing how pervasive and open access to social media can drive novel ideation, an anonymous Twitter account called WorldEdgeDG delivered perhaps the most impactful and understandable narrative frame for comprehending the current moment – the “Nova Swan,”¹⁶¹ described thusly:

A continuous cascade effect derived from a prior event, usually a black swan. It usually dwarfs the black swan event in all metrics. Term comes from Near-Earth supernova.

Although it has previously been established here that COVID-19 is not a textbook “black swan” event, the utility of the Nova Swan device comes from recognition of cascade effects. Let us now expand on this theme, as it is the key that unlocks understanding of our present and future states.

161 @WorldEdgeDG, “Nova Swan,” August 5, 2020, <https://twitter.com/WorldEdgeDG/status/129117353888585218>.

In 1987, three physicists released a paper called "Self-organized criticality: An explanation of the $1/f$ noise."¹⁶² The concept of self-organized criticality (SOC) has since become a highly-evolved subdiscipline of many domains of practical and theoretical mathematics and science, with numerous branching paths of specific inquiry. For purposes of maintaining tight focus on the future state of global supply chains, however, we will use this generalized definition:

Self-organized criticality is a property of dynamic, complex systems where the latent potential for dramatic collapse and subsequent re-order of the system is converted to action by a stimulus triggering one or more cascade effects.

Bak et. al. had illustrated this using the now-familiar model of a sandpile.¹⁶³ A single grain of sand added to the pile only has a quantifiable impact on the grains of sand impacted by the new grain's miniscule energy transfer. But with each new grain of sand added to the pile, the possibility for that specific grain to trigger a release of the system's potential energy increases in a non-linear fashion. That is to say, it is not able to be consistently modeled mathematically which specific grain will cause a localized cascade of sand that builds momentum as it triggers new cascades in the pile and subsumes the energy of the collapsing system. The best we might do is to accept that as more inputs are added to the system, both the likelihood and scale of collapse increases, the longer the system endures without total collapse.

It is hardwired into dynamic natural systems – of which humans are very much included – to mitigate a tendency towards crippling complexity and inertia by reaching a point of criticality that becomes a failure cascade. In this manner a period of chaos eventually concludes with a period of stability and certainty. The mistake most economic and political practitioners make, however, is in assuming they can identify the trigger, severity, and duration of a given collapse. From this mistake frequently arises well-intentioned but misguided stratagems and policies by supranational, national, and industrial leaders. And when any one of those inputs destabilizes the system enough, the resulting negative conceptual spiral of decisions mismatched to current data can disorient even the most level-headed leader.

¹⁶² Per Bak et. al., "Self-Organized Criticality: An Explanation of the $1/f$ Noise," *Physical Review Letters* 59:4 (July 1987), pp. 381-384, <https://journals.aps.org/prl/abstract/10.1103/PhysRevLett.59.381>.

¹⁶³ Jennifer Quellette, "Sand Pile Model of the Mind Grows in Popularity," *Scientific American*, April 7, 2014, <https://www.scientificamerican.com/article/sand-pile-model-of-the-mind-grows-in-popularity>.

This detour through certain lines of intellectual inquiry is necessary to properly contextualize the following sections, and move our mental models away from "nationalist/globalist," "conservative/liberal," or "capitalist/socialist/communist." At least for the foreseeable future, we cannot reasonably expect a return to normal, or even a modicum of geoeconomic stability as we had become accustomed to during Pax Americana. The age ahead will be defined by sweeping changes in how individuals, the private sector, and nation-states view their responsibilities and actions by and among one another. From these factors greater risk and opportunity alike will emerge at all scales of civilization. Finally, this: When a Nova Swan spreads its wings, it is the leader or entity who is willing to fail forward and rapidly reorient based on new data that will thrive during the days of change.

The Map of Human Intent

It may be reasonably said that logistics is a map of human intent. In order for humans at individual or collective scale to meet their needs, certain mechanisms – logistics – must exist to enable the production and movement of the goods that will fulfill the need. The pattern of assets used, routes traversed, geographical and physical constraints, and goods carried will inevitably reveal the intent and the needs of the stakeholders. From this heuristic, we can shake off the disorienting effects of the ongoing Nova Swan, cut through charged political and corporate rhetoric, and make a clear-eyed assessment of the tangible factors shaping the future, today. Broadly speaking, the next cycle of geopolitical realignment will be defined by three factors:

1. Bifurcation of geoeconomic systems with competition characterized by "gray zone"¹⁶⁴ conflict: nation-states and supranational entities weaponizing the global connective tissue of communications and commerce to achieve institutional aims
2. Scarcity of essential resources: conflict between and among state and non-state actors for certain critical minerals, resources, and means of production
3. Emergence of parallel institutions: movement by individuals and nations away from hyper-globalized supply chains towards self-sufficiency, even as nations begin to define their strategies in relation to China and the United States

¹⁶⁴ Gray zone actions encompass activities taken to escalate tension and favorably alter the tactical and strategic environments below the threshold of open conflict.

As we explore each of these factors in turn, bear in mind the common thread that runs through each: the practical exploitation of logistics assets to achieve a specific end state.

Everything A Weapon

For many decades, the PRC has in ways large and small emphasized the integration of commercial and military objectives to achieve a synthesis of interests, wherein advancements in industries such as materials science, electronics, or shipbuilding are encouraged first as a means of advancing PRC's military interests rather than the commercial entity's. In recent decades, this practice has been generally known as Military-Civil Fusion (MCF). Though it was quietly followed under the leadership of Deng Xiaoping during the 1980s, the doctrine accelerated under Jiang Zemin and Hu Jintao in the late 1990s and 2000s and has fully matured into a cohesive sociopolitical directive since Xi Jinping succeeded Hu as the supreme leader of PRC in 2012.

The maturation of MCF has been a primary driver in PRC's ascendance in numerous critical industrial categories. Shipbuilding, a strength of China in the pre-Westphalian era, is one such example. From its inception in 1982, the China State Shipbuilding Corporation (CSSC) was intended to be a commercial enterprise in one sense (able to raise capital in the markets, submission to international quality standards) while preserving its mandate to enhance MCF. This hybridization of capitalist and communist structures resulted in explosive growth, with China's shipbuilding output (measured by gross weight tonnage) doubling between 1980 and 1990,¹⁶⁵ as demand for small- to medium-size commercial vessels flowed in. Concurrently, the twin shipbuilding powers of South Korea and Japan maintained dominance in the larger tonnage ranges.

However, by 2017, China had become the top shipbuilder in the world by tonnage, with particular dominance in bulk carriers,¹⁶⁶ at more than 60% market share. Related to this growth, China's military has reaped significant benefits from this commercial activity. Advances in metallurgy, propulsion system design, and electronic components – much of which came from foreign-origin

¹⁶⁵ Gabriel Collins and Michael C. Grubb, *A Comprehensive Survey of China's Dynamic Shipbuilding Industry* (Annapolis: U.S. Naval War College, 2008), <https://digital-commons.usnwc.edu/cgi/viewcontent.cgi?article=1000&context=cmsi-red-books>.

¹⁶⁶ Catherine Lechevalier, "Blueprint to Success," *CKGSB Knowledge*, April 16, 2020, <https://english.ckgsb.edu.cn/knowledges/blueprint-success-shipbuilding-industry/>.

technical data and cooperation – have paid handsome dividends in the rapid modernization and expansion of the People's Liberation Army Navy (PLAN). As a result, "Chinese shipbuilders have become more efficient, better skilled, and more sophisticated in designing and building ships for the PLAN."¹⁶⁷

Today, the PLAN is the world's largest navy by ship count, with an estimated 360 battle force vessels fielded at the end of 2020. Comparatively, the U.S. Navy has 297 vessels. The trends are diverging as well, with the PLAN projected to have 425 vessels by 2030.¹⁶⁸ Yet, it is not just the quantity and breadth of PLAN platforms being developed and built in China's shipyards. China's relentless focus on Military-Civil Fusion means that its vast fishing vessels, ferries, carriers, and specialty ships have for years been designed to not only be employed as productive commercial assets but as immediately interoperable logistics assets in support of PLA operational requirements.

Two recent examples illustrate this capability: use of a massive commercial semi-submersible heavy lift vessel as an expedient military helicopter landing base,¹⁶⁹ and conversion of civilian vehicle ferries to clandestine amphibious landing ships for mechanized ground forces.¹⁷⁰ Further, the sheer scope of vessels registered in China (and thus subordinate to MCF requirements) or commercial ships crewed by Chinese nationals has a disorienting effect on an opposing military strategist who might attempt to achieve a clear operating picture.

We must then extrapolate two key points from this data:¹⁷¹ First, China's combined naval and commercial fleets makes it the maritime hegemon in Eurasian waters, and second, China's ability to mount rapid, asymmetric attacks on adversaries by use of commercial assets has a subtly chilling and destabilizing effect on trade proportionate to China's increasing assertiveness in territorial claims and foreign direct investment. Historically, private sector capital flows into commerce, whereas government revenues are invested into national

167 Evan S. Medeiros et. al., *China's Shipbuilding Industry. Civilian Contributions to Current Naval-Modernization Efforts* (Santa Monica: RAND, 2004).

168 *China Naval Modernization: Implications for U.S. Navy Capabilities – Background and Issues for Congress* (Washington, D.C.: Congressional Research Services, 2021), <https://crsreports.congress.gov/product/pdf/RL/RL33153/252>.

169 John Dotson, "Semi-Submersible Heavy Lift Vessels. A New 'Maritime Relay Platform' for PLA Cross-Strait Operations?" *The Jamestown Foundation*, August 31, 2020, <https://jamestown.org/program/semi-submersible-heavy-lift-vessels-a-new-maritime-relay-platform-for-pla-cross-strait-operations/>.

170 Conor Kennedy, "Ramping the Strait: Quick and Dirty Solutions to Boost Amphibious Lift," *China Brief* 21:14 (July 16, 2021), <https://jamestown.org/program/semi-submersible-heavy-lift-vessels-a-new-maritime-relay-platform-for-pla-cross-strait-operations/>.

171 See also the chapters by Björn Fägersten and Tim Rühlig as well as Alicia Garcia-Herrero in this volume.

security-adjacent programs and assets. China's deliberate weaponization of commercial assets thus inextricably imperils the global financial system – and all participant nations – in the eventuality of great power tensions between a U.S.-led sphere which broadly subscribes to consensus-based “rule of law” and a China-led sphere that enforces its will through authoritarian drive and carrot/stick stratagems.

Moreover, it is essential to a hyper-connected globalized economic structure that information be able to freely flow to and from all nodes. This generates clarity, reduces error and miscommunication that harms supply chains, and promotes a certain comity that bridges ideological and ethnic barriers. Where once we were limited by time and distance in ability to communicate, pervasive modern telecommunications infrastructure enables us to take in real-time data and respond quickly to dynamic circumstances. Ideas and concepts can move instantaneously, networking isolated or disparate groups of people with shared interests, or be a force multiplier for smaller entities to shape or manipulate larger entities' responses. If information is power, then the ability to manipulate the digital and physical infrastructure upon which information is carried is deterministic for nations, companies, and individuals. Thus, a major player in global affairs employing blocking or segregation of the free flow of information between stakeholders¹⁷² should be considered a gray zone tactic, with knock-on effects to be shortly addressed.

Indeed, it is China's (and her allies') simultaneous use of gray zone tactics and its dominance of interconnected supply chains with the West that has largely shaped Western leaders' response to the COVID-19 crisis. Ambiguity and relentless tempo combine to incept strategic uncertainty in all domains. Further, when many major corporations have the explicit mandate to preserve and enhance stockholder returns, it can undermine geopolitical efforts to bring equilibrium to the information and economic environments in the wake of hostile or selfish actions by a major actor. What is a CEO to do when the firm's primary production units are in China, but his customer base is in the United States, and there is both a literal and metaphorical ocean between the interests of the stakeholders? China's answer is that the corporation ultimately subordinates profit motive to national interest. In the West, it might be fair to say it is the other way around, given the importance attached by politicians to maintaining robust economies and thriving private sectors. This

172 Catalin Cimpanu, “China's Great Firewall is Blocking around 311k Domains, 41k by Accident,” *The Record*, July 11, 2021, <https://therecord.media/chinas-great-firewall-is-blocking-around-311k-domains-41k-by-accident/>.

fundamental ideological difference creates a decisional mismatch for the two spheres, impacting supply chain investments on a decades-long scale.

Minerals, Resources, and the Zero-Sum Game

One of the foundational premises of the Western-led economic order is that mutual self-interest and economic cooperation can obviate or at least mitigate most major conflicts. In times of geopolitical equilibrium, this could be mainly seen to be true. But, as Lenin famously stated, "There are decades where nothing happens; and there are weeks where decades happen." This Nova Swan, the emergent catastrophic failure cascade of the old global order, is one such time period where the rate of change has accelerated to breakneck pace.

Specific to this paper, a domain where this effect is observed is that of advancements in manufacturing and engineering, achievable through breakthroughs in advanced materials science. As one example, massive machines were not too long ago required to cut, shape, and modify steel for industrial uses. This required enormous capital investment and a measure of certainty, concentrating economic production into fewer nodes. Scaling the fabrication process down to precision scale applications meant wastage of material, additional investment, and further specialization of stakeholders in the supply chain. Today, a (well-heeled) hobbyist working from his garage can design, prototype, refine, and produce a precision-tolerance finished steel product using a computer and a \$100,000 metal 3D printer.¹⁷³ We can reasonably expect the capital requirements of equipment and raw material to continue to scale down as adoption of the technology continues, and consumer desire to democratize various means of production increases in response to the rapid shifts in global supply chains.

Simultaneous to the incipient revolution in small-scale manufacturing capabilities are advancements made by researchers and companies all over the world in developing new material structures with incredible capabilities,¹⁷⁴ metal superalloys that can dramatically increase performance of equip-

173 "The Price of Perfection," *All3DP*, June 17, 2020, <https://all3dp.com/2/how-much-does-a-metal-3d-printer-cost>.

174 "Harvard Scientists Trilayer Graphene Breakthrough Opens the Door for High Temperature Superconductors," *SciTechDaily*, February 4, 2021, <https://scitechdaily.com/harvard-scientists-trilayer-graphene-breakthrough-opens-the-door-for-high-temperature-superconductors>.

ment in extreme conditions,¹⁷⁵ and detection of potential new deposits of hard-to-find raw materials.¹⁷⁶ Given the complexity of these new materials and methods, they can mainly be accessed and exploited only by nations or private interests that have extremely deep pockets, adding a new dimension to the global supply chain balance of power. This dimension is geoeconomic convergence, where private actors can achieve parity (or superiority) with nation-states by gaining first-mover advantage on a class of resources that is considered essential to the global balance of power.

Relatedly, the climate change-driven urgency of global stakeholders to create new infrastructure for mobility, power generation and delivery, and manufacturing will have a strong shaping effect on nations and private interests who possess control of key resource bases. The West has reacted slowly to addressing this near-term future state, with China in particular having built a near-monopoly on many critical materials that are required for manufacturing of batteries, manufacturing of renewable energy infrastructure, and legacy materials such as aluminum.¹⁷⁷ The ability of Western nations to increase agility and resiliency in their individual and cooperative critical supply chains is inexorably tied to the outcome of the new materials and minerals arms race.¹⁷⁸

Individual Decisions, At Scale

In economies such as the United States and many European countries that are characterized by a high proportion of consumer spending on goods and services, individuals are typically able to avail themselves of numerous options to satisfy a given want or need. This choice is enabled by economic structures that leverage global sourcing and supply chains to find the most competitively-priced components and manufacturers for a product. But as we have seen, consumers had largely grown to take choice for granted, right up until the moment pandemic-induced lockdowns, stimulus, and shifts in consumer spending from services to hard goods began to create supply

175 Li yu-hua et. al., "Application of Lightweight Magnesium Alloy in Satellite Antenna Products," *Journal of Physics: Conference Series* 1885/052001, p. 5, <https://iopscience.iop.org/article/10.1088/1742-6596/1885/5/052001>.

176 Jacob Gronholt-Pedersen, "Billionaire-Backed Mining Firm to Seek Electric Vehicle Metals in Greenland," *Reuters*, August 10, 2021, <https://www.reuters.com/business/billionaire-backed-mining-firm-seek-electric-vehicle-metals-greenland-2021-08-09>.

177 Nedal T. Nasser, Elisa Alonso, and Jamie L. Brainard, *Investigation of U.S. Foreign Reliance on Critical Minerals* (Washington, D.C.: U.S. Geological Survey, 2020), <https://pubs.usgs.gov/of/2020/1127/ofr20201127.pdf>.

178 See also the chapter by Elisabeth Köstinger in this volume.

chain bottlenecks across logistics networks accustomed to operating under razor-thin margins and precision timing.

As a result, many individuals have a dawning sense that whatever comes next for our civilization, it will not be as it once was. Deeply-rooted individual faith in social institutions is hard to shake, but once broken, has a demoralizing effect that gives way to a determination to sever the ties between those institutions and one's personal sense of security. This is the motive force driving a convergence between two broad demographics: those who feel newly-abandoned by "the system," and those who for a range of reasons had previously decided to "opt out." The challenge for this growing collective of individuals seeking to secure their personal supply chains is to cooperatively implement and effectively operate a scaled-down version of the centralized systems that put food on the shelves, clothes on the rack, and power in the outlets.

Two primary hurdles exist for this class of people: ability to scale beneficial technologies and processes in a decentralized manner, and regulatory capture by the centralized entities and nations who have a vested interest in locking consumers into walled gardens. One example is that of robust "food safety" regulatory apparatuses in many countries making it financially burdensome to produce and sell small quantities of perishable foodstuffs, though common sense would tell us that the average person so engaged in peer-to-peer commerce would have a greater attention to best practices due to the interpersonal connection. Contrary to interpersonal impact, a grocery chain has little moral or ethical connection to its consumers' health and happiness; food is produced and sold in a certain manner because in expansive legalistic paradigms, there frequently emerges a symbiotic interest between regulatory regimes and profit motive that leads insular and self-interested decision making within the captured regulatory apparatus.

The undermining of cultural faith in institutions is a dangerous development for societies grounded in rule of law, where the acknowledgement, the expectation, of fair play underpins the cooperative participation of all stakeholders. As we accelerate into further Nova Swan effects, the faint rumblings of individual dissatisfaction with the decisions of elected officials and corporate leaders will become an earthquake that topples numerous entities and institutions once assumed to be durable and secure.

The Terrain of Human Action

In pulling the disparate threads of this paper together, we now arrive at a clear state of play for the coming decades – rapid decoupling of supply chains between adversarial nations, globalization scaling down to regionalization and localism, and omni-domain gray zone conflict where competing interests collide over shrinking or limited physical resources (critical minerals, arable land, water). If this author is correct, what can be done to increase supply chain resiliency? What constraints can be expected? Where can public and private institutions find vectors of cooperation to reinforce or build new supply chain models that increase human health and happiness?

Science Fiction Meets Logistical Reality

Early in the COVID-19 pandemic, a worrisome thought began to preoccupy the minds of supply chain strategists and operations personnel worldwide: What if there is freight to move, but not enough healthy personnel to work the ports, run warehouses, and drive trucks? And though ongoing congestion and labor-shortage issues at all nodes in global supply chains continue to hinder operations, we mercifully did not have to find out for quite some time what would happen if a port shut down due to COVID-19 cases. In mid-2021, however, two of China's busiest ports were impacted by quarantine measures designed to curb a new wave of COVID-19 infections. The full shutdown at Yantian, and the closure of the Meishan terminal at Ningbo, resulted in a storm of cargo backup, financial harm, and vessel delays throughout the tightly interlocked maritime supply chain.

Prior to the pandemic, numerous companies had been conducting research into various applications for automation, machine learning, and artificial intelligence in supply chain environments – some examples include demand forecasting, real-time scheduling and production management,¹⁷⁹ and shipment execution support for freight forwarders.¹⁸⁰ Multiple ports worldwide have already gone fully or partially autonomous, reducing longshoremen headcount on dock (and the potential for human error, sickness, or deliberate

179 Knut Aliche et. al., "Succeeding in the AI Supply Chain Revolution," McKinsey & Company, April 31, 2021, <https://www.mckinsey.com/industries/metals-and-mining/our-insights/succeeding-in-the-ai-supply-chain-revolution>.

180 Brian Aoaeh, "How AI, Machine Learning Are Streamlining Workflows in Freight Forwarding, Customs Brokerage," Freightwaves.com, October 1, 2020, <https://www.freightwaves.com/news/commentary-how-ai-machine-learning-are-streamlining-workflows-in-freight-forwarding-customs-brokerage>.

interruption of business) and increasing operating efficiency for the port, albeit at tremendous capital investment.¹⁸¹

Further advancements in artificial intelligence are being explored in the domain of ocean vessel navigation, with South Korean industrial conglomerate Hyundai Heavy Industries announcing in mid-2021 that the company intended to conduct the first-ever transoceanic voyage of a fully autonomous ship, though a fully-manned crew will be aboard in the event of emergencies.¹⁸² Similar efforts are also underway for self-driving semi trucks. Although there are many significant hurdles to pervasive adoption of the technology – remote hijack and weaponization, breakdown, failure of telemetry and communications hardware, to name a few – it is clear that the global titans of logistics and supply chain are fully intending to pursue the limits of reduced-manpower systems and artificial intelligence.¹⁸³

Despite the obvious benefits of disintermediating humans from operational chokepoints in the supply chain, we must also reflect on the second-order factor at play. Not all nations will have access to such resources, just as many ports cannot handle the deep drafts of Ultra-Large Container Carriers and other megaships. Major ports that are able to berth the largest ships and support high-speed operations on dock will see further demand, with the industry continuing to bifurcate into an oligopoly of carriers and ports controlling the majority of transoceanic freight flows, with smaller ships (called “feeder vessels”) carrying cargo from the transshipment hubs to and from smaller ports in the region. Though it may seem counterintuitive, it is possible – likely even – that it is those smaller ports that will experience fewer disruptions and enjoy higher profits over the next two decades. As we will no doubt continue to see pervasive cyber attacks (whether ransomware-focused or “gray zone”) on the whole ecosystem of assets that comprise global supply chains, the risk of significant economic impact due to a cyber-hostage situation of the ports at Rotterdam, Long Beach, or Shanghai will increase with ratcheting up of tensions in geoeconomic conflict.

181 Loes Witschg, “Rotterdam is Building the Most Automated Port in the World,” *Wired*, July 10, 2019, <https://www.wired.co.uk/article/rotterdam-port-ships-automation>.

182 “Hyundai Plans First Ocean-Going Autonomous Ship Voyage by Year’s End,” *The Maritime Executive*, July 27, 2021, <https://www.maritime-executive.com/article/hyundai-plans-first-ocean-going-autonomous-ship-voyage-by-year-s-end>.

183 See also the chapter by Theodore Karasik in this volume.

Scale Down and Out, Not Up

Even more so than focusing on splashy breakthroughs in autonomous technology, it should be the fundamental goal of a national government to firmly secure the supply chains that service the fundamental domains of human need for its citizens. These domains are what this author calls “last dollar commodities” – food, water, and energy resources. In other words, if a government is facing an existential threat, it will expend all financial resources necessary to prevent food and/or water riots or energy shortages. Given the dramatic shifts in global weather patterns driven by the confluence of reduced solar activity (with a non-zero chance of this being a new Maunder Minimum¹⁸⁴) and some level of anthropogenic climate change, existing crop and animal protein production supply chains will see regionalized impacts varying from moderate to severe. Public-private cooperation on development and scaling of managed-climate food production infrastructure is critical, with an emphasis on decentralized solutions that allow individuals and communities to co-locate their food production and access as close to the home as possible. Most importantly, the availability of naturally-grown vegetable and animal protein choices should be expanded, as highly-processed and engineered foods introduce chokepoints and fragility into food supply chains due to the necessity of centralized production, high capital requirements, and lengthy logistics networks.

Similarly, investment at all levels of society into more efficient water collection, storage, sanitation, and re-use should be a top priority for residential, commercial, and municipal property owners alike. Solving the power-use and byproduct gap for desalination¹⁸⁵ will help coastal regions increase water security, an important step as an estimated 40% of the global population lives 100 kilometers or less from a saltwater coastline.¹⁸⁶ An eventual slowdown in home newbuilds will generate the opportunity for plumbers and other contractors to replace aging residential and commercial water infrastructure in communities, with costs to property owners mitigated (or eliminated) by municipal and national grant programs.

¹⁸⁴ Valentina Zharkova, “Modern Grand Solar Minimum Will Lead to Terrestrial Cooling,” *Temperature* 7:3 (August 4, 2020), pp. 217–222, <https://www.tandfonline.com/doi/full/10.1080/23328940.2020.1796243>.

¹⁸⁵ Jim Robbins, “As Water Scarcity Increases, Desalination Plants Are on the Rise,” *Yale Environment* 360, June 11, 2019, <https://e360.yale.edu/features/as-water-scarcity-increases-desalination-plants-are-on-the-rise>.

¹⁸⁶ “The Ocean Conference. People and Oceans, 2017” (New York: United Nations, 2017), <https://www.un.org/sustainabledevelopment/wp-content/uploads/2017/05/Ocean-fact-sheet-package.pdf>.

Finally, it is no secret that nations and citizens will realize significant long-term benefit through investment into the democratization of renewable energy production, especially at point of use. Globally, the vast majority of power grids are fragile, with aging power plants and easily-disrupted transmission networks.¹⁸⁷ Given the negative impacts to the environment from current-generation manufacturing and end-of-life cycle processes,¹⁸⁸ and the limited availability of numerous raw materials, commercialization of promising renewable energy technologies can proactively deconflict energy supply chains while reducing dependence on legacy hub-and-spoke energy delivery networks.

That Which Cannot Be Traded For, Will Be Fought For

Although unrestrained, competitive interdependence has been exposed as highly fragile, nations and companies should resist the impulse to rush headlong into stubborn isolationism in response. Instead, rational and limited cooperation between nation-states and private sector actors towards specific, mutually beneficial outcomes should be the goal. The path forward is to first understand the relative positions of the counterparties – where a dramatic difference in economic capacity or GDP is present, the financial benefits should necessarily be weighted in favor of the disadvantaged or smaller party. In addition, if a specific resource or product is the attraction point for potential cooperation, every effort should be made by all stakeholders to expand the circle of economic impact inside the country or territory. Not only is this an ethical approach that allows the owner of the desirable goods to maximize the positive impact of possession, but it shortens the chain from raw material/unfinished product to end user by eliminating additional transit and handling.

Despite the above, the United States and its allies must also acknowledge that robust international trade of some significant scale will still be required to maintain a healthy economy. And to whatever extent American, European, and Anglosphere-oriented companies seek to maintain their stake in China's rise or protect long-established supply chains there, China has made the first move towards severance and bifurcation. China has been preparing for

187 David Stringer and Heesu Lee, "Why Global Power Grids Are Still Vulnerable to Cyber Attacks," Bloomberg, 3 March 2021, <https://www.bloomberg.com/news/articles/2021-03-03/why-global-power-grids-are-still-so-vulnerable-to-cyber-attacks>.

188 Cabe Atwell, "Top Negative Impacts Solar Panels Have on Environment," EE Times, April 4, 2019, <https://www.eetimes.com/top-negative-impacts-solar-panels-have-on-environment>.

decades to assert itself as a global hegemon, the recognition of which has caused furrowed-brow speculation about the United States (and the West at large) becoming embroiled in a “Thucydides Trap,”¹⁸⁹ wherein an established power’s fear of a rising power provoking conflict inevitably leads to a conflict. The United States cannot rip out China’s pervasive geoeconomic influence root and stem after decades of investment into hard infrastructure by Western entities. Further, the United States and Western nations will not be able to completely undo – or even stop – China’s extremely capable cyber-espionage units from hacking, stealing, or meddling with sensitive technological data even from within supposedly secure or air-gapped systems. Thus “gray zone” tactics and numerous other asymmetric tools of commercial and geostrategic conflict will define the shape of the coming decade of great power conflict, even as the United States and many other nations attempt to chart a more nationalistic, self-sufficient supply chain path.

Conclusion

Public and private entities worldwide stand at the precipice of an epochal moment. At the geoeconomic level, a choice must soon be made to join the U.S.-led sphere of economic cooperation, the China-led sphere, or opt out to whatever extent is feasible. In this manner, it is analogous to the U.S.-Soviet Cold War of the latter half of the 20th century. Yet, it is altogether different, as the two great powers are economically entangled such that a violent disassociation would pose an existential threat to both. The new path that must be charted for those who reject authoritarianism is one of leveraging public-sector resources and private-sector agility alike to empower citizens to live as freer and more prosperous people. The old dialectic of protectionism vice free markets is gone. By following the path of resolute commitment to common values, harnessing the opportunities of this interregnum between “Old” and “New” Normal, and designing agile supply chains that leverage the natural behaviors of humans at individual and social scale, we will yet find ourselves more optimistic about the future than ever before.

189 Graham Allison, “The Thucydides Trap,” *Foreign Policy*, June 9, 2017, <https://foreignpolicy.com/2017/06/09/the-thucydides-trap>.

10

Infrastructure Development and Goeconomic Competition: A Framework for Analysis

Björn Fägersten and Tim Rühlig

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The end of the Cold War ushered in a new era of liberal globalization. A liberal order had already been established by the United States and its allies at the end of World War II, but its liberalism was restricted. At the end of the Cold War, this order was radically transformed. Among other trends, markets – which had been a tool of power before 1989 using export controls and heavy regulatory burdens – were now freed up, and the state and corporations to a large extent drifted apart as a consequence.

Infrastructure was largely seen as a public good that enabled globalization, international trade, and connectivity. As the backbone of economic development, infrastructure creates mobility as well as social and economic inclusion. According to the International Monetary Fund, an increase of 1% of gross domestic product (GDP) spent on infrastructure investment raises output by 0.4% in the same year and 1.5% four years after the increase.¹⁹⁰ In the long run, such infrastructure investment can boost GDP by no less than 20%.¹⁹¹ When considered in a global context, countries with better infrastructure connections to global networks of different kinds of flows such as goods or data increase their growth by around 40%.¹⁹² It was based on these economic benefits that infrastructure investment was perceived as facilitating functioning markets and trade, and competition as promoting prosperity across the globe.

More recently, this focus on economic benefits has been supplemented by consideration of how best to utilize infrastructure for political influence. This does not mean that Western political actors saw no political role for the market in the post-Cold War era. On the contrary, two overarching bets guided Western thinking in the era of liberal globalization, and markets had a key role in both. The first bet was on interdependence and the benefits it was hoped this would bring. This informed decades of research on how cooperation spurs further cooperation and increases levels of interconnectedness, thereby increasing the costs of military conflict.¹⁹³ The second bet was that

190 Abdul Abida, David Furceri, and Petita Topalova, "IMF Survey: The Time is Right for an Infrastructure Push," *International Monetary Fund*, 30 September 2014, <https://www.imf.org/en/News/Articles/2015/09/28/04/53/sores093014a>.

191 Aaron Bielenberg, James William, and Jonathan Woetzel, "Four Ways Governments Can Get the Most Out of their Infrastructure Projects," *McKinsey*, January 6, 2020, <https://www.mckinsey.com/industries/public-and-social-sector/our-insights/four-ways-governments-can-get-the-most-out-of-their-infrastructure-projects>.

192 James Manyika et. al., *Global Flows in a Digital Age* (New York: McKinsey, 2014), <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/global-flows-in-a-digital-age>.

193 See: Ernest Haas, *Uniting Of Europe: Political, Social, and Economic Forces, 1950–1957* (Notre Dame: University of Notre Dame Press, 1958), <https://curate.nd.edu/show/r207tm7440r>; Robert O. Keohane and Joseph S. Nye Jr., "Power and Interdependence," *Survival* 15:4 (July 1973), pp. 158–165, <https://www.tandfonline.com/doi/abs/10.1080/00396337308441409>.

actors engaged in globalization would eventually converge towards liberal democracy.¹⁹⁴

This era of unfettered globalization is now over, and Western states have largely given up on the bets they placed on it. The timing and cause can be debated, but the logic of conflict and zero-sum rivalry has made a comeback. Important reasons for this are the end of the unilateral U.S. order and the rise of China as a systemic rival. The fact that China's rise in recent decades has taken place without the regime convergence that was hoped for has had two effects. First, the emerging multipolar order and great power rivalry now have explicitly ideological characteristics and competing systems of governance and development.¹⁹⁵ Second, the West, noting that three decades of liberal globalization has not resulted in any regime convergence, is now less willing to accept short-term costs if it cannot be guaranteed that the long-term trend is in its favor.

For the development of infrastructure, this means that none of the major powers is focusing on long-term benefits alone, and considerations of short- and medium-term political implications have come to the fore. Consider the case of infrastructure investments. Despite annual global expenditure on new infrastructure of as much as US\$2.5trn, there is an estimated annual ongoing investment gap of around US\$1.2trn.¹⁹⁶ The major powers are cooperating to tackle this gap, but consideration of the implications for power accompanies their infrastructure policy and makes them skeptical about the investments of their adversaries.

Most prominent is the case of China's Belt and Road Initiative (BRI). According to the Refinitiv database, the People's Republic of China (PRC) has invested US\$3.7trn in 2,600 BRI infrastructure projects.¹⁹⁷ Spanning maritime, terrestrial, and digital infrastructure, the BRI is not simply increasing connectivity in Asia, Africa, Europe and Latin America; it is also a vehicle for Chinese power projection.¹⁹⁸ Western states react accordingly. A recent example is the 2021 G7 summit in Cornwall, where U.S. President Biden suggested the establish-

¹⁹⁴ Francis Fukuyama, *The End of History and the Last Man* (New York: The Free Press, 1992).

¹⁹⁵ See also the chapter by Heiko Borchert in this volume.

¹⁹⁶ Bielenberg/William/Woetzel, "Four Ways Governments Can Get the Most Out of Their Infrastructure Projects."

¹⁹⁷ Jarret Renshaw, "Biden says he suggested to UK's Johnson a plan to rival China's Belt and Road," *Reuters*, March 26, 2021, <https://www.reuters.com/article/us-usa-britain-biden-china-idUSKBN2BI32M>.

¹⁹⁸ Jennifer Hillman and David Sacks, "How Should the United States Compete with China's Belt and Road Initiative?" *Council on Foreign Relations*, March 23, 2021, <https://www.cfr.org/blog/how-should-united-states-compete-chinas-belt-and-road-initiative>.

ment of an alternative to the BRI initiative by democratic states. The logic of competition with China underlying this idea can hardly be denied. Already in November 2019, the United States alongside Japan and Australia founded the Blue Dot Network, a certification scheme for “quality infrastructure” to facilitate private sector investment.¹⁹⁹

The European Union (EU) for its part has developed a Joint Communication on “Connecting Europe and Asia: Building blocks for an EU strategy.”²⁰⁰ Although the EU document is not as clearly in opposition to the BRI, it emphasizes the importance of sustainability, comprehensiveness, and rules-based project development. It requires only a little reading between the lines to understand that these values are set in contrast to the BRI.

This return of geopolitical rivalry and the resulting politicization of infrastructure do not mean the end of globalization. Instead, two rather different logics of international relations can be said to exist in parallel. This coexistence is not a novelty, but whereas the Cold War era had a dominant geopolitical logic with pockets of liberal globalization, the post-Cold War era was characterized by a dominant logic of liberal globalization and a more confined geopolitical logic. In today's infrastructure development, both strong forces increasingly overlap.

One widely reported example is the controversy over the inclusion of Chinese tech giant Huawei in European 5G telecommunications infrastructure. Critics of the Chinese technology vendor have argued that the inclusion of Huawei technology comes with risks arising from espionage, sabotage, and technological dependencies.²⁰¹ Telecommunications infrastructure from this perspective is not primarily a public good that enables connectivity. Critics argue that the party-state could utilize Huawei for political purposes. The fact that ownership of Huawei does not come with control over the company²⁰² has only strengthened the suspicion that the tech firm ultimately serves a political agenda for the People's Republic of China.

199 See U.S. Department of State, “Blue Dot Network,” <https://www.state.gov/blue-dot-network/>.

200 *Connecting Europe and Asia: Building Blocks for an EU Strategy*, JOIN(2018) 31 final, Brussels, September 19, 2018, <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018JC0031&from=EN>.

201 Tim Rühlig and Maja Björk, *What to Make of the Huawei Debate? 5G Network Security and Technology Dependency in Europe* (Stockholm: The Swedish Institute of International Affairs, 2020), <https://www.ui.se/globalassets/ui.se-eng/publications/ui-publications/2020/ui-paper-no.-1-2020.pdf>.

202 Tim Rühlig, *Who Controls Huawei? Implications for Europe* (Stockholm: The Swedish Institute of International Affairs, 2020), <https://www.ui.se/globalassets/butiken/ui-paper/2020/ui-paper-no.-5-2020.pdf>.

At the same time, proponents of cooperation with Huawei argue that there is no evidence to substantiate the accusations against the technology giant.²⁰³ They highlight the high quality of Huawei products, the economic benefits of connectivity, interdependence, and cooperation with China, and the economic and political costs of potential technological decoupling. Not least in the development of technical standards, Western and Chinese firms continue to cooperate closely.

Why do these two political logics, with their different implications for infrastructure, continue to coexist? Put differently, why are great powers such as China and the United States as well as other actors competing over infrastructure and its regulatory, economic, technical, and digital realms? Rather than on hard power alone, the core of China's rise has been based on economic and technological development. China's "Made in China 2025" strategy and its successors have been explicit about the aim to establish China as a dominant power in the area of critical technologies and innovation. In this context, infrastructure has been crucial to China's domestic development and is now becoming a major field of international competition. Neither the United States nor China – or indeed their domestic audiences – is keen to see this rivalry play out in the military field. Hence, a long game of conflict in the market sphere and the development of infrastructure can be envisaged. This chapter seeks to explain the mechanisms behind power competition over infrastructure and provides illustrative examples that invite readers to explore these trends further.

Identifying Infrastructure Influence Vectors: An Ideal-type Heuristic and Illustrative Examples

Although the economic importance of infrastructure has been examined at length, relatively little has been published about infrastructure as a means of foreign policy. This is surprising, not least because the perception of infrastructure as a tool of power rivalry is not without historical precedent. Control over seaports has long been considered crucial to maritime power

203 Patrick Beuth and Marcel Rosenbach, „Eine Hintertür, die nur die USA sehen,“ *Der Spiegel*, February 12, 2020, <https://www.spiegel.de/netzwelt/netzpolitik/huawei-und-die-spionage-vorwuerfe-eine-hintertuer-die-nur-die-usa-sehen-a-c9c40afd-51a3-43d3-a853-75d1fcdd1946>.

projection.²⁰⁴ Similarly, competition over the control of telecommunications infrastructure shaped power rivalries from the time of the Spanish-American War to the Anglo-German tensions of the late 19th and early 20th century, World Wars I and II, and Operation Ivy Bells during the Cold War. Only long phases of peace and prosperity have led states to focus on the commercial potential of infrastructure and neglect the power potential of telecommunications networks.²⁰⁵

In the recent literature, we consider Jonathan Hillman's concept of "infrastructure influence" to be most useful for understanding political competition over infrastructure. Hillman distinguishes between three stages of infrastructure development by foreign countries: finance, design and construction, and ownership and operation. He then examines how a foreign power can gain power in these three stages in peacetime.²⁰⁶ Based on Hillman's classification, we suggest including "innovation and regulation" as a separate stage. Considering the mechanisms of influence that stem from these four phases, we identify three forms of power that stem from infrastructure: the extraction of information (panopticon),²⁰⁷ the control and regulation of access (flow control),²⁰⁸ and the establishment of dependency (lock-in effects).

Plotting the four phases of infrastructure development on the y-axis and the three mechanisms of infrastructure influence on the x-axis produces a 12-field table that describes 12 influence vectors for foreign actors (Figure 19). This can serve as an ideal typical heuristic. In praxis, phases of infrastructure development and mechanisms of infrastructure control overlap and not every infrastructure project provides for all 12 vectors of influence. We illustrate these 12 vectors below, providing brief examples.

- **Finance and panopticon:** The preparation of bids and investment are surrounded by massive amounts of data flows. Even at the tender phase a bidder has access to various types of information. Once an investment deal

204 Jonathan E. Hillman, *The Emperor's New Road* (New Haven: Yale University Press, 2020).

205 Rush Doshi and Kevin McGuinness, *Huawei Meets History: Great Powers and Telecommunications Risk, 1840-2021* (Washington, DC: Brookings Institution, 2021), <https://www.brookings.edu/wp-content/uploads/2021/03/Huawei-meets-history-v4.pdf>.

206 Jonathan E. Hillman, *Influence and Infrastructure: The Strategic Stakes of Foreign Projects* (Washington, DC: CSIS, 2019), https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/190123_Hillman_Influence-andInfrastructure_WEB_v3.pdf.

207 Henry Farrell and Abraham L. Newman, "Weaponized Interdependence: How Global Economic Networks Shape State Coercion," *International Security* 44:1 (Summer 2019), pp. 42-79.

208 Heiko Borchert, *Flow Control Rewrites Globalization. Implications For Business and Investors. HEDGE 21 Strategic Assessment* (Dubai: HEDGE21/ALCAZAR Capital, 2019), https://www.borchert.ch/wp-content/uploads/2021/08/1901_Borchert_Flow_Control.pdf.

		STAGES OF INFRASTRUCTURE DEVELOPMENT			
		Finance	Innovate and regulate	Design and construct	Own and operate
MECHANISMS OF INFRASTRUCTURE INFLUENCE	Extract information (panopticon)	Financial reporting and analysis prior to investments and M&A	5G standardization as an information source	Blockchain bill of lading initiatives in maritime transport	Port Community systems (Single Window solutions) in smart seaports
	Control/ regulate access (flow control)	Use of payments / service of debt as condition for preferential access / denial of access	U.S. support to OpenRAN innovation to increase control of 5G flow	Kill switch in 5G infrastructure	Preferential treatment for shipping companies in seaports
	Establish dependency (lock-in effects)	Debt trap in seaport investments	Export of national regulation (case of Chinese high-speed rail systems to Asian countries)	Maintenance of 5G infrastructure by vendors	Redirection of freight (by COSCO and Maersk) through their own ports – the example of Piraeus (COSCO)

Figure 19: Vectors of Infrastructure Influence

has been struck, access to information naturally increases, as shareholders need transparency, sound financial reporting needs to be maintained, and the investor needs information to allow for active ownership. In case of mergers and acquisitions (M&A), the post-merger phase usually involves streamlining IT and data systems, which eases the flow of information. In the EU foreign direct investment screening framework, "access to sensitive information or the ability to control information" is one of five highlighted concerns that member states should consider in case of a foreign financier.²⁰⁹

- **Finance and flow control:** The use of financial incentives to guarantee flow control and access has a long history, the British Empire and its geo-

²⁰⁹ *Foreign Direct Investment EU Screening Framework (Brussels: European Commission, 2019)*, https://trade.ec.europa.eu/doclib/docs/2019/february/tradoc_157683.pdf.

economic relations being a prime example. Chinese investment and loans to finance infrastructure in Djibouti, offering China access to and control of critical flows in the region, is a more recent example.²¹⁰ It can be expected that the major debt relief programs that follow the COVID-19 pandemic will to some extent also serve geoeconomic ends.

- **Finance and lock-in effects:** In recent years, researchers have controversially discussed whether Chinese loans linked to BRI infrastructure projects create a "debt trap."²¹¹ The underlying argument is that China can gain control over strategic infrastructure by imposing harsh terms on its counterparts, including debt-equity swaps that allow it to seize strategic assets when debtors run into foreseeable financial distress. The takeover of Hambantota Port in Sri Lanka is the most frequently cited example. Regardless of whether the debt trap can be found to exist empirically,²¹² this debt trap logic is illustrative of how lock-in effects could result from the financing of infrastructure.
- **Innovate/regulate and panopticon:** Although innovation is largely perceived as generating new knowledge regulation, not least by means of the technical standardization of infrastructure, it can also help obtain information. The technical standardization of complex technologies such as 5G or railway signaling requires all interested parties to share technical innovations with competitors for discussion in order to find a consensual technical standard that provides interoperability. Research indicates that Chinese firms have requested international standards in fields where they have lacked technical know-how. This was done not necessarily to arrive at a consensual standard but rather to gain access to technical information.²¹³

210 Mordechai Chaziza, "China Consolidates its Commercial Foothold in Djibouti," *The Diplomat*, January 26, 2021, <https://thediplomat.com/2021/01/china-consolidates-its-commercial-foothold-in-djibouti/>; Leighton G. Luke, "China Boosts Djibouti Presence: More Investments and Naval Base Capable of Docking Aircraft Carriers," *Future Directions International*, April 27, 2021, <https://www.futuredirections.org.au/publication/china-boosts-djibouti-presence-more-investments-and-naval-base-capable-of-docking-aircraft-carriers/>.

211 Brahma Chellaney, "China's Debt-Trap Diplomacy," *Project Syndicate*, January 23, 2017, <https://www.project-syndicate.org/commentary/china-one-belt-one-road-loans-debt-by-brahma-chellaney-2017-01>.

212 Jordan Calinoff and David Gordon, "Port Investments in the Belt and Road Initiative: Is Beijing Grabbing Strategic Assets?," *Survival* 62:4 (August/September 2020), pp. 59-80; Lucy Hornby, "China Pledges to Address Debt Worries over Belt and Road," *Financial Times*, September 24, 2019, <https://www.ft.com/content/f7442058-66f9-11e9-9adc-98bf1d35a056>.

213 Tim Rühlig, *China's Technical Standardization and its Implications for the EU (Working Title)* (Stockholm: Swedish Institute of International Affairs/EUCCC, forthcoming).

- **Innovate/regulate and flow control:** The power to innovate and regulate innovation is increasingly a means for controlling the flows associated with emerging technologies and critical infrastructure. In case of 5G, a few companies or states have a considerable say in how modern data flows are facilitated and shaped. Actors that lack this power can boost their innovation and/or regulatory capacity to either block the control of others or expand their own. The way in which the United States and Japan have supported innovation processes and regulatory frameworks around the O-RAN Alliance – a technology that challenges the position of major 5G kit vendors from Europe, China, and South Korea – illustrates how actors can try to alter control over modern data flows.²¹⁴

- **Innovate/regulate and lock-in effects:** China-Africa cooperation on the development and deployment of facial recognition has received widespread attention. It is primarily perceived through the lens of the spread of Chinese digital authoritarianism to developing countries. However, this cooperation has also had two other effects. First, it helps Chinese technology firms refine their innovations, primarily by providing access to large amounts of data. Second, the coupling of innovation and deployment creates lock-in effects for African states, because this process adapts Chinese facial recognition technology to local circumstances. At the same time, African countries control access to the data that is needed by Chinese companies to refine their solutions. To some degree, both sides have entered a “mutual lock-in.” Competitors that lack the same access to data from African states run the risk of being outcompeted on the accuracy of their products.

- **Design/construct and panopticon:** In the wake of the digitization of maritime transport, solutions are being discussed for an electronic bill of lading based on blockchain technology.²¹⁵ TradeLens, a cooperative platform between the tech firm IBM and the shipping company Moeller-Maersk, is currently considered the most promising initiative. The strength of the initiative lies in the combination of IBM's technological capabilities and Moeller-Maersk's status as the leading shipping company. Experts believe that participation in the TradeLens platform will become necessary for the

²¹⁴ Iain Morris, „US Senators Propose More Than \$1B for Open RAN to Fight Huawei,” *Light Reading*, January 15, 2020, [https://www.lightreading.com/5g/us-senators-propose-more-than-\\$1b-for-open-ran-to-fight-huawei/d/d-id/756844](https://www.lightreading.com/5g/us-senators-propose-more-than-$1b-for-open-ran-to-fight-huawei/d/d-id/756844); Martyn Warwick, „US and Japan Team on Open RAN, 6G R&D,” *TelecomTV*, April 19, 2021, <https://www.telecomtv.com/content/6g/us-and-japan-team-on-open-ran-6g-r-d-41290/>.

²¹⁵ A bill of lading is a document acknowledging the receipt of cargo that often contains basic information about the carriage of goods.

competitiveness of most of the actors in the maritime trade ecosystem.²¹⁶ TradeLens could provide IBM and Moeller-Maersk with comprehensive access to all the sensitive information included in bills of lading, potentially providing economic and competitive advantages as well as strategic knowledge of world trade flows and strategic bottlenecks. Competitors of TradeLens have identified the potential of the initiative. China is now developing a rival blockchain-based electronic bill of lading system but is currently well behind TradeLens. It is possible that regulation could be used to prevent TradeLens from gaining a dominant position before competitors are able to catch up.

- **Design/construct and flow control:** Whether China could ever shut down 5G telecommunication infrastructure has been widely discussed. Those concerned about this “kill switch” scenario argue that if Europe develops its 5G network with Chinese vendors’ technology, the Chinese party-state could utilize information on vulnerabilities in Huawei technology to turn off the mobile phone infrastructure. In other words, privileged knowledge of the design of infrastructure could be used to threaten the free flow of data.²¹⁷
- **Design/construct and lock-in effects:** In addition to the kill switch scenario, the use of Chinese 5G infrastructure could lead to other dependencies. Because 5G is more software-defined than previous generations of mobile infrastructure, regular and complex updates will be required to keep 5G infrastructure reliable and trustworthy. In many cases, such maintenance work, particularly for non-standardized components, will be provided by the vendors. If a country becomes overwhelmingly reliant on the equipment of a single vendor, this could result in overdependencies that could be used to obtain political concessions.²¹⁸
- **Own/operate and panopticon:** One example of the possibility of extracting information from the operation of infrastructure is the introduction of port or terminal community systems in smart seaports. Single window solutions that collect a wide variety of information from all the actors in a terminal or even the entire seaport are being used to increase efficiency

²¹⁶ Authors’ video and telephone interviews with experts on maritime transport, January to June 2021.

²¹⁷ Tim Rühlig, John Seaman, and Daniel Voelsen, “5G and the US-China Tech Rivalry: a Test for Europe’s Future in the Digital Age,” SWP Comments (Berlin: SWP/German Institute for International and Security Affairs, 2019), https://www.swp-berlin.org/publications/products/comments/2019C29_job_EtAl.pdf.

²¹⁸ Rühlig/Björk, “What to Make of the Huawei Debate?”

in smart seaports. The International Maritime Organization recommends single window solutions. Experts in maritime transport are concerned that terminal operators that run a number of port terminals could link data from different ports; this would put them in a powerful position to control the storage and processing of data from entire ports or terminal communities.²¹⁹

- **Own/operate and flow control:** Infrastructure is often said to be neutral, but preferential treatment is widespread in the practice of the owners and operators of infrastructure. For example, shipping lines increasingly operate seaport terminals. This allows them to handle their own freight preferentially and prioritize it over that of their competitors, thereby reducing transport times and increasing competitiveness.²²⁰
- **Own/operate and lock-in effects:** The trend for shipping lines to also operate seaport terminals comes with lock-in effects. Increased market concentration between shipping lines creates dependencies on seaports that compete over the throughput of freight from large shipping companies such as the Chinese shipping company COSCO and the Danish Moeller-Maersk. These shipping lines operate their own terminals, which allows them to put pressure on seaports to accept investments. For example, the throughput of the port of Piraeus in Greece increased dramatically when COSCO took it over. The withdrawal of COSCO from Piraeus would take Piraeus back to being a port of only regional importance. Hence, Piraeus and Greece rely on the investment and goodwill of COSCO.²²¹

Toward a Strategy on Infrastructure Influence: European Implications

In a geopolitical strategy on infrastructure influence, a state actor would employ both offensive and defensive measures to manage the 12 vectors outlined above. The mix and content of any strategy – either implicit or explicit – would be determined by geopolitical ambition, the resources avail-

219 Authors' video and telephone interviews with experts on maritime transport, January to June 2021.

220 Authors' video and telephone interviews with experts on maritime transport, January to June 2021. See also the chapter by Theodore Karasik in this volume.

221 Frans-Paul Van der Putten, *European Seaports and Chinese Strategic Influence: The Relevance of the Maritime Silk Road for the Netherlands* (The Hague: Clingendael, 2019), https://www.clingendael.org/sites/default/files/2019-12/Report_European_ports_and_Chinese_influence_December_2019.pdf.

able, and existing relations. Offensive means are usually employed abroad where influence is sought, whereas defensive means are used at home where the influence of others needs to be checked. However, there is also a strategic domain in between where an actor employs and supports both offensive and defensive means in partner countries – often dependent allies or regional neighbors – in order to manage the influence of third parties. The European Union's ambitious connectivity strategy vis-à-vis eastern partners or U.S. ambitions to build "forward resilience"²²² in partner countries illustrate this logic.

Figure 19 identified 12 types of influence vectors and essentially summarizes the offensive means for wielding power. From a state-centric strategic perspective, the key issues are how these forms of influence can be actualized, and what the costs and risks associated with doing so are. State investment funds and state-owned enterprises will facilitate some activities tied to the financing, design and construction, and ownership of infrastructure.²²³ Innovation, in the sense of technology development, materials-related solutions, or digital infrastructure management, can be strengthened by strategic investments in research and development funds, such as the Horizon Europe framework and the subsidized Important Projects of Common European Interest (IPCEI).²²⁴ In addition to resources and strategic culture, the ability to reap the benefits of offensive means in infrastructure – to extract information, control flows, and establish dependencies – is also heavily dependent on domestic regulation. Henry Farrell and Abraham L. Newman have illustrated how a specific form of jurisdiction allows some states to weaponize interdependencies for coercive means.²²⁵ From an EU perspective, the offensive use of infrastructure and the influence this brings has, rather paradoxically, been a key factor in the internal integration of the EU but at the same time has been fairly absent from its foreign policy. Infrastructure was at the heart of the geopolitical project of bringing European societies closer together in decades of "ever closer Union," but in its external dealings the EU has pre-

222 See also the chapter by Daniel Hamilton in this volume.

223 Henrique Choer Moraes and Mikael Wigell, "The Emergence of Strategic Capitalism: Geoeconomics, Corporate Statecraft and the Repurposing of the Global Economy", FIIA Working Paper 117 (Helsinki: Finnish Institute of International Affairs, 2021), <https://www.fiaa.fi/sv/publikation/the-emergence-of-strategic-capitalism>.

224 "IPCEI may represent a very important contribution to economic growth, jobs, and competitiveness for the Union industry and economy in view of their positive spillover effects on the internal market and the Union society." See: Criteria for the analysis of the compatibility with the internal market of State aid to promote the execution of important projects of common European interest, (2014/C 188/02), Official Journal of the European Union, June 20, 2014, [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52014XC0620\(01\)](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52014XC0620(01)).

225 Farrell/Newman, "Weaponized Interdependence."

ferred to support infrastructure from a commercial and/or developmental perspective rather than instrumentalize such investments in line with wider geopolitical goals. This is a trend that seems to have played out also in the area of new technologies.²²⁶

Defensive means are used in an attempt to manage the influence of others, either by targeting the establishment of infrastructure or limiting the ability of foreign powers to extract information, control flows, and establish dependencies using infrastructure. Several policy tools are increasingly being utilized to these ends. Export control measures are once again in fashion to prevent critical technologies from reaching adversaries. The screening of foreign direct investment has been strengthened in both the United States and the EU to block the influence of others. In addition, the United States, the United Kingdom, and the EU, as well as China and Russia, have recently stepped-up regulation of data protection to guard against unauthorized access to data and innovations. Although labeled defensive, it should be said that these measures increasingly have extraterritorial implications that blur the defensive/offensive divide. U.S. secondary sanctions and the way they affect European companies trading with Iran provide a current example.

From a European perspective, these defensive means have been employed up to now to protect EU member states and their critical infrastructure and technologies. There is a demonstrable need to align defensive and to some extent offensive means in relation to rivals and partners, not least with a view to harmonizing the EU's political and economic interests. Three gaps will need to be addressed in such an effort.

First, more coherence is needed among EU member states regarding the threats and opportunities they face in the infrastructure domain. Current perspectives differ considerably, as the discussion on Chinese investments in Europe illustrates.²²⁷ The new strategic compass²²⁸ will hopefully facilitate a discussion on the interdependencies that follow from modern infrastruc-

226 Ulrike Franke and Jose Ignacio Torreblanca, *Geo-Tech Politics: Why Technology Shapes European Power* (London: European Council on Foreign Relations, 2021), <https://ecfr.eu/publication/geo-tech-politics-why-technology-shapes-european-power/>.

227 Jamie Dettmer, „EU Agrees on Infrastructure Plan to Rival China's New Silk Road,” *Voice of America*, July 31, 2021, <https://www.voanews.com/europe/eu-agrees-infrastructure-plan-rival-chinas-new-silk-road>.

228 The strategic compass is a new EU instrument for improving coherence between foreign, security, and defense policy goals and specific actions. See also the European External Action Service factsheet „Towards a Strategic Compass” at https://eeas.europa.eu/headquarters/headquarters-homepage/89047/towards-strategic-compass_en.

ture and how these can be managed. This is an area where one actor's dependency can incur costs for all and for the ability to conduct collective European foreign policy. In addition, many of the defensive means such as export controls and investment screening can only achieve their full potential if implemented in a coherent manner.

Second, the different arms of EU-level foreign policy need to work better in concert. Although this is an age-old problem – to some extent alleviated by the double-hatted position of the High Representative of the Union for Foreign Affairs and Security Policy, which links the resources of the European Commission and the diplomatic work within the European External Action Service – it has been brought to the fore by new dimensions of foreign and security policy. In the case of infrastructure and the various ways it can influence politics suggested above, more information sharing and deliberation are needed between the EU bodies and the working groups involved in loans, aid, and trade, on the one hand, and policy planning and strategic analysis on the more traditional diplomatic side.

Third, there is a gap between European political decision makers and European business that both camps would benefit from bridging. One effect of the post-Cold War era of liberal globalization was an accelerated decoupling of market actors and politics. Current geo-economic trends once again make companies more dependent on state relations and more influenced by states' geopolitical ambitions. States, on the other hand, are increasingly reliant on the corporate sector for the provision of critical societal functions and innovation capacity. In many European settings, however, these new or resurfacing levels of interdependence between states and the corporate sector are not matched by corresponding levels of communication and cooperation. Both EU member states and the EU system would benefit from upgraded frameworks and platforms for interaction between the corporate sector and the foreign policy establishment, as areas such as standardization, supply chains, innovation, and infrastructure are weaponized as geopolitical tools with consequences for all the actors involved.

These three calls for coherence do not imply that unity is a panacea for European foreign policy and the management of infrastructure influence. Nonetheless, increasing levels of coherence – especially among member states – would not just improve collective understanding and decision making in a non-traditional foreign policy domain. It would also tie down the necessary resources – be they expertise or the establishment of networks

or the costly tools of geo-economic deterrence used to avert the malign influence of others – that will be needed as international infrastructure is increasingly used and abused as a vector for influence in international relations.

11

Ensuring Access to Raw Materials Amid Geoeconomic Competition: An Austrian Perspective

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Introduction

Linked to global development goals is an increasing demand for resources. Major drivers are the increasing populations and their individual and societal needs, usually satisfied by an expansion of industrial production. Achieving the goals of the European Green Deal, the transformation of energy systems, mobility, and the decarbonization of industry entails modifications of materials utility models and the use of different raw materials in sometimes higher quantities compared to current times.²²⁹ For example, the need for lithium in Li-ion-batteries is associated with increased consumption of cobalt, nickel, manganese, and graphite. The roll-out of photovoltaic technologies requires the use of semiconductor metals (e.g., germanium, gallium), which are often only obtainable as by-products of base metals such as zinc and extracted only in small quantities. A decline in primary base metal production goes hand in hand with a reduced yield of those minor components bound to major constituents. Mining of the resources is sometimes concentrated in a few producer countries.²³⁰ Even if sustainable raw material utilization patterns are established by closing cycles, recycling is currently subject to economic and technological limits, and the increased demand can only be met by mining activities.

Access to resources is a strategic security question for Europe's ambition to deliver the Green Deal.²³¹ But the appetite for resources is putting pressure on the planet. Challenges must be solved along a sustainable path.

This article looks at global developments in the raw materials sector and the European and Austrian strategic response to them. In the first part, the current global developments are discussed on the basis of empirical data collected and analyzed annually in Austria. The focus therein is put on the production of individual raw materials in certain countries, the share of the EU in world production, and the economic value of production for each country. To conclude, the article discusses Austria's and the Europe Union's approaches to these challenges with the aim to secure supply within the framework of the European sustainability agenda.

229 *World Development Report 2020. Trading for Development in the Age of Global Value Chains* (Washington, DC: World Bank, 2020), <https://www.worldbank.org/en/publication/wdr2020>.

230 *World Mining Data 2021* (Vienna: BMLRT, 2021), https://www.world-mining-data.info/?World_Mining_Data___PDF-Files.

231 *Critical Raw Materials Resilience: Charting a Path towards Greater Security and Sustainability*, COM(2020) 474 final, Brussels, September 3, 2020, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0474>.

Global Mining Development²³²

Global mining production doubled in the last four decades (Figure 20). Growth rates were moderate in the 1980s and 1990s. The economic upswing on the Asian continent, led by China, was accompanied by an increase in mining production. As supply and demand became increasingly out of balance from 2003 onward, a phase of sometimes high and volatile raw material prices began. This phase was interrupted only by the global economic crisis in 2008, caused mainly by the banking crisis, which spilled over into the commodity markets in 2009. From 2012, commodity prices tended to fall again. However, price volatility remained.

Whereas global mining production in 2009 was still strongly impacted by the financial crisis in 2008 and the subdued demand from raw material consumers, the following years again saw noticeable production increases compared to 2009, which then flattened out significantly from 2013 onwards, then led to a sideways movement and, after a production decline in 2016, again increased more significantly.

Production increases in the iron and steel refiners' group (44.2% between 2009 and 2019) and in the non-ferrous metals group (49.1% between 2009 and 2019)

	2009 [Mio. t]	2012 [Mio. t]	2015 [Mio. t]	2018 [Mio. t]	2019 [Mio. t]	Δ % 2009/19	Δ % 2018/19
Total	14,955.7	16,811.3	17,182.4	17,734.4	17,923.5	+19.8%	+1.1%
of that:							
Fossil fuels	13,112.2	14,654.6	14,803.4	15,249.9	15,435.8	+17.7%	+1.2%
Iron & ferro alloys	1,101.5	1,319.0	1,493.0	1,570.7	1,587.9	+44.2%	+1.1%
Non-ferrous metals	68.8	85.4	96.3	103.4	102.6	+49.1%	-0.8%
Precious metals [in t]	25,518	28,217	31,843	31,533	31,539	+23.6%	+0.0%
Industrial minerals	673.3	752.3	789.6	810.4	797.1	+18.4%	-1.6%

Table 2: World Mining Production by Commodity Group and Percentage Changes in Recent Years

²³² Based on: World Mining Data 2021.

are particularly noteworthy (Table 2 and Figure 20). The first stronger production decline since 2009 in energy commodities, 3.1% between 2015 and 2016, was again put into perspective by production increases in the subsequent years 2017 to 2019 (+3.0%, +3.2%, 1.2%). The decisive factors for these increases are U.S. crude oil and natural gas production and Chinese coal production. The first-time decline in production in 2019 in the non-ferrous metals group is attributable to a reduction in the production of primary aluminum in China.

In terms of quantity, energy raw materials predominate in world mining production with approximately 86.1%, followed by iron and the steel refiners with approx. 8.9% and industrial minerals with approx. 4.4% (Figure 20 and Figure 21). The production volumes in the non-ferrous metals and precious metals groups are too low compared with the other raw material groups to appear in Figure 21.

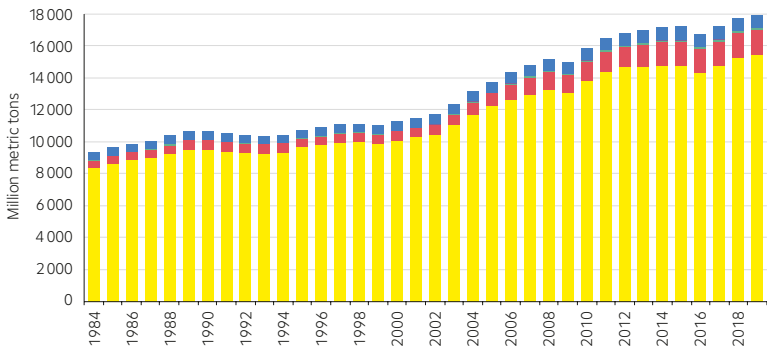
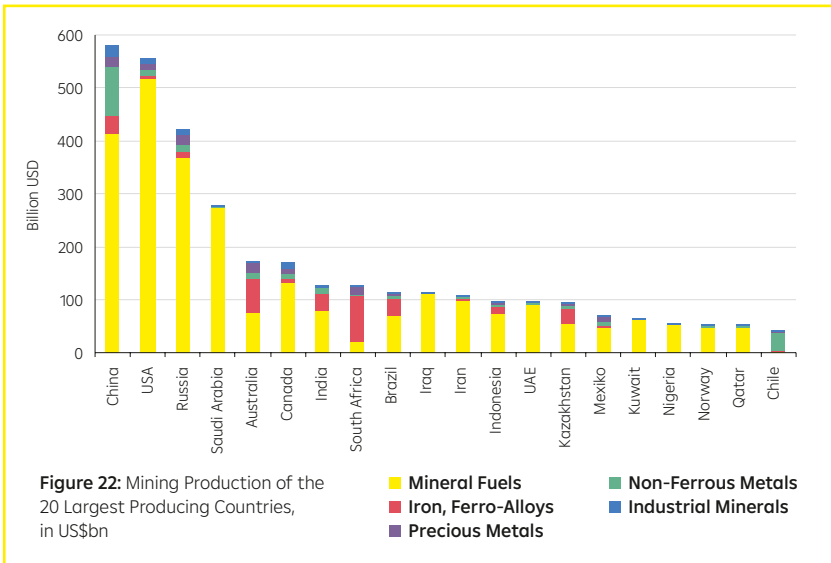
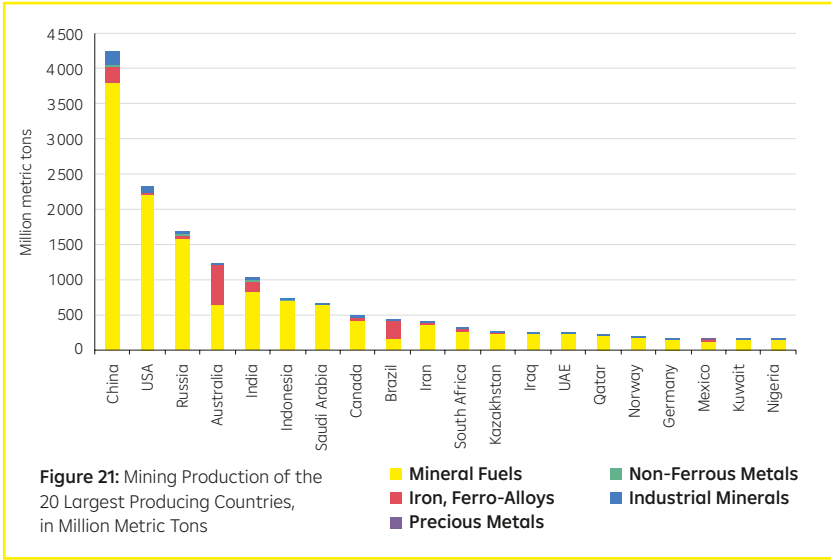


Figure 20: World Mining Production
by Raw Material Group,
in Million Metric Tons

Mineral Fuels
Iron, Ferro-Alloys
Precious Metals
Non-Ferrous Metals
Industrial Minerals

China – the world’s most important mining country since 2003 – produced around 4.324 billion tons of mineral raw materials in 2019 (excluding construction raw materials such as sand and gravel), or around 23.6%, almost a quarter, of total global production. China is followed by the United States with around 2.336 billion tons (around 12.8% of world production, excluding construction raw materials) and Russia with around 1.686 billion tons (around 9.2% of world production, excluding construction raw materials). Norway is the first European country to occupy 16th place in the ranking with a production volume of around 174.5 million tons (Figure 22).



The value of China's mining production in 2019 was about US\$583.7bn (about 14.3% of the total value of the world mining production). The value of U.S. mining production in 2019 was about US\$555.1bn (about 13.6% of the total value

of world mining production), and the value of Russia’s mining production was about US\$421bn (about 10.3% of the total value of world mining production) (Figure 22). China was the world’s largest producer by volume of 32 different mineral commodities in 2019 (Table 3).

	1985	1990	1995	2000	2005	2010	2015	2016	2017	2018	2019
USA	12	10	11	10	8	5	6	4	4	4	4
Australia	4	5	7	4	4	3	4	3	3	4	4
Russia	0	0	2	3	5	4	3	4	4	4	4
South Africa	3	4	6	6	6	6	7	5	5	5	5
China	5	9	11	16	22	26	29	32	32	32	32

Table 3: Top Positions of Producer Countries for Mineral Raw Materials

In 2019, 58.4% (58.3% in 2018) of world mining production came from de-veloping countries, 1.1% (1.1% in 2018) from least developed countries, 12.8% (12.9% in 2018) from emerging economies, and about 27.7% (27.7% in 2018) from developed industrialized countries. From 2013 onwards, the trend of the last

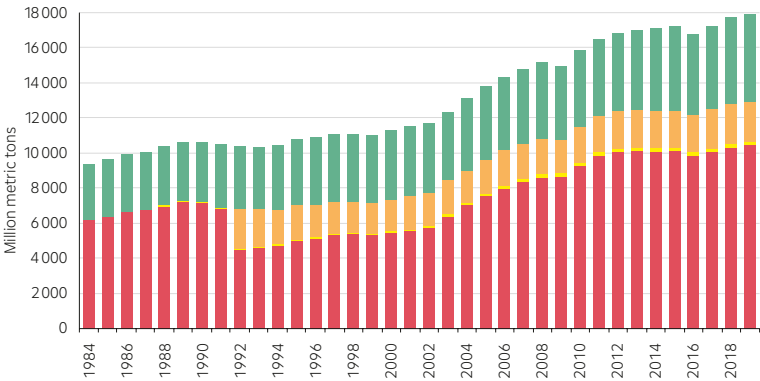


Figure 23: World Mining Production by Development Status of Producing Countries According to UN Classifications, in Million Metric tons

- Developing Countries
- Last Developed Countries
- Transition Countries
- Developed Countries

decades (huge production increases in developing countries and production decreases in developed countries) seems to be broken and continues into a sideways movement (Figure 23).

The large increases in raw material production seen in the first decade of the 21st century in Asia up to 2012 did not materialize from 2013 onwards, and production volumes have remained relatively constant since then (2012/13: increase of around 1.3%, 2013/14: first-time decrease of around 0.6%, 2014/15: marginal increase of around 0.2%, 2015/16: decrease of around 1.8%). Only from 2016/17 onwards are larger rates of increase in raw material production noticeable again, amounting to +2.8% (2016/17), +3.9% (2017/18), and +2.5% (2018/19). With the exception of Europe (-10.7%) and Latin America (-6.5%), all other continents saw increases in raw material production in 2018/19 (North America +3.8%, Africa +0.4%, and Oceania +3.9%). Oceania (i.e., Australia) has been producing larger amounts of commodities than the supposed commodity continent Africa since 2013 and larger amounts of commodities than Latin America since 2016 and will overtake Europe's declining commodity production in 2020.

The reason for the significant increase in raw material production in North America in recent years is a sharp rise in U.S. crude oil, natural gas, and coal production. The further decline of around 6.5% in raw material production in Latin America in 2019 is due to reduced Venezuelan oil production. The share

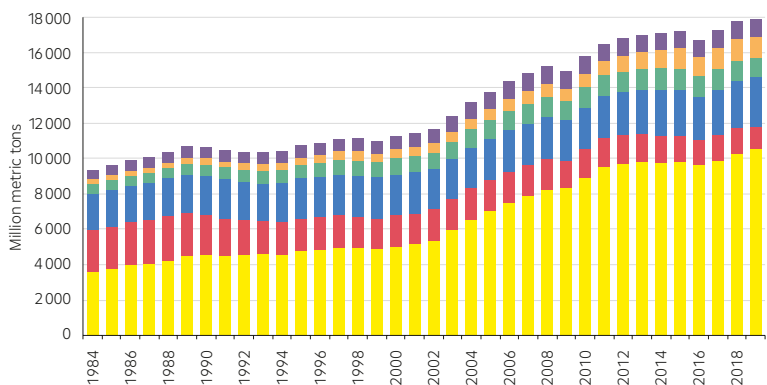


Figure 24: World Mining Production by Continent, in Million Metric Tons

■ Asia
■ Europe
■ North America
■ Latin America
■ Oceania
■ Africa

of stagnant European mining production in world mining production, which will decline more sharply again in 2019, is around 7.1% (8.0% in 2018). This decrease in Europe's raw material production is due to the decline in energy raw material production, including the end of German and Spanish hard coal production (Figure 24, Table 4, Figure 25).

Continent	Production 2018 [mio metric t]	Production 2019 [mio metric t]	Proportion 2018 [%]	Proportion 2019 [%]	Δ 2000/19 [%]	Δ 2018/19 [%]
Asia	10,292.4	10,549.3	58.0	58.9	+109.1	+ 2.5
North America	2,731.9	2,834.8	15.4	15.8	+23.2	+ 3.8
Europe	1,417.8	1,266.7	8.0	7.1	- 27.9	-10.7
Oceania	1,213.4	1,261.0	6.8	7.0	+144.7	+3.9
Latin America	1,100.1	1,028.6	6.2	5.7	+13.2	- 6.5
Africa	978.7	983.0	5.5	5.5	+28.4	+ 0.4
Total	17,734.4	17,923.5	100.0	100.0	+58.7	+ 1.1

Table 4: Top Positions of Producer Countries for Mineral Raw Materials

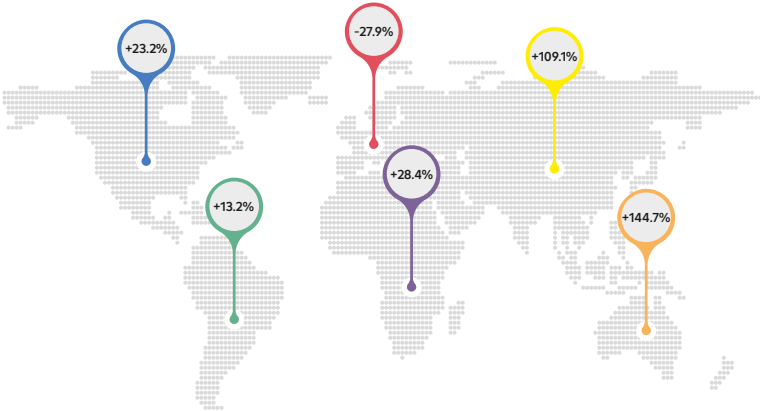
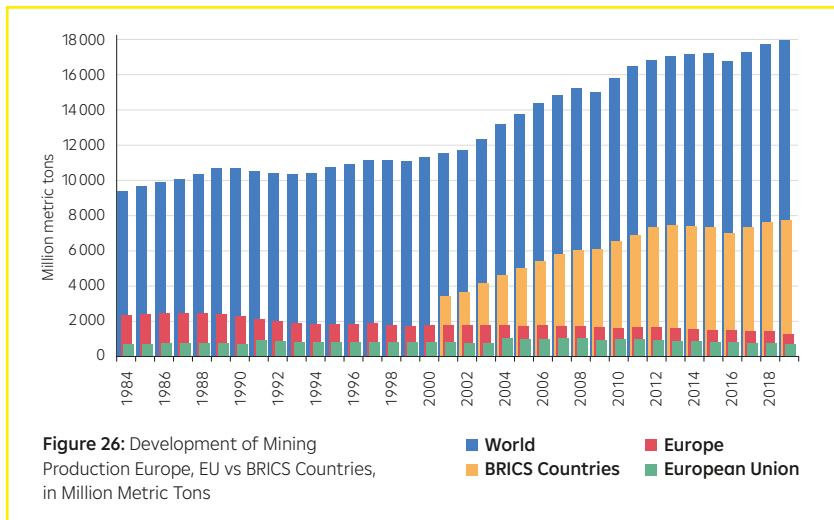


Figure 25: World Mining Production by Continent, Changes Since 2000

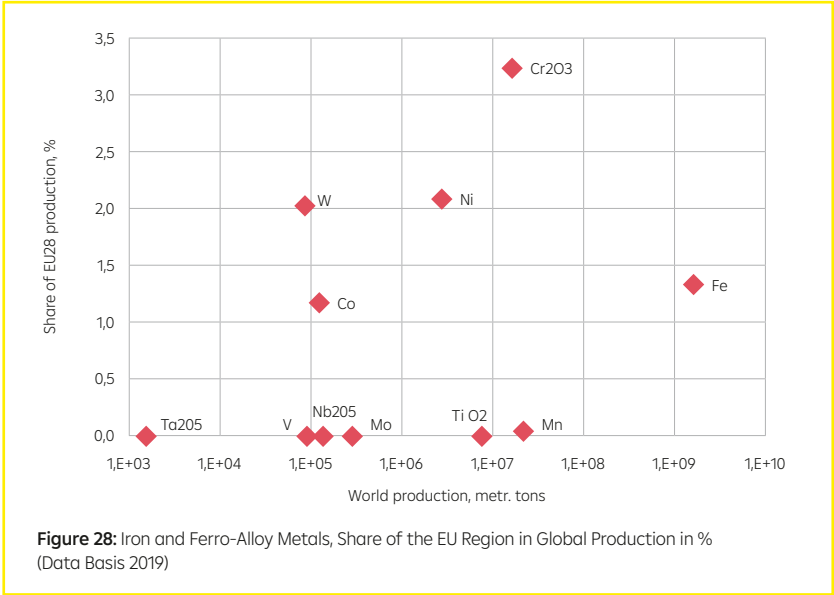
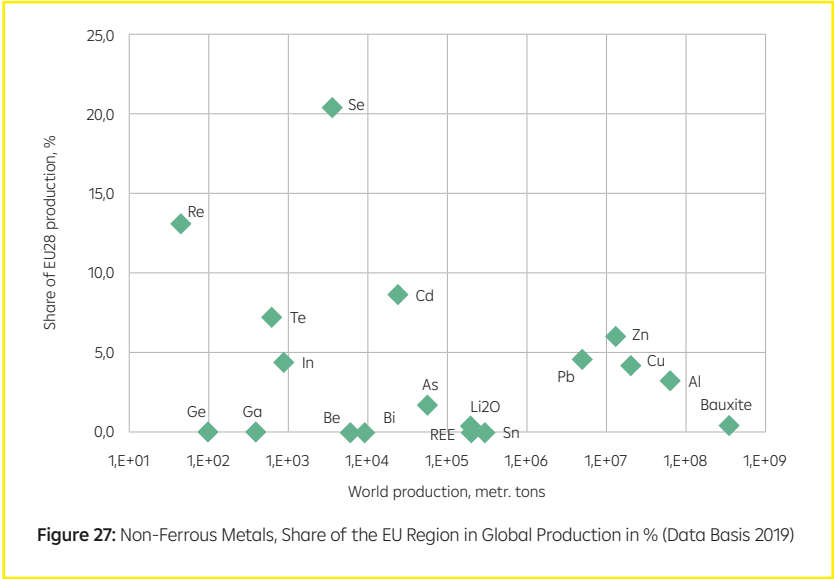
Figure 25 shows in a simplified world map the enormous growth rates of mining production since 2000 in Asia and Oceania. Europe is the only continent that has shown a decreasing trend in mining production for many years.

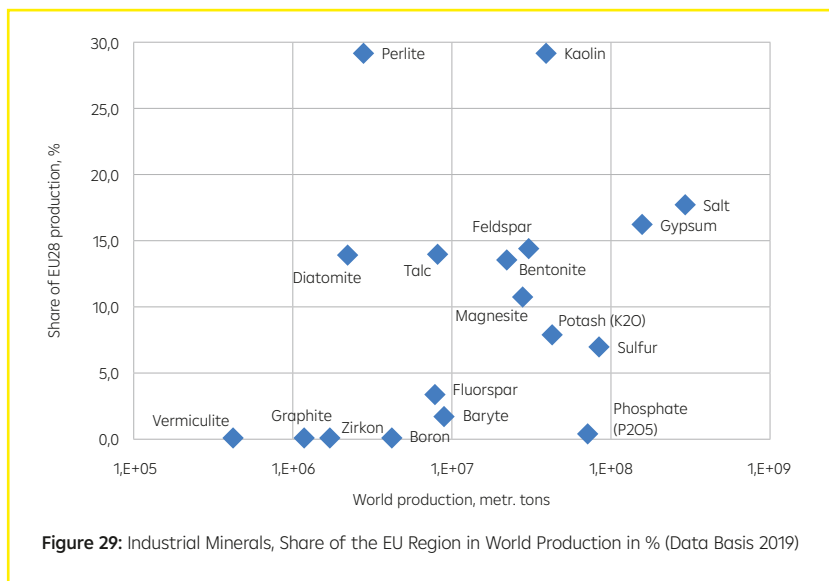
The share of the BRICS countries (Brazil, Russia, India, China, and South Africa) in world mining production is around 43.2% in 2019 (around 42.7% in 2018). The EU region's share of world mining production is low, at around 3.8% in 2019 (around 4.3% in 2018) (Figure 26).



In the following figures, the self-supply share of primary raw materials for metal production in the EU area in 2019 is compared with the global production of these metals (see Figure 8, Figure 9). The generally very low share of the production volume of these primary raw materials in the EU area is noteworthy here. Only for chromium (3.2%), nickel (2.1%), and tungsten (2.0%) in the ferro-alloy metals group, and selenium (20.5%), rhenium (13.1%), cadmium (8.7%), tellurium (7.3%), zinc (6.0%), lead (4.7%), indium (4.4%), and copper (4.2%) in the non-ferrous metals group can the EU area point to moderate primary production. In the case of lithium, cobalt, manganese, and graphite, which are important raw materials for battery production, primary production in the EU area is marginal or non-existent, with 0.37%, 1.16%, 0.04%, and 0.03% shares of total world production, respectively. The same is true for the semiconductor metals gallium (0.00%) and germani-

um (0.00%) and for the rare earth metals (0.0%), all of which are used for renewable energy technologies (Figure 27, Figure 28, Figure 29).





In the group of industrial minerals, the degree of self-sufficiency in the EU area is relatively high. Kaolin with 29.3%, perlite with 29.2%, salt with 17.7%, gypsum with 16.3%, feldspar with 14.4%, and talc with 14.0% of the world production are to be highlighted.

The steady decline in raw material production in the EU countries over the last decade is mainly due to the decline in the production of energy raw materials in the UK and, subordinately, the Netherlands, due to the gradual depletion of oil and gas deposits in the North Sea; the stronger decline in 2019 is mainly due to the end of German hard coal production and the declining lignite production in Germany (Figure 30²³³).

233 Jumps in graph 1990/91: reunification of Germany, 2003/04: admission of resource-rich countries such as Poland, Czech Republic.

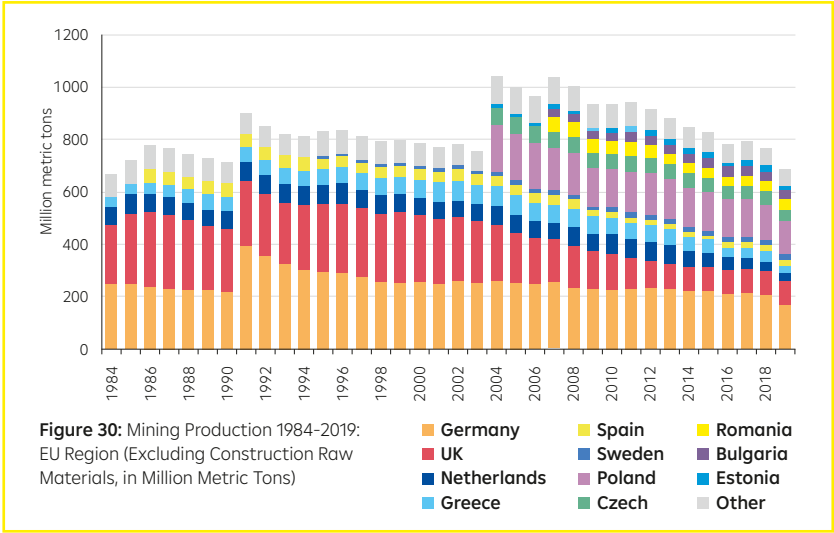
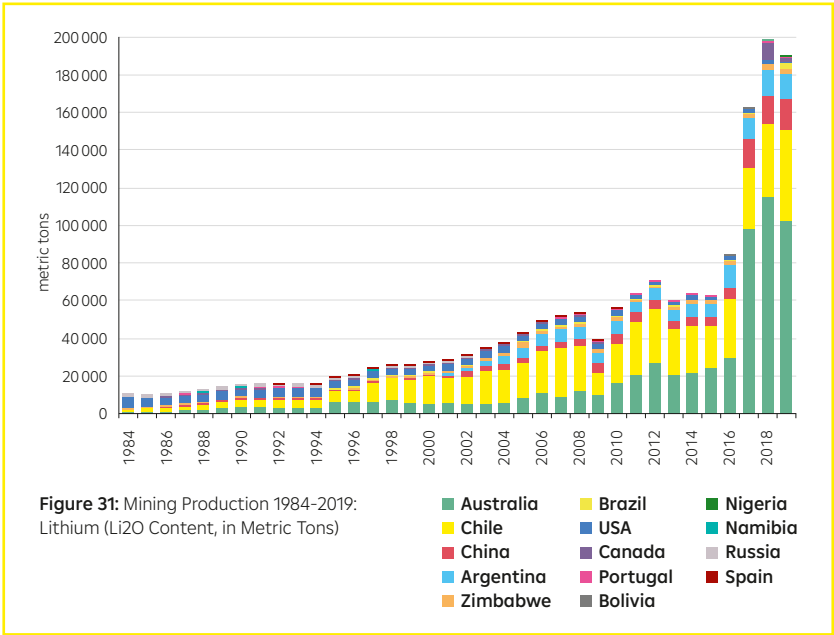
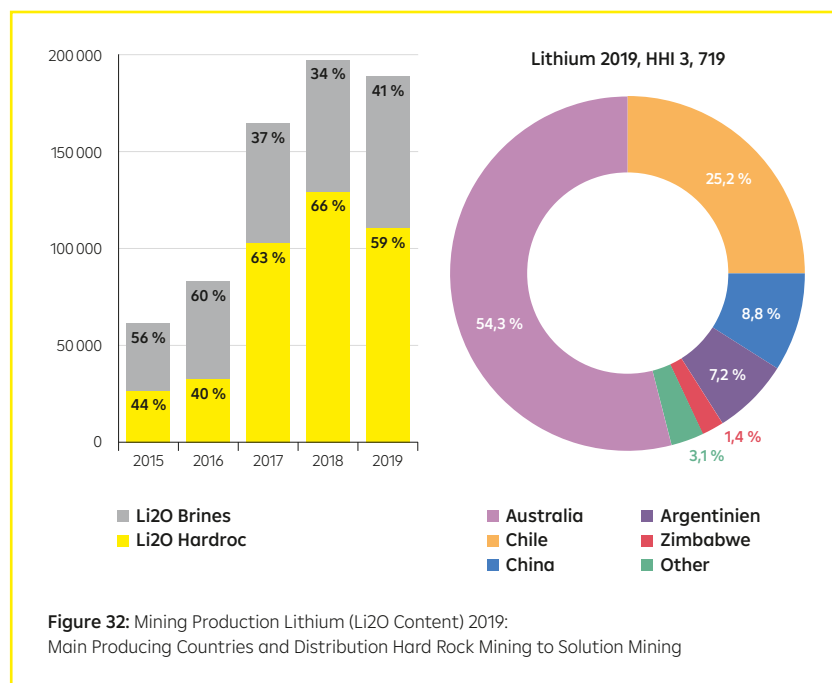


Figure 31 shows the primary production of lithium as an example of the development of commodities used for future mobility systems.



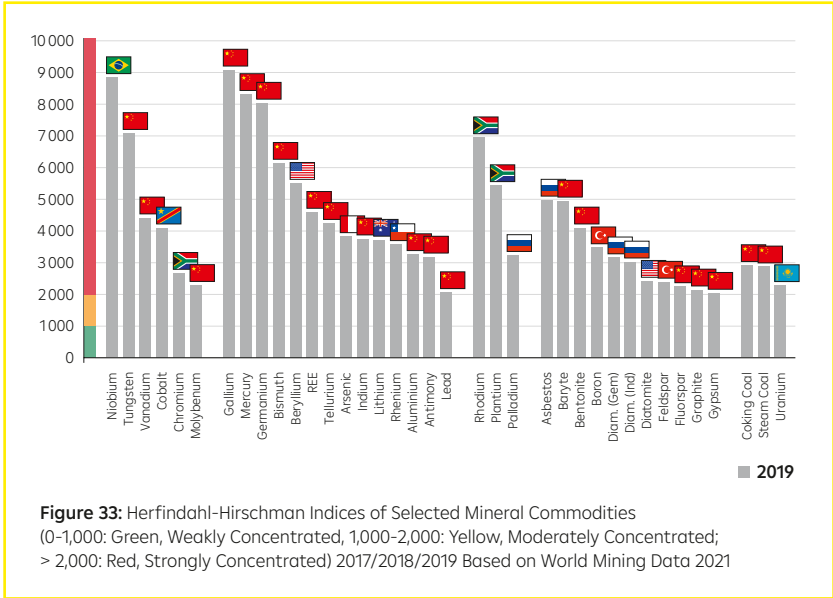
To meet the enormous demand for lithium for battery production, there has been a huge boom in global primary lithium production in recent years. Huge production increases have been noticed in Australia due to the commissioning of new mines on lithium solid rock (2016/17 + 231.5%, 2017/18 +17.0%, 2018/19 -10.4%). The new mines were developed "off the greenfield" in only a few years (e.g., Mt. Marion) and are mostly Chinese owned. The decline in production in 2019 is due to the sharp drop in prices triggered by lower than expected demand. Larger increases were also seen in solution mining for lithium from South American and Chinese salt lakes (Chile 2017/18 19.5%, 2018/19 +23.0%, China 2016/17 145.0%, 2017/18 +4.1%, 2018/19 +8.5%).

In the last five years, a trend reversal in the extraction of lithium has been observed. The ratio of lithium extracted from salt lakes decreased in favor of lithium extracted from hard rock (Figure 32). Mining from salt lakes occurs predominantly in South America in arid regions and requires careful management of sparse water resources. Increasingly, the mining companies involved are faced with engagement of NGOs.



Global Concentration of Raw Material Production

Particularly high country concentrations – as a significant factor in the supply risk for the downstream industry – are found in the ores of niobium (main producer Brazil), tungsten (main producer China), and vanadium (main producer China), as well as gallium (main producer China), germanium (main producer China), bismuth (main producer China), the platinum group elements rhodium and platinum (both main producer South Africa), and the industrial minerals barite (main producer China), bentonite (main producer China), and boron minerals (main producer Turkey).



Production of several raw materials important for future technologies is concentrated in a few countries, first and foremost China (Figure 33). The Asian competitor is taking control of raw materials that are produced in small quantities but are becoming more and more important technologically. For example, Chinese investments in African mining of non-fuel minerals between 1995 and 2018 contributed to production growth but they also increased Chi-

nese control over African mineral and metal production.²³⁴ There is evidence pointing to continued Chinese expansion in African minerals and metals but at a slower pace than in the past decade.⁶

European Union's Raw Materials Policy²³⁵

Securing reliable and unhindered access to raw materials is important for the EU. At least 30 million jobs in the EU depend on the availability of raw materials. China, the United States, Japan, and other competitors of the EU and its member states are already working fast to secure future supplies, diversify sources of supply through partnerships with resource-rich countries, and develop their internal raw material-based value chains. The EU should act urgently to ensure a secure, sustainable supply of raw materials, pooling the efforts of companies, sub-national and national authorities, and the EU institutions.

The European Commission's actions to ensure a sustainable supply of these materials can be divided into two interlinked parts: the Raw Materials Initiative (RMI) and the European Innovation Partnership (EIP) on Raw Materials.

In 2008, the Commission adopted the RMI,²³⁶ which set out a strategy for tackling the issue of access to raw materials in the EU. This strategy has three pillars that aim to ensure:

- Fair and sustainable supply of raw materials from global markets
- Sustainable supply of raw materials within the EU
- Resource efficiency and supply of secondary raw materials through recycling

The strategy covers all raw materials used by European industry except materials from agricultural production and materials used as fuel. Ensuring sustainable access to these raw materials is crucial to the competitiveness and growth of the EU economy and the objectives of the Europe 2020 strategy.

²³⁴ Magnus Ericsson, Olof Löf, and Anton Löf, „Chinese Control Over African and Global Mining: Past, Present and Future,” *Mineral Economics* 33:1-2 (July 2020), pp. p. 153–181, <https://link.springer.com/journal/13563/volumes-and-issues/33-1>.

²³⁵ This section builds heavily on: https://ec.europa.eu/growth/sectors/raw-materials/policy-strategy_en.

²³⁶ The Raw Materials Initiative. Meeting Our Critical Needs for Growth and Jobs in Europe, COM(2008)699 final, Brussels, 4 November 2008, <https://eur-lex.europa.eu/legal-content/EN/TEXT/?uri=CELEX:52008DC0699>.

The EIP on raw materials²³⁷ is the major EU initiative implementing the RMI stakeholder platform that brings together EU countries, companies, researchers, and NGOs to promote innovation in the raw materials sector.

The main objective of the partnership is to help raise industry's contribution to the EU's gross domestic product (GDP) to around 20% by securing its access to raw materials. It will also play an important role in meeting the objectives of the Commission's flagship initiatives Innovation Union and Resource-Efficient Europe. It will do this by ensuring the sustainable supply of raw materials to the European economy while also increasing benefits for society as a whole.

The EIP developed its strategic implementation plan with 95 actions to foster innovative solutions. These may be technological or non-technological. Specific actions include research and development, addressing policy framework conditions, disseminating best practices, building a knowledge base, and fostering international cooperation.

Centered in the knowledge triangle of education, research & development, and innovation, the knowledge and innovation community European Institute of Innovation and Technology (EIT) RawMaterials was established in 2015.²³⁸ EIT RawMaterials vision is to develop raw materials into a major strength for Europe. The mission of EIT RawMaterials is to enable sustainable competitiveness of the European minerals, metals, and materials sector along the value chain by driving innovation, education, and entrepreneurship.

This will be realized through integrating knowledge from industry, higher education, and research by engaging stakeholders from the entire raw materials value chain. EIT RawMaterials will promote increased resource efficiency and the improvement of processes and products, support the introduction of new, innovative technologies, and rethink our current linear economic model to move towards a circular approach. Further focus areas are to increase human capital in the raw materials sector and promote entrepreneurial education at all levels.

In the meanwhile, EIT RawMaterials is the world largest raw materials network. EIT RawMaterials connects more than 120 core and associate partners

²³⁷ For more, see: https://ec.europa.eu/growth/sectors/raw-materials/eip_en.

²³⁸ For more, see: <https://eitrawmaterials.eu/>.

and over 190 project partners of leading businesses, universities, and research & technology organizations from over 20 EU countries.

To further develop the Raw Materials Initiative and implement the EIP on raw materials, the European Commission has recently adopted three additional policy instruments:

- **European Raw Materials Alliance:** In September 2020, the Commission adopted an Action Plan on Critical Raw Materials,²³⁹ presenting 10 concrete actions to tackle vulnerabilities in raw materials supply chains. With Action 1 it launched an industry-driven European Raw Materials Alliance on September 29, 2020. The European Raw Materials Alliance will diversify supply to achieve open strategic autonomy in the rare earths and magnets value chain. At a later stage, it could expand to other critical raw material and base metal needs. The alliance involves all relevant stakeholders, including industrial actors along the value chain, EU countries and regions, trade unions, civil society, research and technology organizations, investors, and NGOs. It identifies barriers, opportunities, and investment cases to build capacities at all stages of the raw materials value chain, from mining to waste recovery.
- **Strategic Partnerships on Raw Materials:** The Action Plan²⁴⁰ announced that the EU should engage in strategic partnerships with resource-rich third countries, making use of all external policy instruments and respecting its international obligations. Action 9 entails the development of strategic international partnerships and associated funding. It aims to secure a diversified and sustainable supply of critical raw materials, including through undistorted trade and investment conditions. Pilot partnerships with Canada and interested countries in Africa and the EU's neighborhood were launched in 2021.
- **Circular Economy:**²⁴¹ The European Green Deal's Circular Economy Action Plan, adopted in March 2020, aims to decouple growth from resource use through sustainable product design and mobilizing the potential of secondary raw materials. Moving towards a more circular economy could bring a net increase of 700,000 jobs in the EU by 2030. Circularity and

²³⁹ *Critical Raw Materials Resilience: Charting a Path towards Greater Security and Sustainability.*

²⁴⁰ *Ibid.*

²⁴¹ *A New Circular Economy Action Plan. For a Cleaner and More Competitive Europe, COM(2020)98 final, Brussels, 11 March 2020, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0098>.*

recycling of raw materials from low-carbon technologies is an integral part of the transition to a climate-neutral economy. Increasing product lifetime and use of secondary raw materials through a robust and integrated EU market and retention of value of high-grade materials will help to cover a growing share of the EU's raw materials demand. The EU is at the forefront of the circular economy and has already increased its use of secondary raw materials. For example, more than 50% of some metals such as iron, zinc, and platinum are recycled, and they cover more than 25% of the EU's consumption. For others, however, especially those needed in renewable energy technologies or high-tech applications such as rare earths, gallium, or indium, secondary production makes only a marginal contribution. This is a huge loss of potential value to the EU economy and a source of avoidable strain on the environment and climate.

The Future Direction of Austria's Raw Materials Policy

Raw materials determine our modern everyday life and thus form the basis for numerous products, such as the creation of housing, the manufacture of medical products, the expansion of infrastructure, and innovations in the field of technology. Raw materials are also considered as essential building blocks for the transformation of our energy systems and mobility, because without a sufficient supply of rare earths for wind turbine generators, semiconductor metals for photovoltaic cells, or catalyst metals for "green" hydrogen production, the goal of climate neutrality cannot be achieved.

As one of the largest economic sectors in Austria, mining and the Austrian raw materials production and processing industry contribute about 25% to Austria's value added and thus secure about 1 million jobs. The steel manufacturing industry is one of Austria's main branches of raw material production and processing. Primary supplier countries of iron ore are Brazil, Chile, and Australia. Australia and China provide significant amounts of copper and other non-ferrous metals. Raw materials necessary for the green energy and mobility transformation are mainly provided by China (REE's, semiconductor metals), Chile (copper and lithium), and Australia (also lithium).

The domestic extraction and processing of raw materials also contributes significantly to regional value creation. Austria is quarrying mainly aggregates

and industrial minerals. Additionally, Austria is the seventh largest producer of tungsten and magnesite globally.

Austria's prosperity and the innovation of its science and industrial base depends on resource supply security. That's why Austria follows a two-pronged approach that emphasizes the role of the domestic resource base in addition to strengthening and securing agreements to ensure international security of supply. Only a combination of these aspects can meet the demand for raw materials and at the same time strengthen the resilience of the domestic raw materials sector.

To this purpose, the Federal Ministry of Agriculture, Regions and Tourism has developed a Master Plan Raw Materials 2030. The objectives are:

- A responsible and secure supply of Austria with primary and secondary raw materials
- The expansion of Austria as a business location in order to remain competitive on an international level, to strengthen future domestic value creation, and to secure prosperity and a high quality of life
- Balanced sustainable, efficient, and careful use within the framework of a circular economy
- Strengthening the resilience of the raw materials sector along value chains to reduce future supply risks
- Creating framework conditions for expanding the extraction of secondary raw materials from recyclable products
- The acceleration of research, technological development, and innovation through existing and new funding programs
- The further development of Austria's high social, environmental, and production standards
- The strengthening of standards of corporate responsibility

Furthermore, decarbonization is increasing Austria's industrial demand for electrical energy. To keep Austria fit for the future as an industrial location in terms of raw materials, it is also necessary to ensure a sustainable, secure, and affordable, and thus competitive, supply of energy.

The demand for raw materials has changed significantly in recent decades. To meet tomorrow's increasingly complex technological requirements, Austria's economy must step up efforts to implement the principles of the circular economy. To this purpose, Austria's Master Plan Raw Materials 2030 rests on three pillars:

- Pillar 1: Sustainable supply from domestic sources
- Pillar 2: Sustainable supply from international supplier sources
- Pillar 3: Smart production, circular economy, and new value-adding technologies and products

These pillars constitute the core framework of the Master Plan. In addition, the Master Plan leverages the contribution of several cross-cutting issues, such as acceptance of mining operations, sustainability, digitalization and automation in industry and administration, research and development, education and training, as well as dialog, foresight policy, and a comprehensive analysis of all developments relevant for the implementation of the three pillars.

Complex geopolitical and economically challenging situations are forcing the development of strategic alliances in accordance with the European Union's Strategic Partnerships on Raw Materials (as with Ukraine and Canada). These situations necessitate strong trade and foresight policies. This can only be achieved by the successful and prudent cooperation of all relevant institutions and partners.

The Raw Materials Master Plan 2030 will essentially be aligned along the entire raw material value chain. This value chain includes the extraction and processing of primary raw material, the smart development of products and their use, and the reintroduction of used products into the life cycle as a secondary raw material through sorting and recycling. In this way, the life of raw materials can be maximized and their value increased and exploited to their full potential.

12

Green New Deal: Europe's Geoeconomic Joker?

Kirsten Westphal

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The commitment to the Paris Agreement has been reinforced in the past months by a number of global players.²⁴² In 2019, the European Commission made the pledge to become climate-neutral by 2050, a pledge that was joined in early 2021 by the new U.S. administration under President Joe Biden. China had announced its goal to achieve carbon-neutrality by 2060 at the end of 2020, and other Asian countries did the same. This list could be continued.

The Paris Agreement and the consecutive Conference of the Parties (COP) and the United Nations Framework Convention on Climate Change (UN FCCC) reports have highlighted the urgency of climate change mitigation. Consequently, the energy system has to be transformed in a rapid and rigorous manner. Art 2.1 of the Paris Agreement stipulates that the nationally determined contributions should be formulated in line with the goal to keep global warming well below the 2 degrees centigrade compared to industrial level and pursue limiting the temperature increase to 1.5 degrees. Besides climate change mitigation, there is the broader goal of sustainability and respecting the planetary boundaries. At the UN level, the Sustainable Development Goals are set. Sustainable Development Goal 7 aims to provide "affordable and clean energy"²⁴³ by 2030 for then 8.5bn people. The COVID-19 pandemic has made the goal of sustainable growth more acute given its socio-economic consequences. A transformation of the energy system has been defined in the EU as an approach to "build back better." The EU's "Next Generation" recovery program worth €750bn is to lay the ground for better life conditions for future generations.

At first sight, these renewed ambitions to address climate change seem to suggest that addressing climate change might serve as an ultimate geoeco-

242 This article is an updated and condensed version of the following publications: Kirsten Westphal, *Global Energy Governance: Meeting the Challenge of the Energy Transition*, in *The Geopolitics of Energy: Out with the Old, In with the New* (Oxford: Oxford Institute for Energy Studies, 2021), pp. 9-12, <https://www.oxford-energy.org/publications/oxford-energy-forum-the-geopolitics-of-energy-out-with-the-old-and-in-with-the-new-issue-126/>; Kirsten Westphal, „Zwischen Green Deal und Nordstream. Europäische Energiepolitik 2020,“ *Europäische Politik und Zeitgeschichte*, May 29, 2020, <https://www.bpb.de/apuz/310565/europaeische-energiepolitik-2020>; Kirsten Westphal, „Strategic Sovereignty in Energy Affairs. Reflections on Germany and the EU's Ability to Act,“ *SWP Comment 2021/C 07* (Berlin: SWP/German Institute for International and Security Affairs, 2021), <https://www.swp-berlin.org/10.18449/2021C07>; Maria Pastukhova, Jacopo Pepe and Kirsten Westphal, „Upgrading the EU's Energy Diplomacy for a New Era,“ *SWP Comment 2020/C 31* (Berlin: SWP/German Institute for International and Security Affairs, 2020), <https://www.swp-berlin.org/en/publication/beyond-the-green-deal-upgrading-the-eus-energy-diplomacy-for-a-new-era>; Andreas Goldthau, Martin Keim and Kirsten Westphal, *The Geopolitics of Energy Transformation: Governing the Shift: Transformation Dividends, Systemic Risks and New Uncertainties*, *SWP Comment 2018/C 42* (Berlin: SWP/German Institute for International and Security Affairs, 2018), <https://www.swp-berlin.org/en/publication/the-geopolitics-of-energy-transformation>.

243 For more on the UN Sustainable Development Goals, see: <https://sdgs.un.org/goals>.

nomic leveler. Theoretically, the energy transformation will also streamline the national energy mix in one direction: towards greater use of renewable sources and electrification. This is a long way to go, however. Moreover, the idea that the globe is joining forces to mitigate the climate crises and to achieve a sustainable development is an ideal. Instead, the energy transitions pathways as well as the recovery and growth models look very different across the globe. There are good arguments to assume that this will most likely add to more unevenness, heterogeneity, and fragmentation. This will fuel competition over winning economic models. Whether the EU's bet on the Green Deal as a pathway towards sustainable growth for the next generation will also strengthen its geopolitical position as well as its geoeconomic clout is open.

The EU's Green Deal

The EU Commission under Ursula von der Leyen has committed the EU to become a climate-neutral continent by 2050. Thus, the Green Deal not only encompasses the EU but talks about Europe; both internal and external dimensions must be taken into account. The Commission, which was elected at the end of November 2019, wants to implement a global leadership role for the EU and act geopolitically during its term of office until 2024. The Green Deal also represents the EU's new growth and recovery strategy with the Next Generation EU program.

The Green Deal makes the energy transformation in Europe a priority goal, because the energy sector is responsible for over two thirds of the emissions. However, the European Green Deal moves beyond an integrated energy and climate policy that was achieved in 2007. It establishes a new green strategy for the environment, industry, and the economy, intended to create a reliable framework for investment in the long term. It also aims to strengthen the EU economy in international competition and at the same time make it more resilient to climate impacts. Innovation in key sectors is seen as a crucial building block for success.

The main components stem from the goal of reducing greenhouse gas emissions by at least 55% by 2030 compared to the 1990 level on the way to climate neutrality by 2050. This implies that the efforts go well beyond the energy sector, as the EU's overall economy has to become circular, clean, and competitive. Most importantly, the European Sustainable Investment Plan

foresees the provision of €1trn in funding for the transformation of the economic and energy system by 2030.²⁴⁴ In addition, there is a new Biodiversity Strategy for 2030 and an Action Plan for an improved circular economy, which is part of the new Industrial Strategy. The Industrial Strategy presented in March 2020 and updated in May 2021 underlines the importance of the social market economy in Europe and has the declared aim of keeping European industry competitive in the global context.²⁴⁵ A major component is the Just Transition Mechanism, which also includes a fund to cushion the consequences of the economic transition to climate neutrality and a circular economy.

Subsequently, the EU Emissions Trading Scheme (ETS) is to be reviewed "where necessary" in the energy and industrial sectors and possibly extended to the transport and building sectors, and the targets of the member states in sectors outside the ETS are to be reviewed. Further measures are to be integrated into the mobility strategy to make transport by land, water, and air more sustainable – including cleaner fuels and the expansion of electric charging infrastructure and rail transport. Accordingly, the "Fit for 55" package was launched on July 14, 2021 with a number of proposals.

Overall, "Fit for 55" specifies how the climate targets of the Paris Agreement are to be implemented in the EU.²⁴⁶ The high ambitions to restructure the energy sector, European industry, and the national economies, become clear, because it is to be based on a clean, competitive, circular economy. The EU is thus facing a "great transformation" in a way described by economic historian and social scientist Karl Polanyi: It should and will fundamentally change political, economic, and social coexistence and is associated with enormous structural breaks, redistribution effects, and system upheavals.

There is an obvious time lag between the costs and the benefits of the energy transition, which poses a real political challenge. In view of the unprecedented transformational task, high upfront investments are needed, even if the long-term transformational benefits range from human safety and health to the low operational costs of renewable energy, which can be harvested at virtually zero cost. It is in the short-term costs where the question of Euro-

244 „The European Green Deal Investment Plan and Just Transition Mechanism Explained," European Commission, January 14, 2020, https://ec.europa.eu/commission/presscorner/detail/en/qanda_20_24.

245 *Updating the 2020 New Industrial Strategy: Building a Stronger Single Market for Europe's Recovery*, COM(2021) 350 final, Brussels, May 5, 2021, https://ec.europa.eu/info/files/communication-updating-2020-new-industrial-strategy-building-stronger-single-market-europes-recovery_en.

246 For more, see: „Delivering the European Green Deal," European Commission, undated https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/delivering-european-green-deal_en.

pean competitiveness is acute, whereas in the long run, great opportunities arise from a successful green growth model. An exclusive European effort is expensive and could lead to fault lines at the external borders.

The European Green Deal comes at a time when the global economy is characterized by growing geoeconomic rivalries and, above all, Sino-American strategic competition. This contributes not only to the growing erosion of the liberal order and its regulatory system but also results in an orientation towards short-term relative competitive advantages.

Growing systemic competition has far-reaching consequences not only for the EU's global stance but also for the outcomes of the Green Deal itself. The EU as a political community is based on law (the *Acquis Communautaire*) internally, and it is externally oriented towards a rule-based, norm-bound environment. Moreover, the EU's internal market is integrated into the globalized world economy, the international division of labor and interdependencies. Yet, trends of de-globalization are unfolding, which puts supply chains in the spotlight. The COVID-19 pandemic has added to the trend to scrutinize supply and value chains due to dependence on foreign suppliers. Geoeconomics, that is, the fact that economic strength, technological supremacy, and comparative advantages are understood and instrumentalized as a currency of power, is on the rise. This results in decoupling, reshoring, and protectionism and a geospatial reorganization of the world order.²⁴⁷

The EU's Green Deal implies new regulatory fault lines at its borders, such as the Carbon Border Adjustment Mechanism. It also has an exclusive spin, because the EU's industry is faced with new climate, industrial, and social standards and a "great transformation." Externally, its rules, norms, and standards either need to be transposed or Border Adjustment Mechanisms have to be put in place to protect the EU's industries and to implement internally the Green Deal. As the energy sectors accounts for more than 70% of Green House Gas Emissions, the impact is huge. Moreover, the supply of green, competitive, and secure electrons and molecules has to happen in due time, otherwise energy-intensive industries might relocate themselves, and carbon leakage will be the consequence.

²⁴⁷ See also the chapter by Heiko Borchert in this volume.

The Impact of the Green Deal on EU's Energy System

From a global perspective, low-carbon transformation is likely to render the energy system more sustainable but also much more heterogeneous. The conventional energy system, as it exists today, has been gradually shaped over a long period of time by global trade in crude oil, coal, and liquefied natural gas as well as by the combustion engine, which dominates transport. Therefore, it is relatively homogenous in nature. With the transformation of energy systems, however, the specific characteristics of individual countries and regions come to the fore more prominently. It is the geographical position (and the renewable energy endowment); the – often differing – political ambitions and state capabilities; national preferences in the energy mix (e.g., renewables, nuclear energy, or the use of gas); as well as the different approaches in the mobility sector that will determine the shape of a specific system and thus also the scope and the duration of the transformation.

For the EU, climate protection has become the predominant paradigm for energy policy. This implies a paradigmatic shift in comparison to the past two decades, when the strategic triangle was formed of the “trinity” of climate and environmental compatibility, competitiveness, and security of supply.

The EU-27 energy mix is still met 35.9% by oil, 24.5% by natural gas, 10.6% by coal, 11.0% by nuclear, and 12.5% by renewables.²⁴⁸ For a transitional period, the supply of fossil fuels from abroad must be politically flanked to maintain energy security without perpetuating the conventional energy supplies. In parallel, the energy system must be decarbonized.

The energy transformation with its emphasis on energy efficiency, renewable energy as a source for green electricity and molecules will have major effects: First, the energy transformation recalibrates value chains. In a low-hydro-carbon – i.e., decarbonized – energy system, the economic value is no longer generated primarily from exploiting (fossil) resources. Rather, it is accrued at the stage of conversion into end-use energy and energy services. This, in turn, means that the ability to generate profits will hinge on the availability and use of low-carbon technologies.

²⁴⁸ *Statistical Review of World Energy 2021* (London: BP, 2021), <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2021-full-report.pdf>.

Second, the energy transformation will yield new energy spaces, defined by infrastructure, production chains, and industrial clusters. This geospatial effect results from technological change as well as shifts in the energy mix, for example in the shape of local micro grids or region-spanning super grids, transnational and regional interconnectors, such as those promoted by China's Belt and Road Initiative. The existing boundaries of contemporary energy systems will be blurred. The EU's continental synchronized electric grid might increasingly be extended into the neighborhood, providing an example for the newly shaped energy landscape.

Third, today's focus still rests on individual sectors (i.e., electricity, buildings, transport, industry), each characterized by a dominant mix of (fossil) fuels. In contrast, the future focus will be on sector coupling. Integrating electricity, heat, and mobility will reinforce the relocation and reconfiguration of energy spaces.

Key technologies are moving to the center of the energy transformation. Going forward, economic growth will rest on "technology rents," and these could become the decisive driver for the future welfare of societies but also for the success of the global transformation of energy systems. Yet, these technology rents depend on the social acceptance of new technologies, such as Carbon Capture Storage and Usage or new generations of nuclear reactors. Moreover, it is important to emphasize that "resource rents" and "technology rents" render different political and economic systems. Resource rents have been related to rent-seeking systems in oil-abundant states with authoritarian regimes. Technology rents are very different in scope; they tend to be smaller, less volatile and limited by recurring investment cycles. This all suggests that the energy transformation will result in power shifts between states and economic sectors.

The IEA is right in moving the issue of international cooperation to the forefront.²⁴⁹ A precondition for a deep and rapid decarbonization is that states cooperate. If they do not, the result may well be a race to the bottom and national unilateralism. This is the ambivalence that characterizes the geo-economics of the ongoing shift within global energy systems.

249 *Net-Zero by 2050, A Roadmap for the Global Energy Sector* (Paris: IEA/OECD, 2021), p. 24f., <https://www.iea.org/reports/net-zero-by-2050>.

At first glance, the EU might be well placed for the energy transition with industrial and technology policy moving to center stage. Yet, the EU is also highly integrated and dependent on globalized supply chains. This has come under scrutiny, in terms of both identifying vulnerabilities and setting new climate as well as environmental, social and governance standards, which means that the raw materials and goods supplied must be either certified or subject to a border adjustment mechanism. Third, the “system split” in IT technologies driven by Sino-American great power competition is something to which the EU has to position itself. Lastly, there is the great challenge for Germany and the EU to maintain the competitiveness of the industry and the locations. This requires EU standards such as CO₂ pricing to be adopted in as many parts of the world as possible and. In addition, climate-neutral raw materials and energy sources such as hydrogen and its derivatives need to become available promptly, reliably, and at such prices that energy-intensive industries do not relocate. The “renewables pull” could lead to energy-intensive industries migrating to regions and countries with location advantages for renewable energies. This in turn, could reinforce the geopolitical and geoeconomic dynamics between regions and marketplaces.

Energy Sovereignty and the Geopolitics of Energy Transformation

Strategic autonomy of the EU has been raised as a leitmotif for foreign and security policy and military capabilities. It will be argued here²⁵⁰ that for the EU, the formulation of strategic interests, priorities for action and options for shaping energy policy, is becoming increasingly important in view of the fundamental upheavals in international politics, especially in face of the geo-strategic rivalry between China and the United States. China's industrial and connectivity policies, the role of the United States in the energy markets, and energy transformation are rapidly changing the global energy landscape and tipping the balance of power. The COVID-19 pandemic has accelerated and reinforced these trends.

Strategic sovereignty in the energy realm results from sufficient and reliable energy supplies at economic prices and when energy supplies and services are

250 A longer text version can be found here: Kirsten Westphal, „Strategic Sovereignty in Energy Affairs. Reflections on Germany and the EU's Ability to Act,” SWP Comment 2021/C 07 (Berlin: SWP/German Institute for International Security Affairs, 2021), <https://www.swp-berlin.org/10.18449/2021C07/>.

provided in a way that does not conflict with or even endanger the country's own values, interests, and foreign policy goals (Daniel Yergin). Sovereignty in energy matters is therefore not simply synonymous with supply security. Rather, a technically robust energy system that is resilient in crises and against political influence is the basis for strategic autonomy and capability to act. Yet, there is a circular effect to be noted, as sovereignty is a necessary but not solely sufficient precondition to guarantee sustainable energy security over time.

The strategic room for maneuver is determined by how energy security is continuously dealt with and guaranteed. This requires the highest possible degree of flexibility, diversification, and as many options as possible at hand. The existing and future energy supply should allow states to pursue their own climate and energy, foreign and security policy priorities and decide accordingly. In doing so, states must have the institutional, political, and material means to implement these priorities in cooperation or, if necessary, on their own.²⁵¹

To establish, maintain, and expand the strategic capability to act, dependence must be reduced where it leads to vulnerability. However, autonomy should in no way be confused with autarchy. On the contrary: Strategic partnerships and mutual relations may well help to increase the scope for action. The ability to act in a strategically self-determined manner always grows in relation to others and the environment. Most importantly, strategic sovereignty has an internal dimension, too, because goals, interests, and guiding principles should be clearly defined. This requires a basic consensus within the EU that has to be shaped and maintained over time, also in terms of energy solidarity.

EU's Green Deal and its Traditional Energy Suppliers

The EU's Green Deal will reshape trade and import patterns profoundly. If the EU is to meet the -55% goal by 2030, and climate neutrality by 2050, the impact on its fossil fuel consumption will be tremendous.

The most immediate effects of decarbonization policies are expected on coal and oil. The geoeconomic and well geopolitical dimension of phasing out the

²⁵¹ Barbara Lippert, Nicolai von Ondarza, and Volker Perthes (eds.), *European Strategic Autonomy. Actors, Issues, Conflicts of Interests* (Berlin: SWP/German Institute for International Security Affairs, 2019), <https://www.swp-berlin.org/en/publication/european-strategic-autonomy/>.

consumption of oil is huge for EU's primary suppliers. They are losing their major export market. Among the countries most affected are Algeria, Libya, Egypt, Azerbaijan, Kazakhstan, Norway, and of course Russia. This may have destabilizing effect on their economies and political systems.²⁵²

The EU, in turn, will face traditional challenges for energy security in the mid-term and will have to partner for a successful sustainable energy transformation. Currently, expensive oil production projects in the North Sea and Norway – and thus in geopolitically stable regions – will be less commercially viable given the relative low oil prices as a consequence of the COVID-19 pandemic. To a certain extent, the COVID-19 pandemic advances anticipated effects of energy transformation. In that sense, the pandemic could have a catalytic effect, as the above-mentioned challenges underpin the EU's need for an orderly exit from oil and highlight the necessity to manage this cooperatively with its big suppliers, which are deeply affected by the demand plunge and price fall, which in turn causes instability in the EU's neighboring regions.

Moreover, Russia is also ranking first among the countries that will be affected most by the Carbon Border Adjustment Mechanism, because iron and steel, aluminum, fertilizers, and electrical energy will be covered.²⁵³ This potential trade rift between the EU and Russia will add to an already highly politically loaded and strained relationship.

Natural gas seems to gain share for a transitional period up to 2030 due to the coal–gas switch in electricity generation and in the industry. However, it is also a fossil fuel, and the decarbonization of the gas value chains is on the agenda, too. Biomethan, hydrogen, and synthetic gases are seen as climate neutral molecules. Russia here again is in spotlight, even though the EU market has become increasingly diversified over the past years; imports via pipelines continue to be dominated by Russia, Norway, and Algeria, but the share of LNG has reached 28%.

Natural gas carries the geopolitical burden. Geopolitics and geoeconomics are increasingly intertwined. In the EU gas market, the principle of solidarity has been translated into EU secondary legislation through the prevention and

252 Mark Leonard, Jeremy Shapiro, Jean Pisany-Ferry, Simone Tagliapietra and Guntram Wolff, *The Geopolitics of the Green Deal* (Brussels: Bruegel, 2021), <https://www.bruegel.org/2021/02/the-geopolitics-of-the-europe-an-green-deal/>

253 Elisabetta Cornago and Sam Lowe, „Avoiding the Pitfalls of an EU Carbon Border Adjustment Mechanism,” *CER Insight*, July 5, 2021, <https://www.cer.eu/insights/avoiding-pitfalls-eu-carbon-border-adjustment-mechanism>. See also the chapter by Dmitri Trenin in this volume.

crisis mechanisms. These were tested during the 2012 cold spell.²⁵⁴ Moreover, the 2014 and 2017 stress tests showed a relatively high degree of resilience if the EU states cooperate.²⁵⁵ From the German perspective, market and crisis mechanisms can therefore be relied upon. For the Eastern European EU members, however, the focus has been on energy sovereignty. This meant above all diversification away from Russia, but also first and foremost integration into the global and not just the EU market. The German government did not perceive imports from Russia as problematic in terms of economic vulnerability, but rather regarded them as part of mutual interdependencies and as the basis of creating common interests. In other member states, on the other hand, the issue was increasingly "securitized," i.e., economic issues of supply security were linked to broader security issues. The "compartmentalization" propagated by Germany and Austria, i.e., the limitation of the topic to purely economic issues, especially in relation to Russia, therefore did not find sufficient support in the EU. With regard to sovereignty, there are thus very different approaches within the EU. Germany faces the dilemma that its ideas are not shared but that Berlin will foreseeably need cohesion in the Union to ensure joint action and achieve energy security.

The process of change adds to the imponderables.²⁵⁶ The systemic transformation requires structural breaks. The phase-out of fossil fuel imports may result in more autonomy but not necessarily more scope for shaping the future, as relevant channels of international reconciliation of interests, cooperation, and dialogue are lost. In addition, there is the real risk for conflicts during the "stage of divorce."

The Transatlantic Relationship

With the Biden administration in office, the transatlantic partnership has been revived.²⁵⁷ The United States was a partner of the Europeans for decades, and

254 Kirsten Westphal, *Security of Gas Supply. Four Political Challenges under the Spotlight*. SWP Comment 2012/C17 (Berlin: SWP/German Institute for International and Security Affairs, 2012), <https://www.swp-berlin.org/en/publication/security-of-gas-supply/>.

255 *Security of Supply Simulation Report. SoS Simulation Report 2017* (Brussels: European Network of Transmission System Operators for Gas, 2017), https://www.entsog.eu/sites/default/files/entsog-migration/publications/sos/ENTSOG%20Union%20wide%20SoS%20simulation%20report_INV0262-171121.pdf.

256 Andreas Goldthau, Martin Keim, and Kerstin Westphal, *„The Geopolitics of Energy Transformation. Governing the Shift: Transformation Dividends, Systemic Risks and New Uncertainties*. SWP Comment 2018/C42 (Berlin: SWP/German Institute for International and Security Affairs, 2018), <https://www.swp-berlin.org/en/publication/the-geopolitics-of-energy-transformation/>.

257 See also the chapter by Daniel S. Hamilton in this volume.

together these two major consumer centers had formed the nucleus of an "energy security community" under the umbrella of the International Energy Agency (IEA). In terms of security policy, Europe profited from the United States, which guaranteed free sea lanes and trade routes, including from the Middle East and the Caspian region.

Yet, the legacy of the Trump administration remains. First, the United States is a divided country, and climate and energy policies constitute a major cleavage. Second, the liberal principle of free trade in (energy) goods has lost its appeal today because the United States has been instrumentalizing its nodal role in global financial flows and the role of the dollar as the dominant currency to achieve foreign and economic policy goals. This is exemplified by Washington's unilateral sanctions against Russia, Iran, and Venezuela. The secondary effects of unilateral U.S. sanctions affect European multinational oil and gas companies, whose scope of action is being reduced in favor of state-owned corporations from Asia and the Middle East – a trend that the COVID-19 pandemic might intensify even further, as state-owned corporations can draw on state funds.

The shock for Europeans that has resulted from U.S. policy is so profound because it relentlessly highlights the new situation: The "energy economic West" no longer exists. For decades, the capability to act in energy policy and the resilience in times of crisis was established in alliance with the United States. Not only is the most important partner lost but its policies also reveal the EU's own lack of capability to act.

The new situation of energy self-sufficiency and abundance in the United States has deprived the alliance of interests of its essential basis. Even if it is unlikely that the Biden administration will be exploiting as rigorous foreign (economic) policy options as the Trump administration did, the gap between the EU and the United States will persist. In comparison to the EU, the United States in any case will remain self-sufficient and may transform its energy abundance by rapidly expanding renewables and developing future technologies. A "transatlantic climate alliance" does not change the picture. The United States is rich in solar radiation, wind potential, and space. The United States is also open and tech-savvy, whereas the EU is more skeptical.

Green Electrons and Molecules: New Interconnectivities and their Geospatial Implication

From a climate and environmental perspective, the transformation of the energy system is urgent. Once implemented, it will offer more political room for maneuver, because renewable sources, which are available everywhere, will provide energy locally and decentrally.

In the future, energy relations will be driven far more by political decisions than in the past, when the geological availability of oil and gas had a structural effect. One example is electricity grids; the decision to (synchronously) interconnect is based on a joint political decision. Synchronized electric "grid communities" share all risks and benefits. Interconnectivity in electricity has become a major factor for shaping new energy spaces, and it is also an important vector established in parallel to new logistic and value chains, which are part of China's Belt and Road Initiative.

In those economic sectors where direct electrification is not possible, climate-neutral molecules will play an important role in the future.²⁵⁸ Here, too, more diversification is conceivable, because climate-neutral hydrogen and its derivatives can be produced and transported in various ways using different processes and therefore in many places around the world. This creates flexibility and opens scope for action but requires international cooperation.

The geospatial impact of phasing in "green" electrons and molecules is regional. The trade and import relations will contract: Electrons will be mostly transported and traded within the EU's synchronized grids. Offshore wind parks in neighboring regions such as the North, the Baltic, the Black Sea, and the Mediterranean will be connected to the EU via electricity corridors.²⁵⁹ The new energy world will be composed of "electric grid communities" that are connected to sweet spot of renewables energies creating a hub and spoke system around new economic and industrial centers. Former peripheries such as North Africa, the Black Sea, and the Mediterranean will become "connec-

258 Kirsten Westphal, Susanne Dröge and Oliver Geden, *Die internationalen Dimensionen deutscher Wasserstoffpolitik (SWP: German Institute of International and Security Affairs, 2020)*, <https://www.swp-berlin.org/publikation/die-internationalen-dimensionen-deutscher-wasserstoffpolitik/>.

259 Kirsten Westphal, Maria Pastukhova and Jacopo Pepe, *Geopolitik des Stroms. Netz, Raum und Macht* (Berlin: SWP/German Institute for International and Security Affairs, forthcoming).

tivity spaces," where old and new industrial centers compete over the access to and transport vectors of green electrons and molecules.

Interconnectivity and the emergence of transport and logistic corridors constitute a new field for international competition over influence and power.²⁶⁰ China has already established itself as a major player. Finally, the transformation of the energy system requires access to and availability of metals and rare earths, as well as their further refinement and processing. These value chains bring new vulnerabilities, as they are sometimes dominated by a few companies, including those in China.

China: The Systemic Challenge

Beijing's Belt and Road initiative redefines global interdependence and establishes channels of influence. The vectors and dynamics of networking are being directed towards China. This connectivity strategy provides Beijing with access to and control of central nodes of energy and communication networks. Beijing uses these new techno-political spheres of influence beyond territorial space to project political power and authority.²⁶¹ The new antagonism of space versus network increasingly determines the dynamics – also in the EU's neighborhood.

The transformation of the energy system associated with a growing importance of industrial and technology policy creates new challenges. In the modern sustainable energy system, economic value is no longer generated with the energy resource but at the stage of conversion into end energy and services by using technologies.²⁶²

Consequently, clean energy technologies and energy-related innovation are becoming a component of geoeconomic competition. For the EU, the question of energy technology sovereignty/autonomy is acutely relevant and linked to the control and availability of critical raw materials but also to (future) key technologies and skills. There are no simple answers to the question of which technologies and which know-how will be strategically so important

²⁶⁰ See also the chapter by Björn Fägersten and Tim Rühlig in this volume.

²⁶¹ Matthias Schulze and Daniel Voelsen, „Digital Spheres of Influence,” in Barbara Lippert and Volker Perthes (eds.), *Strategic Rivalry between United States and China* (Berlin: SWP/German Institute for International and Security Affairs, 2020), pp. 30–34, <https://www.swp-berlin.org/10.18449/2020RP04/>.

²⁶² Goldthau/Keim/Westphal, *The Geopolitics of Transformation*.

that it should be localized in the EU. There is an inherent tension between technological sovereignty, climate mitigation, and efficiency, no doubt. At the same time, value creation in Europe is central to socioeconomic welfare but also key to fulfilling the promise of green growth and green jobs.

What is clear, however, is that over the past decade China has placed itself in a key position in energy technologies such as photovoltaics, batteries, e-mobility, and concentrated solar power tower plants. Chinese companies offer platforms and system solutions; they bundle smart applications through their supremacy in the mobile Internet (5G), as well as in transmission networks and transformer stations. The Middle Kingdom dominates the value chains for solar panels, from mining to refining the raw materials that are required to manufacture the plants. China produces over 70% of solar modules.²⁶³ A Bertelsmann study on world-class patents shows how rapidly China is expanding its position in innovation-driven energy sectors.²⁶⁴ Germany has lost its top position in photovoltaics to China. In batteries, China holds nearly 11% of the world's patents and ranks third behind Japan and Korea, whereas Germany – with a downward trend – holds 7.5%.

When it comes to a strategic roll-out of infrastructure and technology, Beijing is throwing the size of its market into the balance. Abroad, China uses a state-orchestrated toolbox based on tight or direct control of companies. It offers package deals, which lever loans, planning, organization, and implementation as well as technical system solutions in a "one-stop shop."

Since the financial crisis of 2008/2009, Beijing has invested in (critical) infrastructure and key technologies in the EU. This should not be repeated after the COVID-19 pandemic. Beijing's strategies Made in China 2025 and China Standards 2035 are clearly formulated. With its hunger for innovation, China continues to focus on localizing high tech and achieving technological leadership. The country wants to set the standards in future technologies. Meanwhile, Beijing can build on advantageous path dependencies in information technologies, whereby two critical infrastructures, namely, energy and telecommunication/ information technology, are currently becoming increasingly intertwined.

263 „Coronavirus Is Starting to Slow the Solar Energy Revolution," Bloomberg, February 27, 2020, <https://www.bloomberg.com/news/articles/2020-02-27/coronavirus-is-starting-to-slow-the-solar-energy-revolution>.

264 Jan C. Breiting, Benjamin Dierks and Thomas Rausch, *Weltklassepatente in Zukunftstechnologien. Die Innovationskraft Ostasiens, Nordamerikas und Europas* (Gütersloh: Bertelsmann Stiftung, 2020), https://www.bertelsmann-stiftung.de/fileadmin/files/user_upload/BST_Weltklassepatente_2020_DT.pdf.

Conclusions

Whether the EU's Green Deal will serve as a geopolitical joker depends greatly on a corresponding environment and on whether other major countries will embark on the same ambitious track as the EU. In any case, the EU has to check out its toolbox, which so far has been limited to ordoliberal instruments and energy diplomacy. The EU has linked its most important instrument – regulation – to its own legal area and to the “community of law” within the framework of the European Energy Community. The sovereignty of nation states is bound to territory. Yet, territoriality as a principle of order and power is in retreat. Modernization and restructuring of the energy system lead to the decoupling and recoupling of energy networks, and energy systems create new infrastructure spaces that no longer coincide with jurisdictions. Regulation then takes place along techno-political and territorially unbound spheres. Moreover, accelerated and reinforced cooperation requires a minimum set of mechanisms, norms, and standards. The ability to act depends on the availability and control of new key technologies; political authority can be weakened. Space, role, and rulemaking are changing to the extent that classical security policy and control over geographical spheres of influence are shifting towards the control of flow processes of goods, knowledge, capital, and information.

This hints back to the central issue of international collaboration. Yet, there is a lack of effective international organizations and regional platforms with regard to new technologies, low-carbon and carbon-neutral energy carriers, as well as standards and norms. A key issue for international cooperation are indeed norms, rules, and standards to create a playing field that is as leveled as possible. Thus, interconnectivity, interoperability, and compatibility are important guidelines. In this regard, the following five aspects will be most important.

First, internal cohesion is important. It is banal but all the more valid that cohesion in the EU is a necessary precondition to being heard in the concert of powers. To this end, the establishment of European sovereignty should be a clear reference point for Member states' energy policies, also and especially in the awareness of existing dissonances. Moreover, EU cohesion is closely linked to issue of a “just transition.” There is an implicit social dimension built into the transition of today's energy systems. Member States and the EU have to step in to cushion vulnerable groups from higher costs for energy to preserve the domestic consensus and support.

Second, to address the challenge of a competitive geoeconomic environment, the EU must strategically position itself and create and sustain technological leadership. There is indeed a very delicate balance between resilience and efficiency. Sovereignty should not be defined as self-sufficiency or autarchy but rather should rely firmly on international integration, diversification, and cooperation. Raw material and supply chains and production clusters must then be designed not only according to efficiency criteria but also according to resilience criteria, i.e., along the lines of substitutability, diversification, and sustainability. Most of all, the EU has to throw its market weight into the balance.

Third, strategic energy technologies, competencies, and industries must be identified and sustained. Regarding their crucial function in the modern energy system, offshore wind, hydrogen and its derivatives, and digital grid management among others can be identified. Rapid implementation of these technologies is necessary to take advantage of the good European starting position and not to gamble it away again – as is the case with photovoltaics – to China. This means nothing other than producing strategically important technologies – i.e., those technologies like wind energy that fulfil key functions in the modern energy system – largely in the EU. European core competencies must be preserved at crucial junctures: in the high integration of renewable energies by transmission system operators, in near-real-time load management in the transmission system, in intra-day trading, or in virtual power plants. Even if the great IT revolution has been overslept – in these realms the EU has occupied strategic junctions of digitalization and power grid. It may be worthwhile to check the possibility of an “Airbus”-like project for green hydrogen and off-shore windfarms. Battery cells production capacities, electricity storage, carbon capture, utilization, and storage (CCUS), and next generation of perovskite solar cells can be added here, too. Finally, the basis for strategic know-how, technology, and innovation are home-based industrial-size production sites.

Fourth, international partnerships are key, in particular with countries that have prices on CO₂, and share the same rules, norms, and standards. Germany's proposed “Climate Club” may be a way forward. Only by extending ties to like-minded partner countries can the EU be fit for achieving the Green Deal as well as for potentially increased “geostrategic competition.” And a playing field as levelized as possible with transparent and equally applied rules and standards is key for European companies to stay competitive under the Green Deal. Border adjustment mechanisms and environmental, social,

and governance standards – if not widely internationally shared – do not only create fault lines at EU borders but also result globally in fragmented market segments and shrinking spaces for trade and economic activity. For some, a protected European market will throw a lifeline, but for many others it will limit opportunities in particular vis-à-vis other market players, such as from China, not bound to similar rules.

Fifth, and as a consequence of the above, the Green Deal has to be promoted internationally. As foreseen in the proposed "Climate Club," those countries will have to agree on a minimum set of rules, norms, and mechanisms such as CO₂ pricing and similar environmental, social, and governance standards. The stakes are high for the EU. The predominant narrative of green growth and jobs are a bet on EU's internal cohesion and lasting consensus on the Green Deal and a wish for a world that moves beyond power competition and system rivalry, putting global commons at center stage. From the point of view of realism, the signs of the times are different, though. The EU's leeway is limited in promoting its economic and energy model. The geopolitical realities set clear limits on how quickly and how successfully European efforts for constructive cooperation can progress. The EU has to prepare for different futures and at the same time clearly put preference on an international and inclusive Green Deal.

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Goeconomics is the projection of economic power within and across land, air, sea, space, and cyberspace to achieve political goals. The changing fabric of the international system, diverging Western and non-Western political preferences, and connectivity that increasingly turns toxic change the goeconomic practice. In response, public policies and corporate strategies need to be adjusted. Storms Ahead provides a much-needed compass to guide public and private decision-makers through increasingly stormy waters by providing a diverse and complementing set of perspectives and blending conceptual approaches with practical insights.

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