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# Flow Control Rewrites Globalization

Implications for Business and Investors

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"China's Belt and Road will be the new World Trade Organization  
– whether we like it or not."

*Joe Kaeser, CEO of Siemens, quoted in Bruno Maçães, Belt and Road. A Chinese World Order  
(London: Hurst & Company, 2018), p. 170.*

"For some time to come U.S.-Chinese bipolarity will not be an ideologically driven, existential conflict over the fundamental nature of the global order; rather it will be a competition over consumer markets and technological advantages, playing out in disputes about the norms and rules governing trade, investment, employment, exchange rates, and intellectual property."

*Yan Xuetong, "The age of uneasy peace. Chinese power in a divided world,"  
Foreign Affairs, 98:1 (January-February 2019), p. 46.*

"These competitions require the United States to rethink the policies of the past two decades – policies based on the assumption that engagement with rivals and their inclusion in international institutions and global commerce would turn them into benign actors and trustworthy partners. For the most part, this premise turned out to be false."

*National Security Strategy of the United States  
(Washington, DC: The White House, 2017), p. 3.*



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## Executive Summary

Stewarding companies through a fragile international system in transition will be challenging. The current international order is fragile because the global leadership vacuum is widening, diverging concepts of sovereignty are colliding, the fabric of political power is changing, and emerging status quo challengers are combining cooperation and competition to test the resolve of incumbent lead nations. The ambivalence of technological progress reinforces all of these aspects. Most importantly, corporate decision-makers and investors need to understand that Adam Smith's idea of an 'invisible hand' driving a laissez-faire approach to politics is over. This transition phase is characterized – proverbially – by the 'iron fist with deep pockets,' i.e., authoritarian capitalism, and the vociferous 'Twitter finger,' i.e., executive populism. Both question well-established modes of interaction between politics and economics.

Today's international order has enabled and has been shaped by the free flow of goods, services, data, and capital and the unrestricted movement of people. These global exchanges have created strategic flows that have advanced prosperity and deepened connectedness. But the fraying international order gives rise to a more skeptical view on connectedness. Rather than emphasizing the benefits and opportunities, a prevailing zero-sum logic underlines and exploits the vulnerabilities of dependence. That is why nations, in particular ambitious emerging status quo challengers, are focusing increasingly on flow control. Flow control is the will and the capability of an actor to define the framework and the operational conditions for strategic flows. This entails the power to: (1) define, monitor, and enforce the rules that enable flows, (2) decide upon access to and maneuverability within the geo-spatial corridors that flows traverse, and (3) shape the volume and the direction of strategic flows by using flow enablers (e.g., infrastructure,

transport means, technology) for one's own purpose and denying their use to competitors. Flow control entails a broad spectrum of instruments at the intersection of geostrategy and geo-economics.

Flow control is the testing ground on which a new grand systemic competition is emerging. This competition unfolds along four different but closely interrelated trajectories: First, the competition for zones of influence is about different geostrategic concepts of order. Global supply chains constitute the center of gravity, as they enable strategic flows. Second, the competition for norms, principles, and standards is about the 'rules of the road' of international politics and economic cooperation. Diverging concepts of sovereignty and different geo-economic ambitions will challenge unifying rule sets in favor of preferential rules relevant only among groups of like-minded actors. The competition for narratives constitutes the third element, which focuses on the dominant stories and the main arguments needed to influence global public opinion. Normative preferences related to good and bad behavior are increasingly relabeled as questions of national sovereignty and national security concerns. These concerns, in turn, are used to justify protectionist policies that serve to protect national industry champions and restrict market access for foreign competitors. Finally, the competition for alternative models of prosperity is about the fundamental ideas that govern the social contract, i.e., the relationship between citizens, the state, and the market. Most crucially, democracy is no longer seen as the only route to economic success. Authoritarian state capitalism is increasingly seen as a viable alternative – with wide-ranging consequences for the other three vectors of the four-fold grand systemic competition.

Flow control leads to an increasingly contested, polarized, and much more volatile business world. First of all, competitive rivalry will increase due to the rise of state-owned enterprises that will be able and willing to take much more risk in return for politically motivated benefits. Emerging markets show a lower degree of penetration with traditional business models and concepts, thus giving challengers more leeway to experiment. This increases the number of new market entrants

that benefit from digitization. Third, emerging powers want to diversify the national economies and set up indigenous champions. Thus, the threat of local substitutions for existing products and services is growing. Fourth, ambitious governments strengthen the bargaining power of local companies by handpicking future national champions, which become the required partners of choice for international business. Finally, different factors such as the rise of identity politics and contentious debates over the role and relevance of data protection in the digital world will beef up the bargaining power of buyers.

The business impact of these changes will be fundamental because they affect the backbone of modern business operations: corporate supply chains. Corporate supply chains have become the center of gravity of the emerging geo-economic competition because they provide the highways for strategic flows. Shaping the volume and the direction of these flows bestows power, and this is what status quo challengers are looking for. Geo-economic competition for supply chains will thus evolve along four different trajectories: downstream, upstream, mid-stream, and lateral supply chain competition.

Ultimately, flow control in the context of the grand systemic competition is about to change the paradigm of international cooperation: Key instruments that were used up to now to bind nations together – such as rules, institutions, technical standards, and economic ties – are increasingly being turned into instruments working against each other. By taking recourse to preferential economic cooperation, like-minded challengers will try to strategically cocoon their partnerships, thereby lowering the level of outside interference. At the same time, they will try to lure developed and developing nations into their zones of influence. Unlike during the Cold War, this new grand systemic competition is economically and technologically unrestricted, because it taps into strategic technologies that are of commercial rather than defense origin. The logic of flow control produces a zero-sum outcome: One nation's access to technology effectively locks out another nation. This has the potential to produce a bifurcated techno-economic ecosystem in which trade among preferred partners could prevail over global interaction.

Investors will need to think carefully about the impact of these trends on the corporate world. Three issues in particular should receive more attention. First, investors will want to have more information on the geostrategic risk appetite and risk reporting of the companies in which they invest. Above all, they will require a more systematic view on the impact of geostrategic and geo-economic developments on corporate strategies, business models, and implementation plans. Second, corporations' vulnerability to sanctions is increasing significantly. International sanctions are becoming more personal. Emerging powers might want to emulate the Western practice of targeting high-value individuals in order to inflict pain on Western companies and countries. Former senior government officials that have been appointed to board levels are the most vulnerable exactly because they have been part of political systems that these emerging powers want to challenge. Investors will want to understand how companies are going to deal with this executive-level sanctions vulnerability. A similar risk emerges with technologies. Flow control posits that all technologies that are deemed relevant to establish and maintain strategic advantages could become sanctions targets. This requires corporate technology roadmaps that provide information on how to mitigate the technology sanctions risk. Finally, a more assertive interpretation of trade as a national security concern creates investor risks. The motives and the origin of investors will come under increased scrutiny. Investors thus need to reflect upon the likely economic and national security impact of partnering with co-investors from emerging status quo challengers. For one, some investment partners might no longer be en vogue. For another, creating strategic investment vehicles that provide governments with an option to keep national critical technologies under control could become an option worth considering.

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**Flow control, the testing ground on which a new grand systemic competition is emerging, could lead to a bifurcated techno-economic ecosystem**

## A Fraying International Order Accelerates the Rise of Flow Control

Companies are "open social systems."<sup>1</sup> They neither exist on their own nor can they fulfill their purpose without interacting with third parties such as suppliers, development partners, customers, or authorities. As open systems, companies depend on their environment, which they influence at the same time. Understanding the relevant corporate environmental spheres – politics/law, technology, markets, societal expectations, and the natural environment – and the factors that shape them is pivotal for corporate success.

Today, the corporate environment is undergoing radical change. Hardly ever has mankind had similar scientific, technical, and financial resources at hand, but the ability to use these resources to solve existing problems is increasingly limited. The latest World Economic Forum report on global risks posits that humanity has become remarkably good at understanding and controlling conventional risks that can be viewed and managed in isolation. But when it comes to coping with networked, systemic risks, problem-solving competence is much weaker.<sup>2</sup> This is the key challenge in a globalized world that rides on the benefits of connectivity. But the same links that work for the good also provide channels for risks to spread and endanger prosperity, stability, and security.<sup>3</sup>

Stewarding companies through a fragile international system in transition will be challenging, as this paper will discuss. Most importantly, corporate decision-makers and investors need to understand that Adam Smith's idea of an 'invisible hand' driving a laissez-faire approach to politics is over. This transition phase is characterized –

proverbially – by the 'iron fist with deep pockets,' i.e., authoritarian capitalism, and the vociferous 'Twitter finger,' i.e., executive populism. Both question well-established modes of interaction between politics and economics.

The post-Cold War order is about to be left behind, but the contours of the new order remain foggy, as the parameters that are to shape any new order are contested among incumbent lead nations and status quo challengers.<sup>4</sup> However, one early lesson of the two-decade journey into the new international order is becoming increasingly clear: Growing interdependence does not automatically lead to a decrease in conflicts; emerging and ambitious status quo challengers are increasingly unwilling to be co-opted by the existing powers, and ideologies long believed to have been put in the dustbin of history are celebrating a strong return to the world stage.<sup>5</sup>

This is the context that gives rise to flow control. Globalization is about the free flow of goods, services, data, and capital and the unrestricted movement of people.<sup>6</sup> The respective exchange is essential to feed a constantly growing world population, supply national economies, and open up markets for companies. Prosperity builds on the unrestricted exchange of these strategic flows, which connect locations of production, transit, and consumption. Prosperity requires connectivity, which in turn depends on access to transport corridors and means of transportation to ensure supply security. Figure 1 shows the aggregate economic value of trade in products, services, data, and capital and the movement of people. The resulting economic value, which shapes the size of the bubbles, is set in relation to national connectedness and the flow intensity relative to the Gross Domestic Product (GDP). The chart illustrates that smaller and

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**Flow control describes the will and the capability of an actor to define the framework and the operational conditions for strategic flows**

1 Ulrich, Die Unternehmung als produktives soziales System, p. 209.

2 The Global Risks Report 2018, p. 5.

3 Flow Security and Dutch Defense and Security Policies, p. 1.

4 The Global Risks Report 2018, p. 7.

5 Burrows, Global Risks 2035, p. ii, 2.

6 Khanna, Connectography.

well-connected economies like Singapore or the Netherlands<sup>7</sup> have learned to leverage connectedness to their benefit. But the particular cases of the United States and China also highlight the strategic relevance of large and vibrant home markets,<sup>8</sup> an economic factor that will be particularly relevant in an international setting that is likely to be more prone to protectionism than the past.

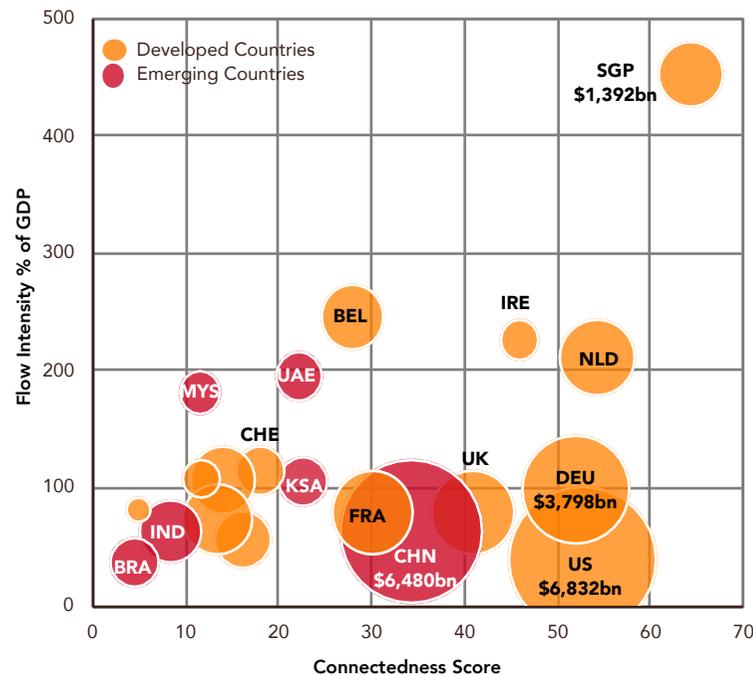


Figure 1: The Economic Value of Strategic Flows and Connectedness  
Source: Digital Globalization, p. 12.

Although connectedness enables nations to tap into global wealth, flow-related prosperity remains concentrated in a small group of nations. The top 15 nations account for 63% of global traded goods, 62% of services, and 79% of foreign direct investment (FDI).<sup>9</sup> In addition, an increasing zero-sum attitude towards international cooperation lays bare the vulnerabilities that come with connectivity and shifts the paradigm from connectivity as a public good to connectivity as a club good. In this regard, perceptions matter. As Dale Copeland's trade expectations theory explains, a state with negative expectations about the future environment in which it operates "tends to believe that without access to the vital raw materials, investments, and export markets needed for its economic health, its economy will start to fall relative to other less developed actors."<sup>10</sup> This is where flow control kicks in:

*Flow control describes the will and the capability of an actor to define the framework and the operational conditions for strategic flows. This entails the power to: (1) define, monitor, and enforce the rules that enable flows, (2) decide upon access to and maneuverability within the geospatial corridors that flows traverse, and (3) shape the volume and the direction of strategic flows by using flow enablers (e.g., infrastructure, transport means, technology) for one's own purpose and denying their use to competitors.<sup>11</sup>*

As this paper will discuss, flow control entails a broad spectrum of instruments that sit at the intersection of geostrategy and geo-economics (Table 1). Geostrategy describes how actors project power into zones of strategic interest and demonstrates how geography shapes actors' preferences and abilities to do so.<sup>12</sup> Geo-economics is closely related and describes "the use of economic instruments to promote and defend national interests and to produce beneficial geopolitical outcomes"<sup>13</sup> with

7 The Dutch government has also identified 'flow security' as a principal strategic challenge. See: Flow Security and Dutch Defense and Security Policies, p. 1.  
8 Tooze, Crashed, p. 16.  
9 Digital Globalization, p. 11.  
10 Copeland, Economic Interdependence and War, p. 2.

11 This definition is inspired by the idea of sea control as defined by British Maritime Doctrine, para. 220, and Gould/Beckner, Global Movement Management, pp. 3-4.  
12 Brzezinski, The Grand Chessboard, pp. 37-40.  
13 Blackwill/Harris, War by Other Means, p. 9.

a view to further a nation’s "political and strategic position vis-à-vis other countries."<sup>14</sup> Thus, geo-economics looks at the political return of economic exchange and reinforces geostrategy.

Flow control is the testing ground on which the grand systemic competition between today’s leading powers and ambitious status quo challengers emerges. Flow control is on the rise because the current

international system is fraying. Five trends describe the current stage of transition and explain why flow control takes center stage and why business leaders and investors must wrap their heads around its consequences.

Flow components	Flow domains	Flow regulation	Flow carriers	Flow enablers
<ul style="list-style-type: none"> <li>▪ Capital</li> <li>▪ Data and information</li> <li>▪ Goods and commodities</li> <li>▪ People</li> <li>▪ Services</li> </ul>	<ul style="list-style-type: none"> <li>▪ Air</li> <li>▪ Cyberspace</li> <li>▪ Land</li> <li>▪ Sea</li> <li>▪ Space</li> </ul>	<ul style="list-style-type: none"> <li>▪ Currency controls</li> <li>▪ Immigration law</li> <li>▪ Industry standards (e.g., safety, environmental protection)</li> <li>▪ Intellectual property rights</li> <li>▪ International trade law and dispute settlement</li> <li>▪ Tariffs and sanctions</li> <li>▪ Taxation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Airports and planes</li> <li>▪ Communication cables, data infrastructure, cloud services, and satellites</li> <li>▪ Financial transactions infrastructure</li> <li>▪ Pipelines</li> <li>▪ Ports, ships, and inland waterways</li> <li>▪ Railway stations, railways, and trains</li> <li>▪ Roads, cars, and trucks</li> <li>▪ Traffic management systems</li> </ul>	<ul style="list-style-type: none"> <li>▪ Finance (e.g., infrastructure development credit)</li> <li>▪ Insurance (e.g., credit insurance)</li> <li>▪ Technology (e.g., energy generation, additive manufacturing, robotics, data analytics)</li> </ul>

Table 1: Five Core Elements of Flow Control

*First, since 1990 a global leadership vacuum has been gradually emerging.* In the United States, debates over the costs and benefits of leading globally have become fiercer since the end of the Cold War. In stark contrast to his predecessors who upheld the idea of "embedded liberalism,"<sup>15</sup> President Donald Trump prefers unilateralism. He seems willing to

"sabotage from within"<sup>16</sup> the international order that the United States has created since 1945 and that provided Washington with comfortable control over international affairs. The member states of the European Union (EU) have only limited ambition and capacities to lead globally, not least as the inward orientation of the EU members has strongly

14 Rose, "Geo-economics, trade and the liberal order."

15 Embedded liberalism is John Gerard Ruggie's term to describe the international order post 1945: "Unlike the economic nationalism of the thirties, (the new international order) would be multilateral in character; unlike the liberalism of the

gold standard and free trade, its multilateralism would be predicated upon domestic interventionism." See: Ruggie, "Embedded liberalism and the postwar economic regimes," pp. 72-73.

16 Munich Security Report 2018, p. 6; Rose, "The Fourth Founding," p. 18.

increased since the financial crisis of 2007/08. Other contenders to take the helm enter the game, but most of them lack the material and immaterial resources, do not offer compelling visions to which other nations are ready to subscribe, or hold worldviews that are not accepted by followers.<sup>17</sup> This creates opportunities for state and non-state actors to test existing 'red lines' and the firmness of the developed world in pushing back ambitious status quo challengers. Reluctance to respond vigorously to this new "tolerance warfare" – "the persistent effort to test the

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**Russia's understanding of sovereignty is geospatial and cultural – China emphasizes the role of relations to establish cross-regional bonds**

tolerance for different kinds of aggression against settled states"<sup>18</sup> – not only furthers regional instability. Reluctance also stimulates the propensity to disregard the concerns of leading nations and prompts allied partners to act on their own, which in turn can further destabilize regional developments.<sup>19</sup>

*Second, overcoming the leadership vacuum is becoming increasingly difficult, as diverging concepts of sovereignty are becoming more manifest.* According to Hans-Henrik Holm and Georg Sorensen, the international system is characterized by three different concepts of sovereignty: post-modern states transfer sovereignty to international bodies; modern states retain their sovereignty; pre-modern states must first develop it.<sup>20</sup> Inspired by their own success, most EU nations believed after 1990 that the world would develop towards a post-modern understanding of sovereignty, but this has turned out to be an illusion. The United States,

for example, never aspired to establish authorities above the nation state, and the same is true for aspiring status quo challengers. In fact, today's problems in part persist because countries like the United States, Russia, China, or Turkey, Iran, and Saudi-Arabia all operate on a neo-realist worldview, where self-help and balance of power dominate and cooperation is interpreted as a zero-sum game.<sup>21</sup>

In addition, Russia's understanding of sovereignty is geospatial and cultural in the sense that it goes beyond territories and borders and includes references to community of peoples, culture, and identity building as core aspects.<sup>22</sup> This emphasis on culture and identities matters all the more, as "we have entered the second age of globalization, where borders become increasingly diffuse, but cultural and civilizational differences do not."<sup>23</sup> Furthermore, China's understanding of order emphasizes the role of relations rather than actors. Togetherness results from different forms of interaction that are not driven by clear-cut rules and procedures but are deliberately "informal, unstructured and opaque."<sup>24</sup> This, in turn, nurtures "China-centered networks" that are managed in line with Beijing's evolving interests.<sup>25</sup>

*Third, different ideas of sovereignty exist in parallel, because the fabric of political power is changing.* States have long ceased to be the sole sources of political power; international organizations have gained in importance, as have (violent) non-state actors, multinational corporations, and social movements.<sup>26</sup> Paradoxically, the existing transitional order favors the diffusion and the dilution of power, thus promoting a process of "power levelling." As a result, the central role of the West is called into question. At the same time, however, political power

17 Allen/Vucetic/Hopf, "The Distribution of Identity and the Future of International Order"; Lewis, "Technological Competition and China."

18 Strategic Survey 2018, p. 12.

19 Haass, "How a World Order Ends," p. 28.

20 Holm/Sorensen, "International Relations Theory in a World of Variation," pp. 203-204.

21 Kagan, *The Jungle Grows Back*.

22 Svarin, "The construction of 'geopolitical spaces' in Russian foreign policy discourse before and after the Ukraine crisis," pp. 130-131; Tsvetkov, "The evolution of Russian identity, 1991-2016," pp. 4-9.

23 Maçaes, *The Dawn of Eurasia*, p. 5.

24 Maçaes, *Belt and Road*, p. 35.

25 Mokry, *Decoding Chinese concepts for the Global Order*, p. 7.

26 *The Fission of Power*, S. 33-37; UK foreign policy in a shifting world order, pp. 5-8.

becomes fuzzier, which makes it increasingly difficult for other states to attain the status of global superpowers.<sup>27</sup>

*Fourth, in this changing environment, emerging status quo challengers behave ambivalently.* Precisely because they play a prominent regional role, industrialized nations have attempted to reach out to partners from the emerging world to get them to co-shoulder the burden of reorganizing the international system. Global goods such as security or environmental protection should be provided by involving everyone with a stake in it. However, diverging concepts of sovereignty stand in the way of this approach.<sup>28</sup> Indeed, emerging powers see the provision of public goods as a possible trap that established industrialized nations set for them in order to persuade them to make concessions that could impede their own economic development.<sup>29</sup> This explains, for example, the critical attitude or resistance of countries such as China, India, or Brazil in the field of international environmental protection. It is precisely because of this attitude that emerging states are increasingly unwilling to be co-opted by the United States or the EU.<sup>30</sup>

*Finally, the ambivalence of technological progress reinforces the preceding aspects.*<sup>31</sup> On the one hand, technology innovation opens up new possibilities for creating prosperity, solving environmental problems, and enabling democratic participation in a variety of ways. On the other hand, technological progress also creates new vulnerabilities due to growing technological complexities and the risks of digital connectivity. In addition, technology-driven societal change raises fears, as people feel challenged by the advent of technology that could replace them and threaten their work and the existence of human beings. Furthermore, the non-benign use of modern technology plays into the hands of violent non-state actors that have access to disruptive forces that were previously restricted primarily to nation states.

27 Buzan/Lawson, *The Global Transformation*, pp. 276-277. Highlights only here.

28 However, this does not mean that these states want to undermine the existing order. Rather, it is about reforming existing institutions or creating new ones to better express their interests. See: Stuenkel, "The Ufa Declaration: An Analysis."

29 Mirilovic/Ollapally, "Realists, Nationalists, and Globalists and the Nature of Contemporary Rising Powers," p. 224.

30 Stuenkel, *The BRICS and the Future Global Order*, p. 154.

31 *The Global Risks Report 2018*, pp. 10-11.

## Grand Systemic Competition Reloaded: The Four Key Dimensions of Flow Control

A new grand systemic competition characterizes the current transition stage of the international order. This competition centers around the idea of flow control and unfolds along four different but closely inter-related trajectories (Table 2):<sup>32</sup>

- The competition for zones of influence is about different geo-strategic concepts of order. Global supply chains constitute the center of gravity, as they enable strategic flows. Competing visions evolve around ideas that shape downstream, upstream, midstream, and lateral supply chain competition.
- The competition for norms, principles, and standards is about the 'rules of the road' of international politics and economic cooperation. Diverging concepts of sovereignty and different geo-economic ambitions shape this part of the competition.
- The competition for narratives is about the dominant stories and the main arguments needed to influence global public opinion. Normative preferences related to good and bad behavior are being increasingly relabeled as questions of national sovereignty and national security concerns. These concerns, in turn, are used to justify protectionist policies that serve to protect national industry champions and restrict market access for foreign competitors.
- Finally, the competition for alternative models of prosperity is about the fundamental ideas that govern the social contract, i.e.,

32 To make things even more challenging, the intensity of competition will depend on different aspects, such as the issues at stake and the actors involved. For

the relationship between citizens, the state, and the market. Most crucially, democracy is no longer seen as the only route to economic success. Authoritarian state capitalism is increasingly seen as a viable alternative – with wide-ranging consequences for the other three vectors of the four-fold grand systemic competition.

### Competition for Zones of Influence

Rapid technological progress and economic globalization have nurtured the belief that geography has become irrelevant. In today's just-in-time business world, distance no longer seems to matter, as everything is available 24x7. But this vision largely overlooks the fact that global exchange does not function without transport infrastructure and transport corridors. Road, rail, air, and sea routes as well as the digital infrastructure run through spaces, and anyone who wants to participate in global exchange processes needs access to these spaces. The problem is that the future governance of these spaces is contested.

In general, supply needs shape a nation's geospatial interests, but diverging interpretations of sovereignty lead to diverging visions for geospatial orders. Territories are generally subject to state sovereignty, whereas international regimes regulate access to the so-called global commons, i.e., the strategically important domains such as the sea, air, and space, and the digital cyberspace.<sup>33</sup> Right now, the principles governing access to, maneuverability within, and use of the global commons are contested. Most developed nations want to keep the global commons open to enable global connectivity. Status quo challengers, in contrast, want to exercise flow control to their benefit and strive to re-organize global flows, thereby using political, economic, and military instruments.

more on this view, see in particular: Mazarr, *Understanding the Emerging Era of International Competition*, pp. 32-36.

33 Redden/Hughes, *Global Commons and Domain Interrelationships*, pp. 1-2.

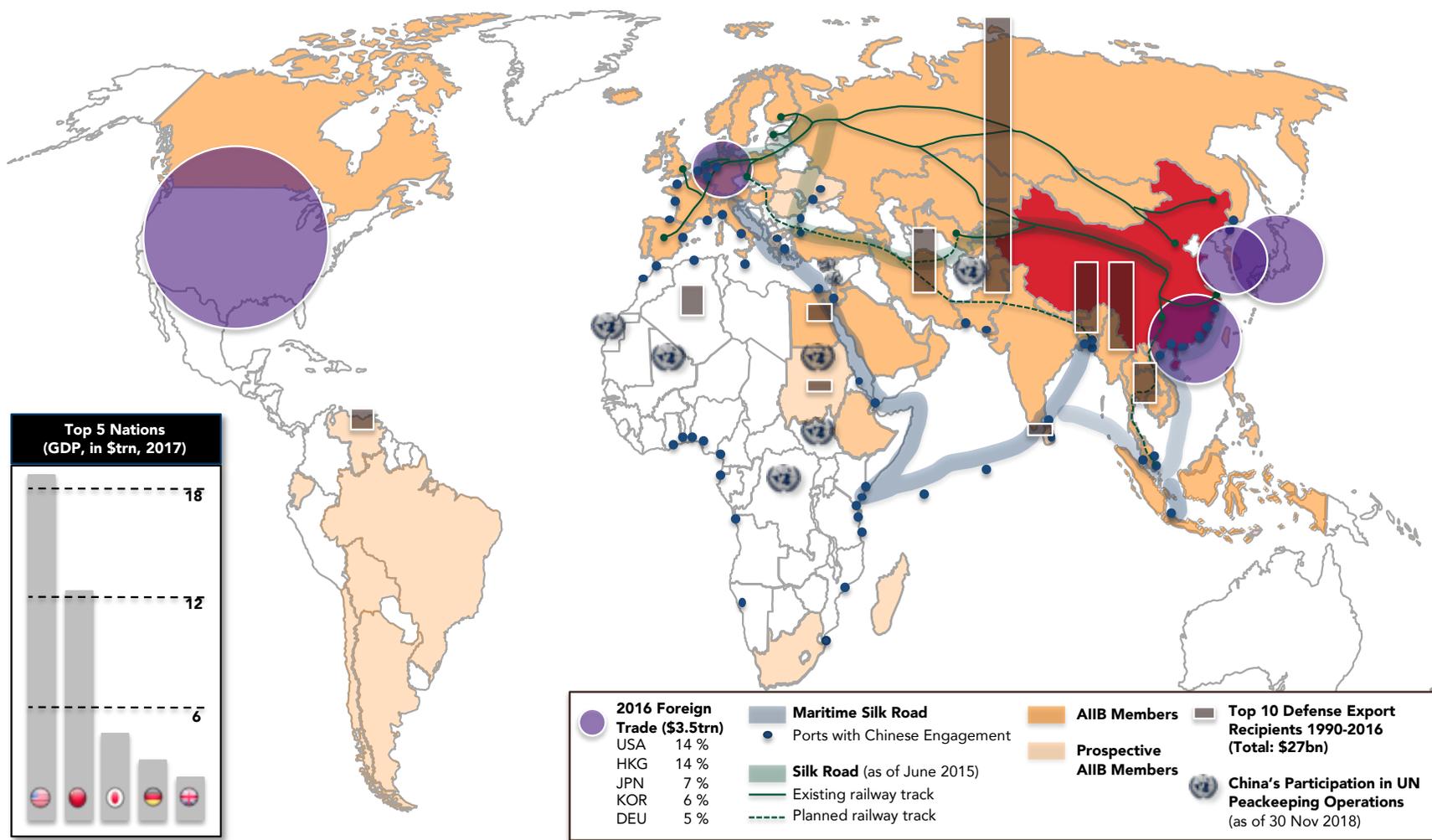


Figure 2: China's Belt and Road Initiative

Sources: Adapted from "China aims to build a global infrastructure network;" Huotari, China's Emergence as a Global Security; Kakissis, "Chinese Firms Now Hold Stakes In Over A Dozen European Ports;" "One Belt, One Road;" "China and European ports;" foreign trade <http://atlas.cid.harvard.edu/>; GDP [https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=IN&year\\_high\\_desc=true](https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=IN&year_high_desc=true); defense exports <http://armstrade.sipri.org/armstrade/page/values.php.UN>; peacekeeping operations <https://peacekeeping.un.org/en/china>.

	Ambition	Preferred concepts	Preferred instruments
<b>Competition for zones of influence</b>	<ul style="list-style-type: none"> <li>▪ Creating zones of influence</li> <li>▪ Raising costs of interventions by outsiders</li> </ul>	<ul style="list-style-type: none"> <li>▪ Projecting power into areas of strategic interest</li> <li>▪ Pushing out security parameters by protecting areas of strategic interest</li> <li>▪ Deflecting strategic flows</li> </ul>	<ul style="list-style-type: none"> <li>▪ Advancing 'creative' spatial planning (e.g., artificial island construction)</li> <li>▪ Launching cross-regional infrastructure projects in areas such as energy, communications, transport, and logistics</li> </ul>
<b>Competition for narratives</b>	<ul style="list-style-type: none"> <li>▪ Cracking Western information dominance</li> <li>▪ Developing new alternative narratives</li> </ul>	<ul style="list-style-type: none"> <li>▪ Engaging in disinformation, propaganda, and manipulation of opinion</li> <li>▪ Waging psychological warfare</li> </ul>	<ul style="list-style-type: none"> <li>▪ Exploiting digital media</li> <li>▪ Using spin doctors and PR agencies</li> </ul>
<b>Competition for standards and norms</b>	<ul style="list-style-type: none"> <li>▪ Questioning the dominance of norms and rules driven by the developed world</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pushing alternative interpretation of existing norms and rules</li> <li>▪ Exploiting gaps in existing regulatory frameworks</li> </ul>	<ul style="list-style-type: none"> <li>▪ Complying selectively with existing norms and rules</li> <li>▪ Promoting national champions to advance industry standards</li> </ul>
<b>Competition for prosperity models</b>	<ul style="list-style-type: none"> <li>▪ Advancing an economic order that primarily serves political (non-Western) interests</li> </ul>	<ul style="list-style-type: none"> <li>▪ Taking recourse to economic protectionism</li> <li>▪ Cocooning preferential partnerships among like-minded nations</li> </ul>	<ul style="list-style-type: none"> <li>▪ Advancing preferential economic cooperation without strings</li> <li>▪ Dismantling tariffs for friendly allies</li> <li>▪ Shifting trade relations into non-dollar denominated currencies</li> <li>▪ Advancing regional economic and customs unions</li> <li>▪ Requiring transfer of technology in return for market entry</li> <li>▪ Advancing industrial indigenization and setting up national champions</li> </ul>

Table 2: New Grand Systemic Competition – Dimensions and Characteristics

The Belt and Road Initiative (BRI) – the new edition of the Chinese Silk Road, with a land bridge from Europe to China, a sea connection through the Indian Ocean, and the extension into cyberspace and outer space – is the most gigantic attempt at supraregional 'spatial planning' (Figure 2). It is estimated that the BRI connects an economic area that

accounts for 55% of the world's gross national product, 70% of the world's population, and 75% of the world's known energy reserves.<sup>34</sup> Up to today, China has reportedly spent \$400bn to implement the BRI.<sup>35</sup> One of China's key motives is to link its hinterland – which to date has been largely decoupled from global exchange processes – to Central

34 Cheung, "Views from Northeast Asia: A Chinese-Style Pivot or a Mega-Opportunity?," p. 23. See also: <https://www.merics.org/en/bri-tracker/mapping-the-belt-and-road-initiative>.

35 Skylar Mastro, "The Stealth Superpower," p. 32.

Asia and Europe. The projection of prosperity into China's hinterland is crucial to guarantee domestic stability, which ultimately underpins the power and influence of the Chinese Communist Party. The BRI therefore combines domestic political stability with spatial planning

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**Geo-economically motivated flow control and anti-access and area denial (A2AD), its military equivalent, change the nature of globalization**

through infrastructure development and a broad vision to establish new financial institutions in which China plays the key role. The BRI has caught many of China's competitors on the wrong foot, but more recently, the United States, Japan, Australia, and the European Union have launched their own connectivity and infrastructure development programs to counter China.<sup>36</sup>

Geo-economically motivated flow control has a military companion called anti-access and area denial (A2AD).<sup>37</sup> A2AD focuses on restricting military access to zones of strategic interest, such as coastal regions or important land corridors, thereby shielding them off from outside intervention. Countries like China, Russia, and Iran establish A2AD concepts in order to offset the advantages of acting from a distance, as preferred by the United States and its allies. A2AD effectively pushes out the security parameter by extending the reach of sensors and effectors such as missiles and thus provides additional 'strategic depth.' This in turn increases the risk for intervening forces that need to circumvent or brake adversarial A2AD shields in order to advance. China's building of artificial islands in the South China Sea, Russia's deployment of sophisticated air defense systems to allies in the Middle East, or Iran's combination of mosaic defense with distributed defense capabilities and offensive swarm elements at sea and in the air illustrate the many different facets of A2AD.<sup>38</sup>

36 "Japanese companies team up to fund infrastructure exports"; "Japan seeks out more global infrastructure projects"; Pryke/McGregor, "The new US-Japan-Australia infrastructure fund"; Connecting Europe and Asia: Building blocks for an EU strategy.

37 Joint Operational Access Concept, p. 6.

Ultimately, all of these forms of spatial planning are meant to undo or at least significantly change the nature of globalization. The focus is no longer on free and unhindered exchange to enable strategic flows but on the establishment of controlled domains in which preferential rules apply. The emergence of geospatial domains governed by different regional orders questions the idea of a unified global order that emerged under Western, in particular U.S., leadership after 1945. So far, the United States has been recognized as the global leader because Washington was able and willing to enforce the existing order, if needed also by acting unilaterally. But the rise of regional zones of strategic interest governed by preferential political, economic, and military governance is questioning this leadership role and thus also the legitimacy that this function has bestowed on the United States as the lead nation.

**Competition for Rules, Norms, Principles, and Standards**

Social coexistence is rule-based. Competition for standards and rules therefore always means that the foundations of this coexistence are questioned or redefined. Diverging concepts of sovereignty and different geostrategic ambitions put the current norms and rules under strain.

Interestingly, today's competition for rules is grounded in capitalism as a unifying ideology: "The question in the contemporary world revolves about how to embed capitalism politically."<sup>39</sup> Here, liberal democratic capitalism stands in contrast to state-bureaucratic and authoritarian capitalism. China, like other state-bureaucratic and authoritarian capitalist nations, has accepted the "economic side of the liberal project

38 Gunzinger, *Outside-In*, pp. 21-52; Krepinevich, *Maritime Competition in a Mature Precision-Strike Regime*; Kelly/Gompert/Long, *Smarter Power, Stronger Partners*, Vol. 1., pp. 43-51.

39 Buzan/Lawson, *The Global Transformation*, pp. 281.

(but) is not buying into liberal culture and governance."<sup>40</sup> This renders acceptance of state capitalism difficult, as the respective regimes' compliance with the prevailing consensus – i.e., adherence to liberal-democratic principles, economic globalization, and peaceful change<sup>41</sup> – is in doubt.

But if nations disagree on the basic rules of social order, they also disagree on acceptable behavior and the principles needed to enforce norm compliance. Countries like the BRICS group<sup>42</sup> "play a mixed game of cooperation and competition, something that Washington has never had to deal with before at this level,"<sup>43</sup> that skillfully restricts the freedom of the United States.<sup>44</sup> As discussed, the leadership vacuum and the lack of disciplining forces make non-compliance with existing rules and norms easier for those that want to challenge the status quo. In addition, the status quo challengers' own transactional approach to international norm compliance is greatly facilitated by existing gaps, as Oriana Skylar Mastro argues with regard to China. The first type of gap is geographic. Some regions, such as Africa, have been low priorities for the United States, thus making Chinese inroads much easier "without provoking the hegemon." Second, there are thematic gaps, "issue areas where the established order is weak, ambiguous, or nonexistent." Here China strives to advance its own worldview and establish new rules. This is particularly true for key technology areas such as internet governance or artificial intelligence.<sup>45</sup>

This development is relevant for business and investors because social rule making entails the definition of industry standards. Competition for industry standards goes hand in hand with the development of commercial trade. Back in the late 19th and early 20th centuries, Prussia's Kaiser Wilhelm II wanted to break the dominating role of Great Britain in radio telegraphy by copying Marconi's radio network designs

and patenting them in Prussia.<sup>46</sup> The fact that information and communication technologies (ICT) continue to remain at the forefront of today's competition for the latest standards is no surprise. These technologies have accelerated the "redistribution of economic power in favor of non-Western states."<sup>47</sup> In addition, other next-generation technologies, such as artificial intelligence, robotics, and the like, are becoming so central to modern economic activities that prowess in these technologies bestows disproportionate influence on the respective technology champions. This also explains why coercion of these champions is likely to have repercussions across the whole industrial value chain, thus affecting all industries depending on ICT.<sup>48</sup> Nowhere is this more obvious than in the current power game to set the standards for fifth generation (5G) communication technology.

But setting standards is only half the game. Ensuring compliance with standards is at least as important. This is where sanctions come to play as one instrument to correct misbehavior. With the increase in geostrategic tensions over the past couple of years, sanctions against foreign governments, companies, and individuals have become increasingly popular. The current U.S. administration under President Trump seems to use sanctions as an instrument of first choice to advance U.S. foreign policy objectives. Although sanctions regimes have become much more sophisticated, risks are imminent.<sup>49</sup> European sanctions against Russia following the military intervention in Ukraine in 2014 clearly underlined that sanctions cut both ways. According to an unpublished study by the Kiel Institute for the World Economy, the sanctions costs stood at US\$114bn in 2015. Sanctions costs for Russian companies accounted for around 60%. Export losses for Western nations stood at US\$44bn, with Germany shouldering around 40% of the loss

40 Ibid. p. 294.

41 As defined by James Rogers, Director, Global Britain Program, Henry Jackson Society. Quoted in: UK foreign policy in a shifting world order, p. 7.

42 Brazil, Russia, India, China, and South Africa.

43 Rose, "The Fourth Founding," p. 20.

44 Stuenkel, *The BRICS and the Future Global Order*, p. 159.

45 Skylar Mastro, "The Stealth Superpower," pp. 34-36.

46 Brunnermeier/Doshi/James, "Beijing's Bismarckian Ghosts," pp. 164-165.

47 Strategic Survey 2018, p. 33.

48 Bremer, "Economic Coercion and IT Companies."

49 Blackwill/Harris, *War by Other Means*, pp. 58-59; Nephew, *The Art of Sanctions*; Bey, "The U.S. supersedes its sanctions."

compared to 0.6% by the United States.<sup>50</sup> This example underlines that sanctions very much depend on allies. But the current U.S. unilateral instinct threatens to drive a permanent wedge between Washington and its allies, in particular in Europe. Europe's opposition against U.S. sanctions on Iran is a harbinger of things to come. Washington's policy forces European companies to make a choice: Go to Iran (or any other market) and face sanctions, or comply and remain active on the U.S. market. This is a direct geostrategic intervention in European corporate strategies. It is very hard to imagine that the same degree of intervention, say by Russia or China, would be tolerated – not to speak of the Tweets that Richard Grenell, U.S. Ambassador to Germany, dispatched in order to name and shame German companies for not withdrawing from Iran.<sup>51</sup>

### Competition for Narratives

Ambassador Grenell's Twitter activities reinforce the importance of the third trajectory of the grand systemic competition: narratives. The purpose of narratives is to underpin and legitimize worldviews. Both status quo powers and status quo challengers engage in developing competing narratives in order to make sure that their respective understanding and interpretation of the world prevail over their competitors'. Again, China's BRI serves as a perfect illustration of a narrative that goes well beyond geostrategic and geo-economic aspects:

What is made visible through infrastructure both at home and abroad is thus also a *redemptive narrative of the nation*. One can see a certain continuity with local patriotic movements of the early

twentieth century to buy out railways from foreigners who had wrung the right to build them from the weak Qing government. (...) The subsequent dependence of China's infrastructural development on Western technology, often in the form of colonial or, later, Soviet origins, constitutes an important historical context for contemporary infrastructural politics. In this sense, *infrastructure is about reclaiming modernity as a Chinese project*. In all these cases, infrastructure appears as an ultimate fix in its multiple senses: as a form of repair for the humiliations of the past, as a solution for the economic problems of the present, as an addictive form of power and revenue generation, as a remedy to overaccumulation especially in foreign reserves, and, in the colloquial sense, as a difficult or awkward situation.<sup>52</sup>

Not surprisingly, China's BRI narrative meets powerful counternarratives in the West. In parts, the Western suspicion about China's true motives is homemade by Beijing. When President Xi visited then-President Obama in 2015, he disclaimed any intention to use the islands in the South China Sea, which are part of the maritime leg of the BRI, as military bases. Shortly thereafter, satellite images revealed that the contrary was true.<sup>53</sup> Ashore, China's treatment of its Muslim minorities emerges as a BRI counternarrative. For a long time, China has held concerns over the security risks that could emanate from radicalized Muslims living in Xinjiang. This province is located at the intersection of the BRI connection with Central Asia and the China Pakistan Economic Corridor. Some analysts see a connection between the suppression of Muslim minorities and China's overriding geo-economic interests, but others contend that this argument is meant to undermine the BRI and

50 Marshall, "Deutschland trägt Hauptlast der Russland-Sanktionen."

51 His Twitter account is @RichardGrenell.

52 Bach, "China's Infrastructural Fix," pp. 39-40, emphasis added. Not surprisingly, China has produced several videos praising the benefits that BRI brings to the countries joining the initiative. See for example <https://www.youtube.com/watch?v=M0lJc3PMNIg>, which uses pop song lyrics,

or <https://www.youtube.com/watch?v=M0lJc3PMNIg>, showing singing children from BRI countries who explain the benefits of the initiative.

53 Brunnstrom/Martina, "Xi denies China turning artificial islands into military bases". On the island building, see in particular: <https://amti.csis.org/island-tracker/>.

shore up opposition against the initiative.<sup>54</sup> Similarly, elements of the forceful anti-Huawei communication agenda that has emerged in Five Eyes countries since spring 2018 can be interpreted as a way to deter and contain a technologically powerful competitor from entering new markets. The same pattern was at play against U.S. digital primes after the Snowden revelation that suggested wide-ranging collusion between U.S. intelligence agencies and these companies in view of using the digital infrastructure to listen in on allies and gain access to sensitive data.

As strategic narratives are central to national geostrategic and geo-economic ambitions, the corporate communication environment is becoming more complex and more dynamic. Corporate communications' primary task is to credibly position a company and its brands in the competitive environment. As the corporate environment is in flux, corporate communications explain how a company is going to respond to respective changes. In this regard, investor relations are key, in particular for stock-listed companies. Studies on the relationship between financial communication and corporate risk management show that vague CEO statements that lukewarmly address a company's problems can trigger short-term price declines.<sup>55</sup>

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**As strategic narratives are central to geostrategic and geo-economic ambitions, the corporate communication environment is becoming more complex**

In addition, financial analysts are reportedly willing to concede slight valuation markups and markdowns if they perceive investor relations as good or bad, respectively.<sup>56</sup> Thus investor relations are key to explaining how companies

handle geostrategic and geo-economic challenges. Other trends, mostly related to the advent of digital media, need to be taken into account as well, which makes the corporate communications agenda even more demanding:

- Investor activism and short selling go hand in hand with targeted media campaigns aimed at influencing the share price of a target company.<sup>57</sup> It is not hard to imagine that this kind of campaign could – knowingly or unconsciously – create windfall profits for geostrategic rivals.
- Executive populism à la Twitter as practiced by U.S. President Trump has the same effect. In April 2017, Trump used tweets to level attacks against Amazon and accused it of being responsible for losses incurred by the U.S. Postal Service.<sup>58</sup> Before that, he used Twitter to put the heat on defense companies such as Lockheed Martin or Boeing.<sup>59</sup> Using the same tactic against companies in other countries is a perfect recipe for political turbulence.
- Social movements increasingly use social networks to organize protests against companies, as evident in the United States. Following recent shootings at several U.S. high schools, advocates of stronger arms control called for a boycott of companies supporting the National Rifle Association (NRA) or offering special benefits to NRA members. Companies such as Delta, United Airlines, Hertz, First National Bank of Omaha, Symantec, and Wyndham Hotel Group have responded by terminating their support for the association or discontinued the respective programs.<sup>60</sup>

54 Rubio, "China's Campaign Against Muslim Minorities"; Lim, "China: Re-engineering the Uighur"; "China's partners should not turn a blind eye to fate of Uighurs"; Haq, "Xinjiang, BRI and 'Islamic Card'"; Li, "The Role of Islam in the Development of the 'Belt and Road' Initiative."

55 Ebert, "Hat die Sprache des Geschäftsberichts einen Prognosewert?"

56 Gohlke/Schiereck/Tunder, *Durch Finanzanalysten wahrgenommene Qualität der Investor Relations deutscher Unternehmen*.

57 Kokologiannis, "Im Visier der Leerverkäufer"; Hesse, "Wette auf den Absturz," pp. 65-67.

58 Sherman, "Trump is like, 'How can I f—k with him?'"

59 "Trump-Tweet liess Boeing-Aktienkurs einknicken"; "Lockheed F-35 fighter project in doubt after Trump tweet encourages rival Boeing."

60 Taylor/Garfield, "Here are all the brands that have cut ties with the NRA following gun-control activists' boycotts"; Creswell/Hsu, "Companies cut ties to the NRA, but find there is no neutral ground."

- In addition, corporate self-censorship should be seen in view of the geo-economic importance of large consumer markets. In February 2018, the German car maker Mercedes Benz posted a car advertisement on Instagram together with a quote from the Dalai Lama.<sup>61</sup> In response to Chinese online criticism, the ad was removed shortly thereafter. Mercedes Benz apologized via China's microblogging service Weibo, expressing the company's "deep regret for hurting the feelings of the Chinese."<sup>62</sup>
- Finally, changes in digital technology pose challenges to corporate communications. 'Deepfakes' are a case in point. Deepfakes are ultrarealistic digital manipulations of audio or videos to create convincing but inauthentic content. What makes them "unprecedented is their combination of quality, applicability to persuasive formats such as audio and video, and resistance to detection."<sup>63</sup> It does not take much imagination to suppose that CEOs could become victims of deepfake attacks prior to launching an initial public offering or a new product or announcing a new strategic partnership.

### Competition for Prosperity Models

How to generate wealth and prosperity is a key question for the 21st century. In China, for example, striving for prosperity has become the core issue of the current social contract in which regime support depends on the "continued improvements in personal prosperity."<sup>64</sup> So far, democratization and globalization have been the two obvious roads to economic success, but this assumption is being increasingly questioned.

Since 2015, economic globalization has been flattening,<sup>65</sup> but emerging economies increasingly set the pace (Figure 3). When it comes to global output, the developed world is still in the lead. But close to two-thirds of global growth now originates in emerging nations, with China and India as the major growth engines. The emerging world also accounts for more than 60% of global commodity consumption, holds close to 70% of the world's reserves, and leads global exports by a whisker over the developed world.<sup>66</sup> PwC, a consultancy, looks towards 2050 and sees a similar picture. According to PwC's forecast, the ranking of the top 10 leading nations by gross domestic product (GDP) is about to be fundamentally reshuffled, with six emerging nations among the top 10 in 2050 (Table 3).

Ranking	Top 10 in 2016	Top 10 in 2030	Top 10 in 2050
1	China	China	China
2	United States	United States	India
3	India	India	United States
4	Japan	Japan	Indonesia
5	Germany	Indonesia	Brazil
6	Russia	Russia	Russia
7	Brazil	Germany	Mexico
8	Indonesia	Brazil	Japan
9	United Kingdom	Mexico	Germany
10	France	United Kingdom	United Kingdom

Table 3: The Top 10 Leading Nations by GDP in 2016, 2030, and 2050  
Source: The Long View, p. 23.

61 The quotation read: "Look at situations from all angles, and you will become more open."  
62 Li/Jourdan, "Mercedes-Benz apologizes to Chinese for quoting Dalai Lama."  
63 Chesney/Citron, "Deepfakes and the New Disinformation War," p. 150.

64 This is the observation of Bruce Dickson, Director of the Sigur Center for Asian Studies, George Washington University, quoted in: McMahon, China's Great Wall of Debt, p. 201.  
65 "KOF Globalization Index: Globalization Lull Continues."  
66 Jensen/Prince, "How the world is changing: the secular picture."

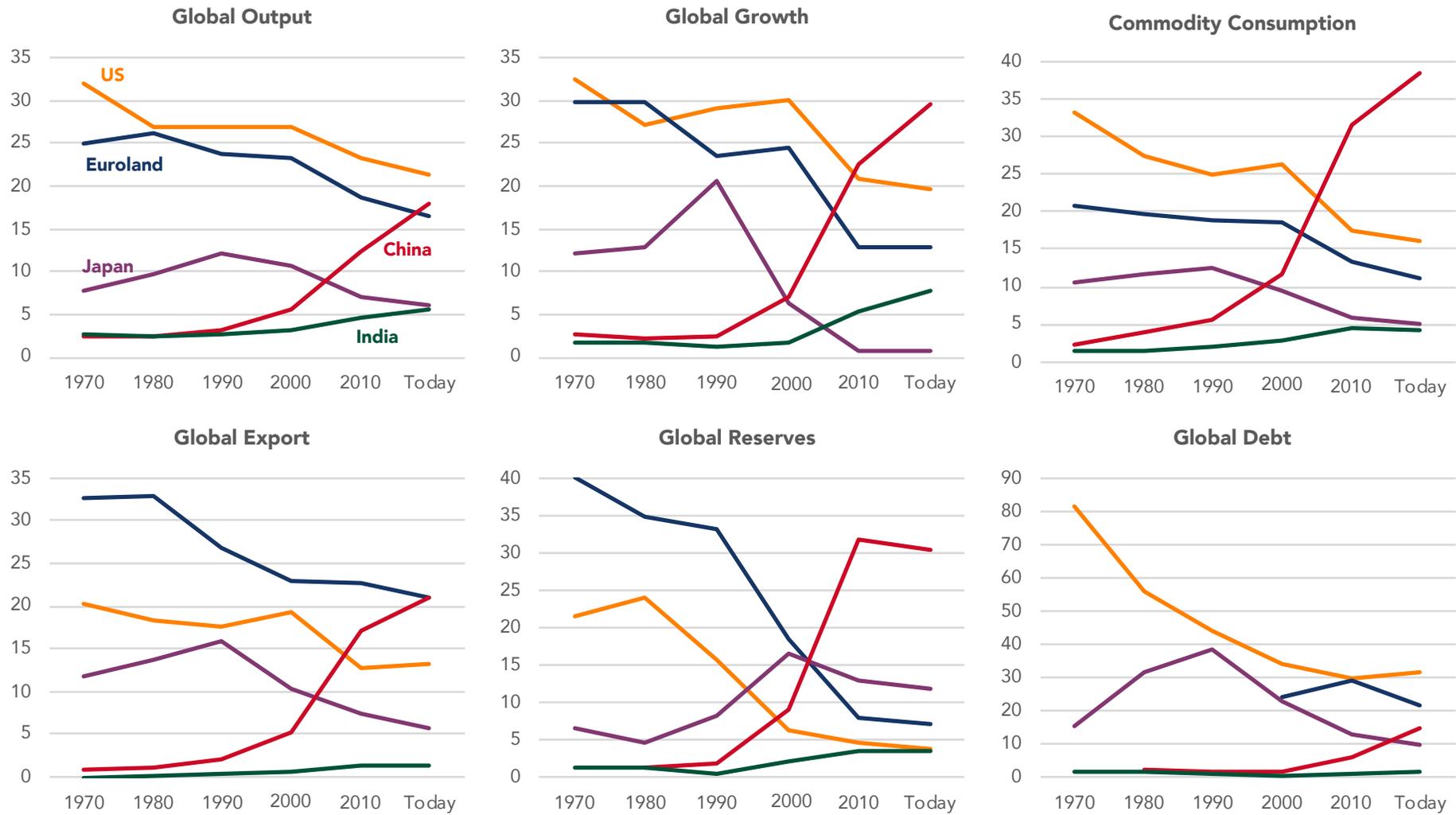


Figure 3: Developed World vs Emerging World (in % of total)  
Source: Jensen/Prince, "How the world is changing: the secular picture."

This projection coincides with a forecast on future trade corridors that the U.S. Citigroup published in 2011. Although much has changed since then, the trajectories outlined in the forecast give pause for thought.<sup>67</sup>

- In 2010, trade among West European nations accounted for roughly US\$7.4trn, or 20% of global trade; trade between advanced and emerging Asian nations came second with about US\$3.6trn, or 10%. The transatlantic trade corridor ranked fourth, with approximately 6% of the total volume.
- In 2030, the overall trade volume could be three times bigger. Trade between advanced and emerging Asian countries would lead with 16%, or about US\$19trn, followed by intra-Western European trade with a bit more than 9%, or US\$11.3trn. Transatlantic trade would only rank 9th with 3%, or US\$3.7trn.
- In 2050, Asia would dominate the major trade patterns. Trade among advanced Asian nations and between advanced and emerging Asian nations would account for roughly US\$77trn, or about 27% of the global total. Trade between emerging Asian nations and Western Europe would rank 3rd (8% or \$23trn), followed by intra-Western European trade (6% or \$17trn). The transatlantic trade corridor, in contrast, would no longer rank among the world's top 10 trade corridors!

The exact numbers presented by these and other projections are less relevant than the core message: Emerging nations increasingly call the shots in the world economy – and this comes with serious strategic consequences for the rules, norms, principles, and standards underpinning the future economic and political order. As Richard Carney argues in

his landmark study on authoritarian capitalism with a focus on Asia, authoritarian, state-centric emerging nations do not disband capitalism. Rather they practice capitalism in a way that upholds their rule, thereby limiting or even neglecting democratic principles and the rule of law. Just as there are variations among democracies, authoritarian capitalism varies regarding the capacity and the motivation to exert state influence.<sup>68</sup> And like any other politico-administrative system, the effectiveness of state authoritarianism very much depends on its capability to deliver, in particular regarding controlling and directing the behavior of the nation's economic actors.<sup>69</sup> But overall, the message is clear: You no longer need to democratize in order to be economically successful. Even more: Today, China's elites believe that imitating the West "would be tantamount to abdicating China's edge."<sup>70</sup>

The economic success of emerging authoritarian nations is a growing source of concern. As Figure 4 illustrates, some of the world's leading Sovereign Wealth Funds are home to these regimes, which raises questions about the motives of the funds' overseas investments. In addition, China, Russia, and their partners show a growing propensity to deviate from the U.S. dollar and to handle trade in their own currencies.<sup>71</sup> But China's renminbi has lost much of its earlier attraction, as only 15% of China's trade is settled in the local currency compared to 30% in 2015.<sup>72</sup> Currencies, however, are the ultimate symbol of national sovereignty.<sup>73</sup> Despite underlying economic trends pointing in the opposite direction, ambitious emerging countries will feel a strong incentive to highlight their economic prowess by talking up their own currencies and thus to uphold the narrative of new emerging centers of economic power. In this regard, the notion that China and Islamic countries can cooperate on Islamic finance in order to "expand the influence of China and Islamic countries in political, economic, cultural fields

67 Buiter/Rahbari, *Trade transformed*, pp. 23-24.

68 Carney, *Authoritarian Capitalism*.

69 Norris, *Chinese Economic Statecraft*, pp. 224-230.

70 Maçães, *Belt and Road*, p. 178.

71 "China and South Korea Reach a New Trade Agreement"; "China und Südkorea wollen Dollar entmachten"; "Iran, Russia mull ditching dollar in trade ahead of

US sanctions"; "Russia, China postpone deal on yuan-ruble settlements – Russian finance Minister."

72 *China's Belt and Road at Five*, pp. 11-12.

73 See also: Wheatley, *The Power of Currencies and the Currencies of Power*.

around the world" is particularly noteworthy.<sup>74</sup> Preferential economic conditions such as interest rates on credits or the reduction of tariffs will be used as complementary instruments to provide an economic cocoon for relations among like-minded nations. The striving to set up international financial institutions in which these countries gain the upper hand, such as the Asia Infrastructure Investment Bank, rounds out the picture.

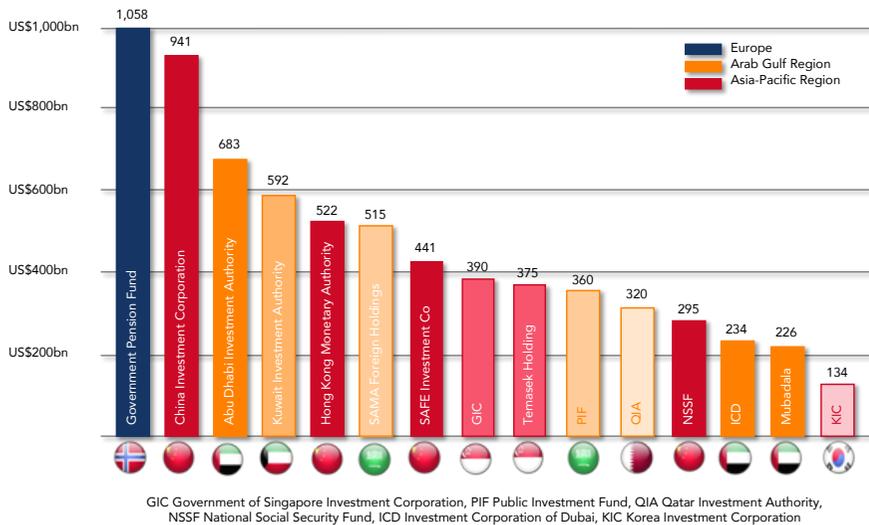


Figure 4: The World's Leading Top 15 Sovereign Wealth Funds by Assets  
 Source: <https://www.swfinstitute.org/sovereign-wealth-fund-rankings/>.

The developed world faces the dilemma that it cannot just idly observe the rise of new economic competitors, nor can Western nations rest assured that economic containment will have the desired effect. Instead, there is a growing risk that emerging nations will redouble their

74 Li, "The Role of Islam in the Development of the 'Belt and Road' Initiative," p. 42.

efforts to reduce their dependence on the current economic system by favoring import substitution, advancing economic decoupling, promoting national champions, and pushing for more protectionism. Economically powerful status quo challengers will not only point at the United States to justify their policy but will also feel tempted to try to lure trade partners to their side.

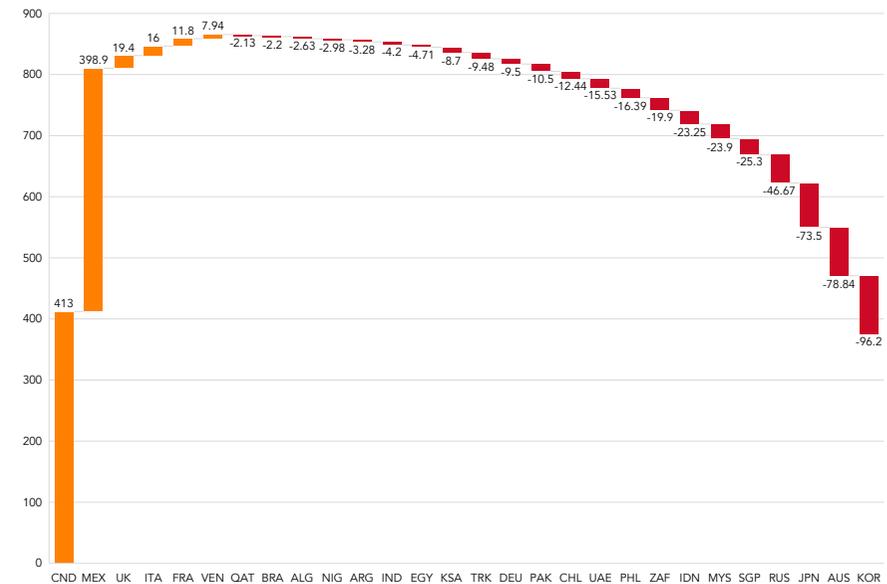


Figure 5: U.S. vs China Trade Surplus or Trade Deficit of Selected Trade Partners (2016, in US\$bn)  
 Source: <https://atlas.media.mit.edu/en/>.

Figure 5 shows the 2016 trade relations, i.e., the total imports and exports, of a select group of 28 geostrategically important nations with China and the United States.<sup>75</sup> For Canada, Mexico, the United

75 The figures illustrate the net balance. In 2016, Canada's total trade volume stood at US\$754bn. Trade with the U.S. was worth US\$476bn compared to

Kingdom, Italy, France, and even Venezuela, trade with the United States outpaced trade with China. On the other side of the spectrum, South Korea, Australia, Japan, Russia, and Singapore depended more on trade with China than with the United States. The significance of the respective net amount depends on the relative importance of both nations as trade partners. The United States, for example, accounted for 63% of Canada's and 62% of Mexico's trade volume in 2016. China, in return, is the most important trade partner for Australia (29%), Chile (26%), and South Korea (23%). The regional pattern is obvious: Those partners that matter most as U.S. allies in the Asia-Pacific (South Korea, Australia, Japan, Singapore) and the Arab Gulf (United Arab Emirates, Saudi Arabia, Qatar) regions all depend more on trade with China than with the United States. This prompts the question as to whether growing economic ties with Beijing can overwrite political loyalties with Washington, or to what extent countries might be tempted to play off China against the United States by cooperating with one partner to gain concessions from the other.<sup>76</sup>

Ultimately, growing economic confrontation in combination with local indigenization and geostrategic cocooning of political relations among like-minded nations runs the risk of a bifurcated future international trade system, with different groups of nations adopting diverging policies adhering to different standards. This could effectively end globalization as we knew it.<sup>77</sup> If and to what extent this concern materializes very much depends on the long-term attractiveness of alternative models of prosperity advanced by authoritarian capitalist states. The good news is that despite the impression that authoritarianism is gaining the upper hand, overturning the current international order remains challenging because the non-democratic worldview is still unattractive. As Bentley Allan, Srdjan Vucetic, and Ted Hopf recently argued with regard to China, the country's "identity discourse contains little (...) that could be extrapolated into a compelling vision or ideology in support of an alternative international order." Also, its elite is

alone in "openly opposing the democratic element of Western hegemony."<sup>78</sup> However, growing dissatisfaction with the liberal-democratic model could provide a fertile ground that China and other status quo challengers might want to exploit if they are serious about overturning the current international order.

US\$63bn with China. The net balance was US\$413bn in favor of the United States.

76 See for example: Spektor, "Bolsonaro will regret baiting the Chinese tiger."

77 Ip, "Trump's trade impact: a world divided in two."

78 Allan/Vucetic/Hopf, "The distribution of identity and the future of international order," pp. 862-863.

## Porter Goes Geopolitics: Consequences for Business

An increasingly polarized international environment that is rife with confrontations affects business prospects. Table 4 makes it clear that each dimension of the four-fold grand systemic competition discussed above directly influences core management functions. In addition, the forces at play also change the fabric of the competitive environment in which business operates. Looking at this dynamic through the lens of Michael Porter's Five Forces, a standard framework for analyzing competitiveness, suggests that the consequences will be both fundamental and far-reaching.<sup>79</sup>

*First of all, competitive rivalry looks at the strength and the number of a company's competitors and how they might bring their advantages into play.* One of the most fundamental aspects of the new geo-economic environment is the rise of state-owned enterprises (SOE). These enterprises combine geostrategic and geo-economic motives.<sup>80</sup> They can take greater risks and offer services at advantageous conditions unrivaled by competitors because they serve political ends. The rise of SOE is all the more important as ambitious emerging countries and status quo challengers move up the value chain from raw material exploitation and basic production to offering ever more demanding products and services, including the development of their own technologies. This suggests that an increasing number of incumbent companies in developed countries will face SOE competition in almost all industry and service sectors, as Table 5 illustrates.

79 Porter, "How competitive Forces Shape Strategy."

Competition for...	...Is Relevant for Core Management Functions Like:
<b>Zones of influence</b>	<ul style="list-style-type: none"> <li>▪ Access to markets, resources, and technology</li> <li>▪ Human resources management (e.g., attraction and retention of talents)</li> <li>▪ Supply chain management and logistics</li> <li>▪ Funds and funding conditions</li> </ul>
<b>Strategic narratives</b>	<ul style="list-style-type: none"> <li>▪ Strategic communication</li> <li>▪ Branding strategy</li> <li>▪ Public and governmental affairs</li> </ul>
<b>Rules, norms, principles, and standards</b>	<ul style="list-style-type: none"> <li>▪ Access to markets, resources, and technology</li> <li>▪ Intellectual property protection and intellectual property sharing</li> <li>▪ Regulatory and governmental affairs</li> <li>▪ Compliance management</li> <li>▪ Risk management</li> </ul>
<b>Prosperity models</b>	<ul style="list-style-type: none"> <li>▪ Technology strategy</li> <li>▪ Research and development strategy/cooperation</li> <li>▪ Joint venture policy</li> <li>▪ Government-supported export promotion programs</li> </ul>

Table 4: The Impact of Grand Systemic Competition on Core Management Functions

*Second, new market entrants benefit from low barriers of entry or new business models that look at previously underexploited ways of offering a service.* The lack of a corporate track record can become an advantage if companies approach business with a fresh look that is not bound by previous decisions. Digitization accelerates new entrants, in particular in emerging countries. As we will discuss below (Figure 6), the Chinese examples of Alibaba, WeChat, and JD.com illustrate the respective benefits. Because there were hardly any incumbent competitors in China for digital financial services or large-scale logistics, these companies were able to develop business models that connect previously isolated

80 Mohan/May, "The Geopolitics of South-South Infrastructure Development."

market segments, thereby changing the dynamic of competition in each market segment.

*Third, the threat of substituting existing products and services increases.* Emerging markets want to reduce dependence on traditional suppliers by cutting back imports. Thus, they prefer import substitution and strive to establish local champions. Local champions serve as examples for growing national economic and technological prowess and illustrate the savviness of local leaders in choosing winning industry sectors.

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### **Identity politics and boycotts can be used to exert pressure on foreign companies and their home governments**

That is why local champions receive comprehensive government support via tailored promotion programs such as "Made in India." This approach, aiming for indigenization of products, services, and technology, is offsetting traditional suppliers. In addition, indigenization often goes hand in hand with substantial export support. The respective governments are willing to open political doors to their national champions, provide favorable financial conditions, and fast-track export licenses. Thus, indigenization will increasingly heat up competition for access to third markets as well.

*Fourth, normative and political factors expand the bargaining power of buyers.* Data protection is central to the upcoming geo-economic technology competition. In the long run, nothing will be more ruinous for technology companies than negligence with regard to protecting consumer data or gross violation of existing data protection standards. Facebook, for example, lost more than US\$100bn within a few trading days in the aftermath of a scandal that saw data analytics company Cambridge Analytica inappropriately using personal Facebook data.<sup>81</sup> Data protection can greatly increase the regulatory burden for

companies operating in different markets, if the respective regulations increasingly require companies to give host nations special access rights and retain sensitive personal data in host nations rather than securely storing them in the countries of origin of the respective service provider. As Apple's experience in China shows, this creates a first-rate PR challenge, as tech companies need to fight the impression of collusion with authoritarian regimes.<sup>82</sup>

Identity politics constitute another element of buyers' bargaining power that sits at the intersection of normative and political factors. Identity politics is the conscious political instrumentalization of belonging to social groups or social identities.<sup>83</sup> Identity politics can be used to stir local opposition against foreign suppliers as part of boycott campaigns to exert pressure on companies and their home governments. For example, in 2008 the French supermarket chain Carrefour was boycotted in China after pro-Tibetan protests in Paris.<sup>84</sup> Such boycotts can also be used as a specific political lever to enforce concessions. Several years later, China went one step further in its relationship with South Korea. In 2017, Seoul decided to station a U.S. air defense system, a move strongly opposed by Beijing. In response, the Chinese authorities shut 87 out of 99 Lotte Mart supermarkets in China, the South Korean group's biggest overseas market. In total, Lotte Mart expected losses of around US\$885m in China and later decided to leave the Chinese market.<sup>85</sup>

81 Dobbs, "Facebook has now lost \$100 billion in value since February."

82 Liao, "Apple officially moves its Chinese iCloud operations and encryption keys to China."

83 The global Risks Report 2018, p. 10, 34.

84 Branigan, "Chinese nationalists hit at Carrefour over Tibet."

85 "South Korea retailers a casualty of political stand-off"; "Lotte Mart to exit the Chinese market."

All industries	Aluminum	Communications equipment	Computer hardware	Computer services
<ul style="list-style-type: none"> <li>ICBC (CHN)</li> <li>China Construction Bank (CHN)</li> <li>JP Morgan Chase (US)</li> <li>Berkshire Hathaway (US)</li> <li>Agricultural Bank of China (CHN)</li> </ul>	<ul style="list-style-type: none"> <li>Norsk Hydro (NOR)</li> <li>China Hongqiao Group (CHN)</li> <li>Aluminium Corp of China (CHN)</li> <li>UC Rusal (CYP/RUS)</li> <li>Hindalco Industries (IND)</li> </ul>	<ul style="list-style-type: none"> <li>Cisco Systems (US)</li> <li>Nokia (FIN)</li> <li>ZTE (CHN)</li> <li>Ericsson (SWE)</li> <li>Corning (US)</li> </ul>	<ul style="list-style-type: none"> <li>Apple (US)</li> <li>Hewlett Packard (US)</li> <li>Hewlett Packard Enterprise (US)</li> <li>Dell Technologies (US)</li> <li>Fujitsu (JPN)</li> </ul>	<ul style="list-style-type: none"> <li>Alphabet (US)</li> <li>IBM (US)</li> <li>Facebook (US)</li> <li>Tencent Holdings (CHN)</li> <li>Accenture (IRE)</li> </ul>
Construction materials	Consumer financial services	Diversified chemicals	Diversified metals & mining	Diversified utilities
<ul style="list-style-type: none"> <li>Saint-Gobain (FRA)</li> <li>CHR (IRE)</li> <li>Daikin Industries (JPN)</li> <li>HeidelbergCement (DEU)</li> <li>Anhui Conch Cement (CHN)</li> </ul>	<ul style="list-style-type: none"> <li>American Express (US)</li> <li>Capital One Financial (US)</li> <li>Visa (US)</li> <li>Orix (JPN)</li> <li>HDFC (IND)</li> </ul>	<ul style="list-style-type: none"> <li>BASF (DEU)</li> <li>Bayer (DEU)</li> <li>Saudi Basic Industries (KSA)</li> <li>DowDuPont (US)</li> <li>LyondellBasell Industries (US)</li> </ul>	<ul style="list-style-type: none"> <li>Glencore International (CHE)</li> <li>BHP Billiton (AUS)</li> <li>Rio Tinto (UK)</li> <li>China Shenhua Energy (CHN)</li> <li>Anglo American (UK)</li> </ul>	<ul style="list-style-type: none"> <li>Veolia Environment (FRA)</li> <li>American Water Works (US)</li> <li>Beijing Shougang (CHN)</li> <li>China Longyuan Power (CHN)</li> <li>Guangdong Investment (HKG)</li> </ul>
Drug retail	Food processing	Heavy equipment	Iron and steel	Major banks
<ul style="list-style-type: none"> <li>CVS Health (US)</li> <li>Walgreens Boots Alliance (US)</li> <li>Shanghai Pharmaceuticals (CHN)</li> <li>Rite Aid (US)</li> </ul>	<ul style="list-style-type: none"> <li>Nestlé (CHE)</li> <li>Kraft Heinz Company (US)</li> <li>Mondelèz International (US)</li> <li>Danone (FRA)</li> <li>Archer Daniels Midland (US)</li> </ul>	<ul style="list-style-type: none"> <li>Caterpillar (US)</li> <li>Volvo Group (SWE)</li> <li>Deere &amp; Company (US)</li> <li>CRRC (CHN)</li> <li>Komatsu (JPN)</li> </ul>	<ul style="list-style-type: none"> <li>Citic Pacific (HKG)</li> <li>Vale (BRA)</li> <li>ArcelorMittal (LUX/IND)</li> <li>Posco (KOR)</li> <li>Baoshan Iron &amp; Steel (CHN)</li> </ul>	<ul style="list-style-type: none"> <li>ICBC (CHN)</li> <li>China Construction Bank (CHN)</li> <li>JP Morgan Chase (US)</li> <li>Bank of America (US)</li> <li>Wells Fargo (US)</li> </ul>
	Oil & gas operations	Other transportation	Semiconductors	
	<ul style="list-style-type: none"> <li>Royal Dutch Shell (NLD)</li> <li>Exxon Mobil (US)</li> <li>Chevron (US)</li> <li>Total (FRA)</li> <li>Sinopec (CHN)</li> </ul>	<ul style="list-style-type: none"> <li>Moller-Maersk (DNK)</li> <li>Atlantia (ITA)</li> <li>Shanghai International Port (CHN)</li> <li>Abertis (ESP)</li> <li>Ferrovial (ESP)</li> </ul>	<ul style="list-style-type: none"> <li>Samsung Electronics (KOR)</li> <li>Intel (US)</li> <li>Taiwan Semiconductor (TWN)</li> <li>Broadcom (US)</li> <li>SK Hynix (KOR)</li> </ul>	

Table 5: The Five Largest Public Companies in Selected Industries

Source: <https://www.forbes.com/global2000/list/>. Note: State-owned companies are shown in red.

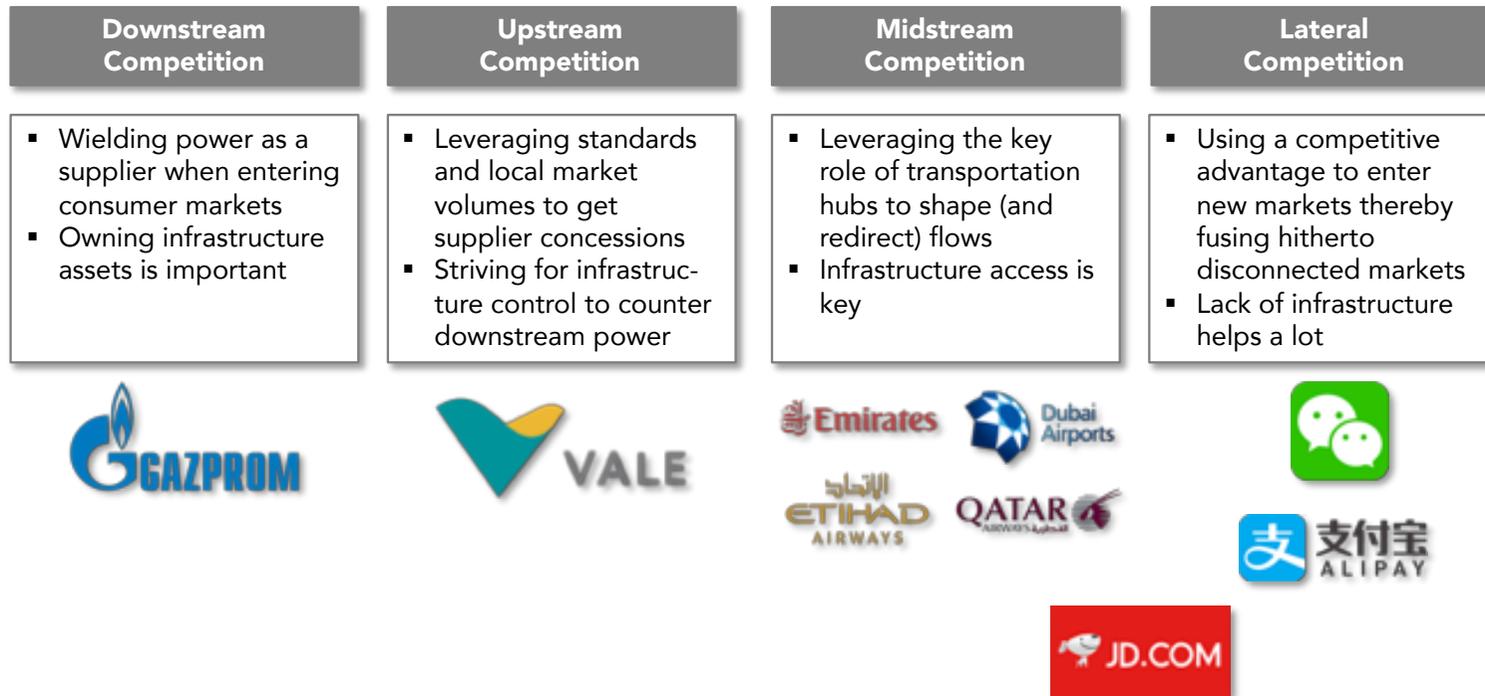


Figure 6: Four Trajectories of 21st Century Supply Chain Competition

Finally, the current geo-economic climate boosts the bargaining power of suppliers from emerging countries. Local suppliers are strengthened because of the drive towards indigenization and the ambition to establish local champions. Aspiring regional powers like South Korea and Turkey or leading Arab Gulf states like Qatar, Saudi Arabia, and the United Arab Emirates rely on programs to advance industrial cooperation with foreign partners. These programs entail transfer of technology and skills to ramp up local industrial and technological expertise, which helps establish future competitors in these markets. Local governments come up with specific requests for cooperation with preferred local partners that have been identified as future local champions.

In sum, the impact of these trends will be fundamental because all of them affect the backbone of modern business operations: corporate supply chains. Corporate supply chains have become the center of gravity of the emerging geo-economic competition because they provide the highways for strategic flows. Shaping the volume and the direction of these flows bestows power, and this is what status quo challengers are looking for. Geo-economic competition for supply chains will thus evolve along four different trajectories (Figure 6).

*Downstream competition is the 'default pattern' in most extractive industries, as suppliers try to leverage control over resources and the infrastructure used to reach consumer markets. For decades, Russia's energy foreign*

policy has been characterized by downstream control, with Gazprom as the prime instrument for gas deliveries to Europe. This is also the reason why the European Commission has stepped up efforts to unbundle Gazprom's downstream grip and cut back the company's influence. Most interestingly, as the United States enters global energy markets as a new exporter of oil and gas, it seems to follow the same pattern of using oil and gas deliveries as a political currency<sup>86</sup> and considers efforts to fund energy infrastructure in recipient countries.<sup>87</sup>

*Upstream competition describes a situation where a company or a country leverages a dominant market position to 'reverse engineer' the supply chain at the cost of an incumbent downstream competitor.* This pattern was at play in the recent past between China and Brazil. China is the world's leading shipbuilder.<sup>88</sup> Shipbuilding is closely connected to steel production, which in turn depends on access to iron ore. Brazil's Vale is one of the world's leading iron ore producers and owns a substantial share of the world's seaborne iron ore trade capacity.<sup>89</sup> China is also Brazil's most important iron ore export market.<sup>90</sup> In early 2012, China started to keep iron ore ships from Brazil out of its ports. Among other things, China argued that Vale's iron ore ships do not comply with China's safety regulations. In return, Vale stopped hiring Chinese vessels to ship iron ore to the country.<sup>91</sup> This nicely illustrates the conflict when downstream and upstream interests collide.

86 Rosenberg/Gordon/Maruyama, *Crude Oil Export and U.S. National Security*, pp. 9-13.

87 In particular, the U.S. is reportedly considering funding support for the Three Seas Initiative in Europe. See: Darasz, "The United States to support Three Seas LNG initiative."

88 In 2017, China accounted for 36% of the total deliveries of newbuildings, followed by South Korea (35%) and Japan (20%). See: *Review of Maritime Transport 2018*, p. 37.

89 Els, "400,000 tonnes of dead weight: Vale's massive ore carriers suffer new setback."

90 In 2016, Brazil exported 53% of its iron ore worth \$14.1bn to China. See: [https://atlas.media.mit.edu/en/visualize/tree\\_map/hs92/export/bra/show/2601/2016/](https://atlas.media.mit.edu/en/visualize/tree_map/hs92/export/bra/show/2601/2016/).

*Midstream competition emerges from the ambition of a company or a country to exploit its central location, connecting different sources of origin and destination.* There is hardly a better example to illustrate the power of midstream competition than the air traffic policy of Qatar and the United Arab Emirates. Thanks to domestic infrastructure investments, the purchase of modern fleets, top-class service, and comprehensive government support, Qatar Airways, Etihad, and Emirates have succeeded in becoming leading airlines – and the nations have shifted global transport flows away from major established hubs in Europe. Dubai firmly established its role as the world's fifth busiest airport for cargo traffic and third busiest airport for passenger traffic in 2016.<sup>92</sup> In addition, all three airlines have become strategically important customers of Airbus and Boeing.<sup>93</sup> However, midstream competition in this particular region is vulnerable to geostrategic rifts, as the Saudi-UAE-led boycott against Qatar has illustrated since late 2017. In the initial weeks of the boycott, rerouting the air traffic of Qatar Airways resulted in significant disruption of its schedule and extra costs.<sup>94</sup>

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**Arab Gulf airlines are perfect symbols of midstream supply chain competition and illustrate the vulnerability of geo-economic ambitions in a fragile region**

91 Hook/Wright, "China blocks Vale's large iron ore carriers"; Blount/Lorenzi, "Vale says giant ore ships to win China OK in months." In 2015, China modified its rules to allow Vale ships into its harbors. See: "China rule change paves way for Vale's mega-ships official entry."

92 Europe's busiest airport in 2016 was Paris, which ranked ninth for cargo and tenth for passenger traffic. See: <https://aci.aero/data-centre/annual-traffic-data/>

93 Emirates, for example, accounts for 162 of a total of 213 A380 airbus jets. The airline has also ordered 150 out of a total of 326 Boeing 777X jets. See: <https://www.airbus.com/aircraft/market/orders-deliveries.html>; <http://www.boeing.com/commercial/#/orders-deliveries>.

94 Johnson/Huxham, "The GCC Crisis and Qatar Airways."

Finally, lateral competition offers most interesting geostrategic and geo-economic options. Unlike the other three patterns, lateral supply chain competition benefits from the absence of infrastructure. In this case, there is no, or only weak, path dependency on established business models, which opens the door for new ways of thinking by moving across supply chains in different industry sectors. One of the best examples is Alipay and WeChat Pay. Both Alibaba and WeChat started

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**Is JD.com's drone logistics only a commercial necessity or the harbinger of a new approach to military logistics?**

out as online platforms and social networks. Due to the absence of electronic banking solutions in China, they quickly entered into this field, thereby literally 'killing' traditional payment services and effectively merging online banking with social networks. In a similar way, Baidu leverages its expertise in artificial intelligence developed for web services to enter new markets, for example by forging close cooperation with Ford to develop autonomous cars. JD.com, one of China's biggest retail stores, offers yet another glimpse into lateral supply chain competition. To improve logistic services in China, JD.com is developing a commercial drone that can carry up to 1 ton of cargo and planning to build over 180 drone airports in Southwest China. The aim of venturing into establishing an air transport network is to deliver agricultural products from the province of Sichuan to anywhere in China within 24 hours and to drastically cut costs. All of these examples must be seen in light of the growing geo-strategic competition, as these companies are quickly entering export markets. And JD.com's private drone and airport development comes with obvious potential defense benefits that need to be closely monitored.<sup>95</sup>

95 Lee, AI Superpowers; "How Alibaba is leading digital innovation in China"; "What the sale of Baidu's banking unit for 1.9b says about the future of payments"; Wang, "WeChat Takeover"; "Baidu warns Google 'the world is now copying from China'"; "Ford partners with Baidu to develop new AI tech and other digital services"; Chan, "One of China's biggest online retailers plans to

If and to what extent companies operating in different sectors will be affected by these trends requires in-depth analysis that is beyond the scope of this paper. But the following sections will shed initial light on what to expect in different sectors.

## Agribusiness

Agribusiness has been increasingly politicized in the recent past. First of all, geostrategic power shifts have provided a fertile ground for the *rise of new agro-powers* like China and Brazil. The fact that agro-powers broaden their agricultural research footprint and reach out to other emerging countries increases the risk for incumbent agribusiness companies in developed countries to be bypassed. The head of the Tunisian Agency for the Promotion of Agricultural Investments perfectly captured the mood in 2015 when he coined the phrase "Arab investments and Brazilian know-how on Tunisian soil" to describe the new cooperation vector.<sup>96</sup> China's support for the South-South cooperation of the Food and Agriculture Organization (FAO) points in a similar direction. Beijing is offering a single package with financial aid, Chinese technology, and Chinese scientific expertise, thereby pursuing political goals as well.<sup>97</sup> These trends matter all the more as emerging countries strive to emulate the policy approaches of new agro-powers in the fields of agricultural research and agribusiness regulation. This has prompted some observers to talk about the possible rise of a 'Food OPEC' that could shape food markets in the future.<sup>98</sup>

The rise of agro-powers and state capitalism in leading emerging countries coincides with growing *power concentration along the global food supply chain*. By striving for control of the supply chain through

build nearly 200 drone airports to bring e-commerce to rural China"; Lin/Singer, "In China, an e-commerce giant builds the world's biggest delivery drone."

96 Rocha, "Tunisia wants agribusiness partnerships with Brazil."

97 FAO-China South-South Cooperation Program.

98 The Future of Food and Farming, p. 61.

investments in land production, processing, and transport capacities, large consumer countries react to a growing feeling of vulnerability caused by fluctuating prices. This also stirs opposition, however. Most Arab Gulf states, for example, focus on agricultural land investments abroad due to dire geographical conditions in the region. But their striving for food security via land investments faces political push-backs in recipient countries, because it places additional strain on local farmers.<sup>99</sup>

All of these developments are directly relevant for *market standards in the global agribusiness*. Recently, Chinese authorities rejected U.S. corn supplies because they had identified genetically modified organisms that had not yet been approved for market release in China. U.S. corn suppliers accused Syngenta of negligence, as the company had supplied the corn strain MR162 to the U.S. market before getting Chinese approval. Although Chinese and U.S. authorities struck a deal in late 2014, damage complaints amount to US\$1-3bn.<sup>100</sup> At the same time, there is evidence that agricultural products produced by Chinese companies abroad receive preferential treatment upon entry into the Chinese market. In November 2014, China received corn shipments from Bulgaria, where a Chinese company had invested US\$80m to grow and process grains for the Chinese market. Chinese media reported that these shipments "were expedited through inspection and quarantine at the Chinese port while most other grain shipments have to wait for days or weeks while inspection and quarantine procedures are completed."<sup>101</sup>

Finally, the agribusiness finds itself at the center of *sanctions and counter-sanctions*. EU and U.S. sanctions against Russia following the

military intervention in Ukraine in 2014 initially hit the Russian agricultural sector. Since then, however, Russia has managed to substitute imports with local products and, thanks to the falling ruble, has become a leading agricultural exporter.<sup>102</sup> In addition, the trade dispute between the United States and China makes it clear that the agricultural sector finds itself at the center of sanctions and counter-sanctions in order to build up domestic political pressure in the respective target countries.<sup>103</sup>

## Banking and Finance

Geo-economically empowered financial actors in nations that are status quo challengers could rewrite the rules of global banking by advancing political over economic motives. This can have serious consequences for the long-term economic health of target nations and the functioning of the international financial architecture.

First, international *financial institutions under non-Western influence* – that have a "different flavor"<sup>104</sup> – are contentious. For China, in contrast, an alternative financial governance is a matter of prime geostrategic and geo-economic importance. On the one hand, China's push for new financial institutes reflects the infrastructure development need that goes hand in hand with the BRI. On the other hand, Beijing feels that the current global financial governance structure does not adequately mirror China's growing economic clout. The country holds more than US\$3.1trn in foreign currency reserves or about one third of the global

99 See, for example: Shepherd, GCC States' Land Investments Abroad. The Case of Ethiopia.

100 In China, imported agro-biotech products must pass the same rigorous permitting process as agro-biotech products produced in China. In addition, China requires the respective products to have received market approval in their respective countries of origin. See: "Chinese Regulation of Agricultural

Biotechnology;" Polansek, "In wake of China rejections, GMO seed makers limit U.S. launches."

101 Gooch/Gale, "Get ready for Chinese overseas investment in agriculture."

102 Buckley, "Russian agriculture sector flourishes amid sanctions."

103 Lanz, "Die US-Agrarwirtschaft im Schussfeld," pp. 26-27.

104 Stephen King, Senior Economic Advisor, HSBC, quoted in: UK foreign policy in a shifting world, p. 62.

foreign exchange reserves worth US\$11.3trn,<sup>105</sup> but it only has minority voting rights in the International Monetary Fund and the Asian Development Bank. China's ambition to launch the Asian Infrastructure Investment Bank and the New Development Bank reflects its desire to

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**The US\$100bn Vision Fund combines Saudi Arabia's drive for economic diversification with the country's growing cross-regional financial footprint to create a new tool for technology-driven development policy**

correct this imbalance. This is mirrored in the fact that China is the key funder of both institutions. Together, the capital of the two financial institutions stands at around US\$200bn, which is more than the capital endowment of the Asia Development Bank.<sup>106</sup> Concerns over the transparency of these future institutions and the lending conditions prompted the United States under President Barack Obama to frown at these initiatives and to oppose the AIIB launch in particular. But this position has been criticized on the grounds that more economic ownership of development finance projects by Asia-Pacific partners should be welcome.<sup>107</sup>

A second issue of concern is the *risk appetite of state-owned banks*. As these institutes are being used to advance political programs, they can afford to be much more risk-taking than traditional commercial banks are. As a result, they offer financial conditions unrivaled by competitors. Back in 2010, the German Committee on Eastern European Economic Relations published a report on Chinese credit conditions in Central and Eastern Europe suggesting that credits by Chinese lenders were up to 10% cheaper than similar German offerings.<sup>108</sup> Favorable financial

conditions are used to create an economic environment in the target countries that benefits Chinese companies. From 2007 to 2011 the Chinese Development Bank set up a bilateral investment fund for Venezuela's energy giant PDVSA worth US\$40bn. Whereas PDVSA issued bonds worth US\$3bn for 12.75% in 2011, lending via the fund came at interest rates of 2-6%. In return, China not only regularly received oil from Venezuela, which China used for its own demand and oil trade, but in addition, Chinese companies benefited from government orders for construction projects for infrastructure development, telecommunications, and energy projects.<sup>109</sup> However, favorable conditions come at a price for lenders. In Ghana, the repayment scheme for Chinese-backed oil and gas projects would have required the government to pay around US\$6.4bn for a US\$3bn loan.<sup>110</sup> Things can get even worse, as Sri Lanka experienced when it defaulted on the land for the Hambantota port and handed over control of the port to China Merchants Port for debt relief, which faced heavy local opposition.<sup>111</sup>

*Using investment funds as modern development policy instruments* is another noteworthy trend. The US\$100bn Vision Fund set up by Japan's SoftBank and the Public Investment Fund (PIF) of Saudi Arabia is a prime example. The Vision Fund is part of the Saudi Arabia's ambitious Vision 2030 to diversify the national economy and reduce dependence on oil revenues. The Vision Fund is thus a prime instrument to gain access to key technologies such as artificial intelligence, robotics, or augmented/virtual reality. But there are at least two challenges. Saudi Arabia's increasingly assertive and foreign policy, which has led to the war in Yemen and the fierce competition with Iran, can cause problems for companies accepting money from the fund. In addition, the fund's

105 Data by the International Monetary Fund. See: <http://data.imf.org/regu-lar.aspx?key=61280812>; <http://data.imf.org/?sk=E6A5F467-C14B-4AA8-9F6D-5A09EC4E62A4>.

106 <https://www.adb.org/about/main>.

107 On these initiatives, see in particular: Griffith-Jones, A BRICS Development Bank; Morris, Responding to AIIB; Weiss, Asian Infrastructure Investment Bank;

Lichtenstein, A Comparative Guide to the Asian Infrastructure Investment Bank; Triebe, "Brics-Länder bauen an eigener Finanzwelt."

108 Chinesische Aktivitäten in Osteuropa.

109 Sanderson/Forsythe, China's Superbank, pp. 132-138.

110 Mohan/May, "The Geopolitics of South-South Infrastructure Development.

111 Marlow, "China's \$1 Billion White Elephant"; Mundy, "China-backed port sparks Sri Lanka sovereignty fears."

extremely deep pockets are pushing other investors against the wall: "A routine \$100M raise in the Silicon Valley is now turning into a \$200M fundraise."<sup>112</sup> The consequence is that valuations are inflated, and existing venture capitalists need to step up their investments or leave the market to the Vision Fund.

Saudi Arabia also illustrates another risk that should be seen in light of the trends discussed in this paper. Anti-corruption campaigns can be used to *rearrange the loyalty scheme* in a country. This is a particular issue for rentier states that largely depend on the top-down distribution of wealth among family clans. For companies that count these families as investors, shareholder structures can change overnight. For a long time, Saudi Prince Alwaleed bin Talal has been one of the most prolific investors, with stakes in companies like Twitter, Citigroup, Apple, or the Four Seasons hotel group. In 2017 he was part of a group of prominent Saudis detained in the Ritz Carlton hotel over accusations of money laundering and bribery.<sup>113</sup> The conditions of his release remain unclear, but a *Wall Street Journal* report suggests that he was "talking with the government about (...) accepting as payment for his release a large piece of his conglomerate."<sup>114</sup> If this is true, the settlements that are reportedly worth \$107bn<sup>115</sup> in total would most likely constitute one of the most significant investor regime changes in recent history.

Finally, there is a growing risk of a *balkanized global financial technology infrastructure* as a consequence of the willingness of different nations to break away from existing technical arrangements. For quite some time, the SWIFT<sup>116</sup> system has come under scrutiny, because it is essential to monitor financial flows. Transparency over financial flows

is key to enforcing sanctions. This is why pressure mounts, because excluding countries from SWIFT makes economic exchanges far more difficult. At the same time, countries want to decouple their financial system from SWIFT in order to evade foreign sanctions regimes. For years, China and Russia have been mulling over the idea of setting up an alternative payment system to serve this goal.<sup>117</sup> This idea is gaining steam in light of the latest U.S. sanctions against Iran. In particular, German Foreign Minister Heiko Maas recently revealed that the EU had been working on "proposals on how we can make payment channels and systems such as SWIFT more autonomous."<sup>118</sup> All of these ideas remain to materialize, but a financial technology infrastructure that operated on different standards would cease to provide the global economy with the seamless exchanges that the financial industry is used to.

## Construction and Infrastructure Development

Construction activities are an indicator of economic growth and dynamism. Forecasts assume that the global infrastructure investment need between 2017 and 2035 will account for close to US\$70trn, with 60% of the spending in emerging economies, particularly in Asia.<sup>119</sup> Given past developments, Chinese construction companies have come to play a major role on the international construction market. They lead international rankings by sales (2017: \$1,098b) and market capitalization (2017: €501bn, Figure 7). Taken together, the sales of Europe's three leading construction companies – Vinci, ACS Actividades de Construcción y

112 Ghorpade/Babu, "How Softbank's Vision Fund is disrupting the venture capital business."

113 "Alwaleed al Saud."

114 Stancati/Said/Baucon, "The Price of Freedom for Saudi Arabia's Richest Man: \$6 Billion."

115 "Detainees held at Saudi Arabia's Ritz-Carlton released or moved, 56 remain in custody: Attorney General."

116 The Society for Worldwide Interbank Financial Telecommunication provides a secure network for financial institutions to exchange information and transactions. See also: <https://www.swift.com/>.

117 Kashin, "Russia and China: the Rise of an Alliance," p. 6.

118 "SWIFT system to disconnect some Iranian banks this weekend"; Maas, "Speech at the opening of the 16th Ambassadors Conference at the Federal Foreign Office."

119 GPoC 2017, pp. 13-14.

Servicios, and Bouygues – account for around €108bn, which equals three-quarters of the €138bn sales volume of China State Construction Engineering Corporation, the world's largest construction company.<sup>120</sup>

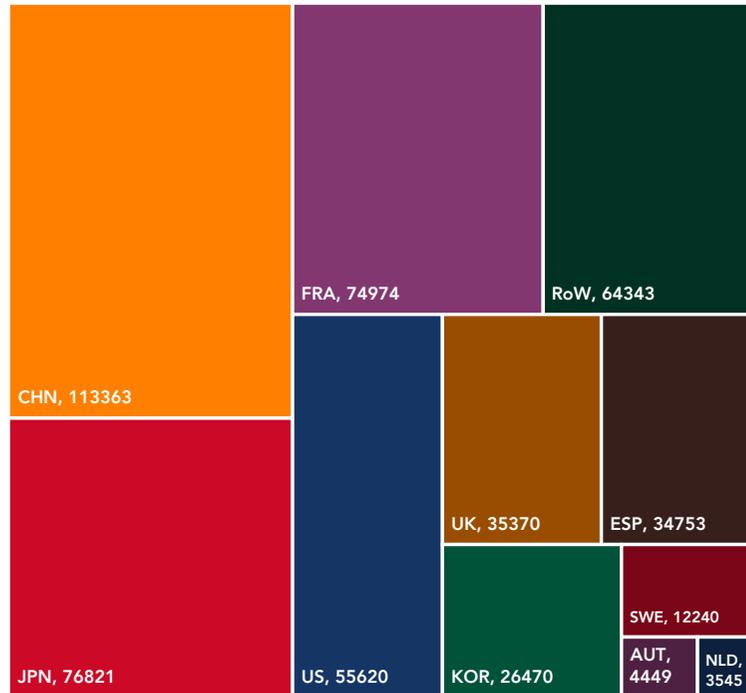


Figure 7: Market Capitalization of the Leading Construction Companies by Nations of Origin (2017, in €bn)  
Source: GPoC, p. 7.

The geo-economic momentum of construction<sup>121</sup> is best illustrated by the BRI initiative. China's dominance originates from the fact that the China Development Bank and the Export-Import Bank of China had "outstanding loans to foreign borrowers of nearly \$700bn" at the end of 2014.<sup>122</sup> So far, the banks have required projects to go to Chinese companies. As Figure 8 shows, *Chinese contractors overwhelmingly benefit from Chinese-funded BRI projects*, whereas local and foreign contractors are the main beneficiaries of projects that are being funded by multilateral development banks (MDB).

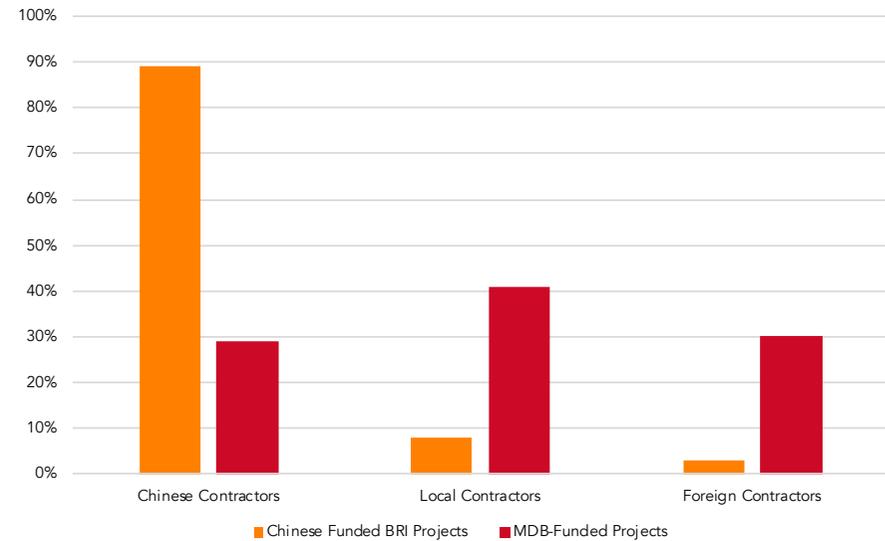


Figure 8: Nationality of Contractors in Chinese-Funded BRI Projects vs MDB-Funded Projects  
Source: China's Belt and Road at Five, p. 11.

120 GPoC 2017, pp. 6-7.

121 For an overview on how states use infrastructure development to advance strategic interest, see: Hillman, *Influence and Infrastructure*.

122 Kyngé/Hornby/Weinland, "China development banks expand links with foreign lenders."

However, there are doubts that China's dominance is going to continue. Even the BRI still very much depends on dollars, as contractors seem to prefer the U.S. currency over renminbi and because the Chinese currency is less fungible.<sup>123</sup> In addition, around 14% of the infrastructure projects that China has supported in the BRI countries have caused problems. As a result, China's development banks are increasingly reaching out to international financial partners to spread the risks and broaden the group of financial sponsors.<sup>124</sup>

## Defense

The defense industry is the quintessential geostrategic industry, as the purchase of defense systems entails long-term relations among supplying and receiving countries. From 1990 to 2017 global arms exports accounted for close to US\$708bn, according to data provided by the Stockholm International Peace Research Institute. As Figure 9 illustrates, the world's six leading defense exporters account for more than 80% of the export volume. The United States is the undisputed leader (38%), followed by Russia (21%).

However, the regional defense export pattern is a more relevant indicator when considering the political value of defense exports. Figure 10 shows the 15 most important recipients of the six leading defense exporters, thereby highlighting significant geostrategic differences. The U.S. portfolio is broadly distributed among Washington's major regions of strategic interest in Europe, the Greater Middle East, and the Asia Pacific region. Russia's defense exports mainly concentrate on India, China, and Algeria as the key export destinations. Finally, China is slowly ramping up defense exports. Unlike their competitors, Chinese defense companies do not depend on exports to survive because of the vast home market and strong business footprints in commercial

123 China's Belt and Road at Five, p. 11.

124 Kyngge/Hornby/Weinland, "China development banks expand links with foreign lenders."

markets.<sup>125</sup> Thus, Chinese defense exports primarily follow political interests.

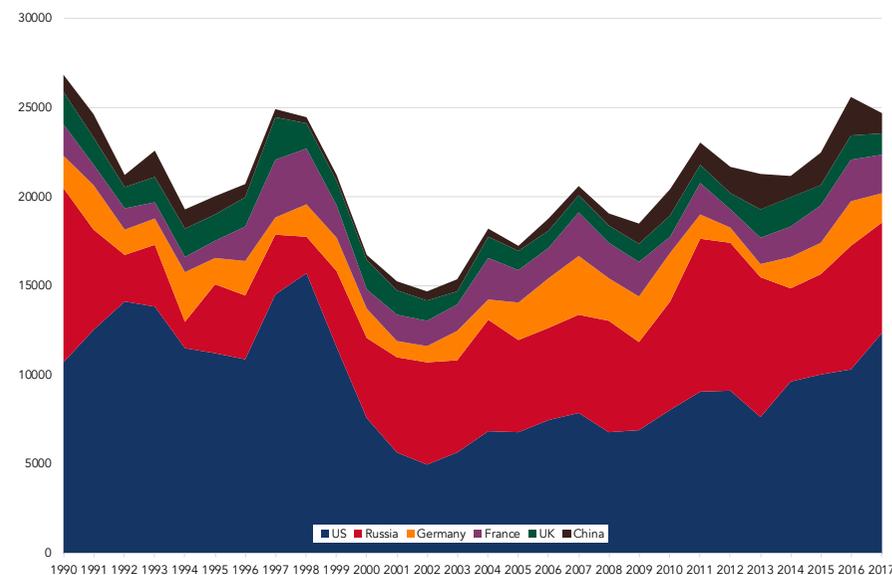


Figure 9: Total Defense Exports of the Top 6 Defense Exporters, 1990-2017 (in US\$bn)

Source: [http://armstrade.sipri.org/armstrade/html/export\\_toplist.php](http://armstrade.sipri.org/armstrade/html/export_toplist.php).

The defense industry faces three main geostrategic challenges. First of all, more and more *ambitious emerging nations are striving to establish local defense industries*. A growing will to break bonds with existing suppliers as well as the ambition to advance local industrial diversification are two prime motives that challenge the dominant position of traditional defense exporters. Once these nations have established national defense champions, they want them to export.

125 Barabanov/Kashin/Makienko, Shooting Star, p. 136.

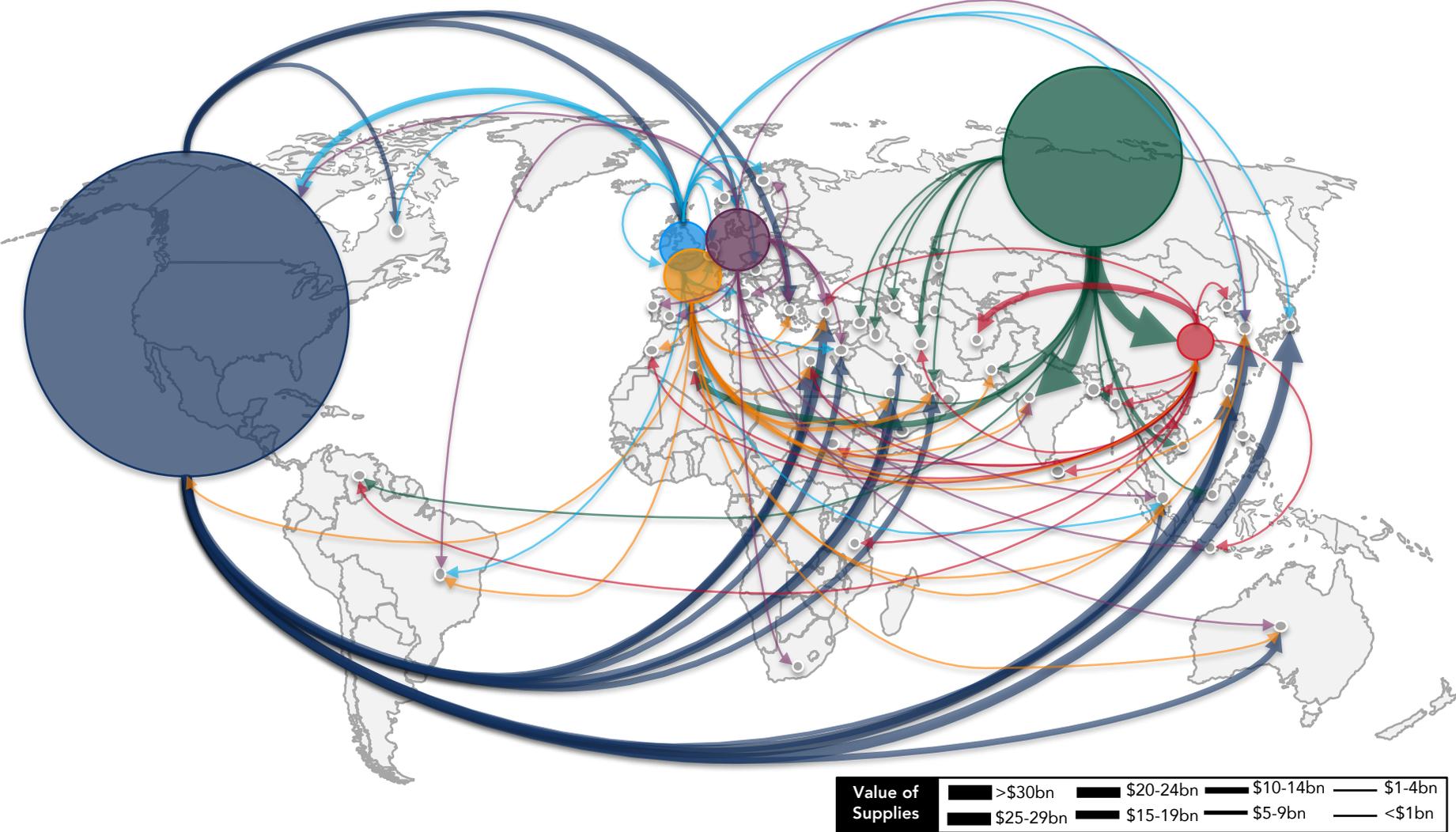


Figure 10: Top 6 Defense Exporters, 1990-2017  
 Source: Adapted from <http://armstrade.sipri.org/armstrade/page/values.php>.

*Rising defense exporters* like South Korea and Turkey constitute the second challenge. These nations have benefited from technology co-development programs with U.S. and European partners and use this experience to push their own products into overseas markets. In order to succeed at the export front, the governments in Ankara and Seoul go a long way to sweeten deals with their suppliers by providing significant political support in terms of export financing, preferential prices, and government-to-government facilitation.<sup>126</sup>

The third challenge stems from today's *technology development*. More and more technologies that are relevant for armed forces originate in the commercial sector. This has two consequences. First, given the growing digitization of the armed forces, nations with a sophisticated national ICT industry may benefit from spillovers into the defense domain, which enables them to leapfrog on the development of defense systems.<sup>127</sup> Second, the proper integration of commercial technology into the defense environment and the need to reach out to industrial partners that are not used to doing business with the defense establishment adds further complexity to defense-industrial relations. Although established and emerging defense exporters face the same difficulty, the challenge is bigger for the former, as they need to handle the transformation of the national defense industrial base while at the same time maintaining and expanding their lead over rising challengers in key overseas markets.<sup>128</sup> Furthermore, some of the leading commercial technology developers are wary of engaging with the defense establishment for moral reasons and fear of reputation damage.<sup>129</sup> This threatens to broaden the defense-industrial divide in developed nations.<sup>130</sup> In contrast, China is believed to have a strategic advantage on technology

pull through, as the country has been emphasizing military-civil fusion as a core organizational principle for years.<sup>131</sup>

## Digital Industries

Hardware and software producers as well as manufacturers of communications equipment have come to form the core of the digital backbone of today's economy. Embedded cyber-physical systems facilitate man-to-machine and machine-to-machine communications, which is at the heart of the Internet of Everything and promises even greater efficiency of industrial processes and convenience in serving customers. Shaping the design and the performance of these elements has a huge impact on the industry ecosystem that depends on them. Given the inherent vulnerability, national security is directly affected as well. This centrality explains why the respective manufacturers and their products and services have become so contested.

Ultimately, it is the integrity of these cyber-physical systems and thus the reliability of the manufacturers that is at the core of the rising technology power game. Three aspects are important. First, *vulnerabilities of hardware and software products* can be exploited to knock-off critical infrastructure such as power plants or water supply, monitor political dissidents, and steal confidential data to gain advantages over competitors. Cyber incidents have gained prominence over the past decade, as governments, non-state actors, and professional service companies have started to exploit these weaknesses to their benefit. The geostrategic relevance of this development is hard to underestimate, but the

126 Borchert, "South Korea's Defense Market," pp. 18-21; Borchert, "Rising Challengers," pp. 61-64.

127 Horowitz, "Information-Age Economics and the Future of the East Asian Security Environment," pp. 211-235.

128 Borchert/Thiele, "Rüstungsindustrie im Umbruch," pp. 370-371.

129 Fryer-Briggs, "Inside the Pentagon's plan to win over Silicon Valley's AI experts";

130 Zegart/Childs, "The divide between Silicon Valley and Washington is a national-security threat."

131 Hille/Waters, "Washington unnerved by China's military-civil fusion." However, technology is important but not the only source of military innovation and strategic advantages. Operational experience and the ability to adapt concepts of operations in a way that is commensurate to fully leverage technological progress are equally important.

blame game is of limited value, as actors from developed and emerging countries are engaged in these illicit activities. In the end, the question is whose arguments will prevail. But what is more critical to national security: products of Chinese or Russian origin that allegedly allow the respective governments to sneak on sensitive data, or the extraterritorial application of the U.S. Cloud Act that would enforce the need to share data with the United States irrespective of if the servers are located there or in third countries?

Second, hardware and software developments are closely intertwined with the *development of standards*. Nowhere is this more obvious than in the current race for standards for the upcoming 5G telecommunication technology. 5G is designed to enable large-scale machine-to-

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**As digital supply chains integrate partners in different countries, a U.S.-China sanctions and counter-sanctions regime has significant ramifications beyond the two prime contenders**

machine communications and provide high bandwidth at very low latency. According to Joy Dantong Ma, the genesis of preceding standard generation shows that the predominantly U.S. or European companies that had invested in developing the respective intellectual property played a key role in setting the standards. As a consequence, China's Huawei has spent more than US\$61bn "over the past decade to develop the technologies that have the potential to become global 5G telecom standards."<sup>132</sup> As a recent Eurasia Group report explains, 5G networks are mainly software-based, unlike preceding standards that were hardware-based. In order to manage the complexity of 5G networks, AI will be extensively used, which in turn has consequences for the microchips in use.<sup>133</sup> So far, microchip development has been dominated by manufacturers in

the United States, Japan, and South Korea. But China has been catching up quickly and now belongs to the leaders in the field, although its industrial leaders still depend on outside partners such as Taiwan's TSMC, which manufactured Huawei's 7nm chipset Kirin 980.<sup>134</sup> The United States and Europe have woken up to fight rivals from China at the standards front. In this battle, national security concerns are the ultimate instrument to undercut emerging competitors by limiting access to technology and markets through sanctions and equipment bans. But as digital supply chains involve development and production partners in many different countries, a U.S.-China sanctions and counter-sanctions regime in this industry has significant ramifications beyond the two prime contenders. As the striving for dominance on 5G has only begun, this prospect suggests stormy weather for all companies in the digital industries.

Finally, *doubts about the credibility of a supplier can be woven into narratives that are hard to beat*. The Snowden revelations were a blow to the U.S. digital industry and caused economic losses to U.S. companies, as customers moved cloud-based services out of U.S. territory and switched to competitors.<sup>135</sup> The most recent Facebook-Cambridge Analytica scandal on the misuse of personal data also affected Palantir, a U.S. data analytics company.<sup>136</sup> Critical press reports on Palantir's role emerged at the time the U.S. company was forcefully entering markets in Europe and the Greater Middle East – which begs the question if negative press is going to darken Palantir's prospects in these regions to the benefit of others. Interestingly, however, data protection does not rank at the top of consumer preferences in all markets. The outcry over the Facebook scandal was much more muted in Asia-Pacific nations.<sup>137</sup> Herein lies the geostrategic significance of what is and what is not palatable in the digital domain. Societies dominated by a more authoritarian political system will develop expectations that differ from

132 Ma, "From Windfalls to Pitfalls"

133 Triolo/Allison/Brown, *The Geopolitics of 5G*, pp. 7-8.

134 Howitz, "Why the semiconductor is suddenly at the heart of US-China tech tensions"; Knight, "China has never had a real chip industry."

135 Kehl et. al., *Surveillance Cots*, Pp. 8-13.

136 Kharpal, "Palantir worked with Cambridge Analytica on the Facebook data it acquired, whistleblower alleges."

137 Molavi, "Is Facebook fury a 'first world' issue?"

expectations held in democratic societies. This is going to affect the relevant standards and the products built thereon. And all of a sudden, diverging normative assumptions are underpinning digital products that meet on overseas markets. It remains to be seen whether consumers worldwide will take side with convenience at the price of personal freedom. But critical press reports about China's export of digital technologies to Venezuela and African nations suggesting that these technologies will facilitate local government surveillance and thus also likely political suppression point at the likely future narrative.<sup>138</sup>

## Extractive Industries and Mining

Geology largely determines where resources can be extracted, and geography plays a key role in determining the transport corridors from producers to consumers. That is why geopolitics has played and continues to play a key role for all extractive industries. This is particularly true for oil and gas, as discussed above with reference to downstream competition. The advent of renewable energies like solar power or wind power does not fundamentally alter the situation. Yes, renewable energies are important to diversify the national energy mix and to combat climate change, but simply replacing one source of energy with another does not yet solve protracted geopolitical issues such as regional instability. In some cases, renewable energy could even cause additional geostrategic strain. This became apparent in 2010 when China started to temporarily halt the export of rare earth minerals, for which the country is a leading producer. Although Beijing had to scrap export quota in 2015 after a ruling of the World Trade Organization, this incident had sent shockwaves across the renewable energy sector and other high-

tech industries, such as transportation and defense, that depend on these minerals.<sup>139</sup>

Oil and gas companies continue to remain central to the respective producing nations, as they are responsible for a large portion of *government revenues*. In this regard, Saudi Aramco plays in a league of its own, as plans for the now-deferred partial IPO of the company showed, which should have provided the government with significant funds to advance economic modernization and diversification.<sup>140</sup> The wish for *economic diversification* can also reinforce the importance of the oil and gas sector, as Sabic (Saudi Arabia) and Borealis (majority-owned by Mubadala and with a minority stake of Austria's OMV) illustrate. Both companies are set to expand their activities. Like ADNOC, the Emirates' leading energy company, Borealis is becoming a key instrument to *advance industrial and thus also political relationships*. Borealis is joining forces with ADNOC to invest in India, China, and other Asia-Pacific markets that are politically relevant for the UAE. In addition, ADNOC and Saudi Aramco have agreed to jointly develop a chemicals complex on India's West coast.<sup>141</sup> SABIC recently bought a 24.99% stake in Switzerland's Clariant.<sup>142</sup> Following the take-over of Syngenta by ChemChina and the entry of Arab Gulf investors in leading Swiss banks, this was another sign of the advance of state-owned companies in Switzerland's market economy.

With regard to this industry's *geostrategic and geo-economic vulnerability*, two recent developments are noteworthy. In March 2018, Saudi Arabia and SoftBank Group announced a 200 gigawatt solar-power project worth US\$200bn. Six months later the project idea was shelved but not abandoned.<sup>143</sup> Like in other sectors, the eye-catching investment volume raised concerns that it could *distort investments* and call into question the economic profitability of existing projects and divert

138 Gwagwa/Garbe, "Exporting repression?"; Berwick, "How ZTE helps Venezuela create China-style control."

139 Wiggin, "The truth behind China's rare earths embargo"; Miles/Hughes, "China loses trade dispute over rare earth exports"; Bradsher, "Amid tension, China blocks vital exports to Japan."

140 Gardner, "Saudi Aramco IPO collapse delivers a blow to the crown prince."

141 Khan, "Borealis eyes large-scale Asian joint investments with Adnoc."

142 Aiolfi, "Saudischer 'weisser Ritter' für Clariant," p. 23.

143 Jones/Said, "Saudi Arabia shelves work on SoftBank's \$200 billion solar project"

investment flows to other energy and technology sectors.<sup>144</sup> A different vulnerability has been highlighted by Rusal, the Russian aluminum producer. In April 2018, the U.S. Treasury adopted tough sanctions against Rusal and its owner Oleg Deripaska. These *sanctions* affected not only the company but also its supply chain partners. Among them were Airbus, BMW, Daimler, and Queensland Alumina of Australia (which has a 20% stake in Rusal). In fighting back against the U.S. Treasury, Rusal approached all of these companies as well as the respective nations' ambassadors in Washington, DC, with a request for support. This clearly underlines the toxic nature and likely side-effects of sanctions in a highly intertwined global economy.<sup>145</sup>

## Transport and Logistics

Back in 2014, AP Moller-Maersk, Mediterranean Shipping Company, and CMA CGM wanted to form the P3 Network. The aim was to pool 250 ships to cut costs on different shipping routes, among others routes from Asia to Europe. With 47% of the Asia-Europe container traffic under its control, *regulatory authorities in China feared market concentration and axed the plan*<sup>146</sup> – a stark illustration of the supply chain competition discussed above. There are other ways in which China's geostrategic ambitions, in particular the BRI, are influencing the transport and logistics sector.

In Greece, financial and economic problems following the crisis of 2007/08 created a welcome opportunity for China. Step by step, Cosco

increased its controlling stake in the port of Piraeus and modernized the infrastructure. Back in the days when the port was state-run, Piraeus did not rank among the global top 100 ports. But in 2014 it ranked 39th, with 3.5 million Twenty-foot Equivalent Units (TEU) handled; for 2020 the port aims at handling 6.2 million TEU. China's activities in Piraeus had an *impact on local logistics flows*. Hewlett-Packard reportedly relocated a distribution center from Rotterdam to Piraeus, and Chinese companies Huawei and ZTE opened regional distribution centers.<sup>147</sup>

A similar dynamic is at play in the *railway sector*. With 20,000km China's national high-speed train network is longer than that of all other nations combined. Trains are an important means of transportation for BRI. That is why China is investing in train connections and has reportedly spent US\$110bn for train connections at home and abroad between 2016 and 2020. In 2015, China merged the two national companies CSR and CNR to form CRRC, which is currently dominating the markets. In 2016, CRRC achieved sales worth around US\$36bn, which was more than sales of Siemens, Alstom, Bombardier, and Hitachi together. Thus, the envisaged *merger of the railway business of Siemens and Alstom*, which was announced in 2017, has been widely interpreted as a response to the rise of Chinese competitors.<sup>148</sup> Ironically, Siemens' agreement to share technologies for high-speed trains with China in return for access to its market in 2005 was instrumental in launching this development.<sup>149</sup>

144 Nereim/Cunningham, "Saudis, SoftBank plan world's largest solar project."

145 "Rusal tries to drag Paris, Berlin, Ottawa and other capitals into anti-OFAC crusade"; Fedorinova, "Deripaska's hard times help oligarch weather Trump sanctions."

146 Milne, "China blocks proposed three-way shipping alliance."

147 Borchert, "The Diversity Challenge," pp. 34-35. For a detailed assessment of China's commercial shipping ambitions, see also: O'Dea, "Ships of State?," pp. 56-94.

148 Feldges, "Ein neuer Koloss im Bahn-Markt," p. 28; Feldges, "Alle gegen den chinesischen Riesen," p. 25; Tabeta, "World's largest train maker." But Europe's competition authorities seem likely to block the merger. See: "The big merger that couldn't," pp. 56-57.

149 Peters, "The importance of China's high-speed tech transfer policy."



Figure 11: Terminals Operated by DP World

Source: Adapted from

<https://www.dpworld.com/en/what-we-do/our-locations>.

Apart from the dynamic caused by China, other players from emerging countries are of interest as well. DP World, a terminal port operator with headquarters in Dubai, is a case in point. The company operates close to 80 marine and inland terminals in 40 countries (Figure 11). In 2017 the company held a market share of 9.2% and ranked fifth after China Cosco Shipping, Hutchison Port Holdings (Hong Kong), APM Terminals (The Netherlands), and PSA International (Singapore). The company is well diversified across the globe and has a strong focus in emerging markets as well as in Europe.<sup>150</sup> What makes DP World interesting with regard to geostrategy is the fact that its business development closely correlates with the *growing foreign policy ambitions of the United Arab Emirates*. When UAE Crown Prince Mohammed bin Zayed was in Beijing in December 2015, he announced a US\$1.9bn investment of DP World in China, where the company operates three terminals.<sup>151</sup>

Similarly, following his visit to India in February 2016, DP World announced long-term plans to invest in the country. In 2017, DP World and the National Investment and Infrastructure Fund agreed to develop India's logistics sector.<sup>152</sup>

However, foreign policy ambitions and business can occasionally collide, as DP World's experience in Djibouti underlines. The Horn of Africa is of increasing importance to the Emirates because of its importance for shipping, the ongoing fight over Yemen, and the region's role in providing food security for the UAE. In mid-2018, Djibouti launched a new free trade zone in cooperation with China Merchants Group. Djibouti accuses DP World of underserving its port in favor of other regional ports, whereas DP World claims that the new free trade zone is violating its exclusive 30-year concession.<sup>153</sup> In addition to this commercial dispute, Djibouti is increasingly sought after as a naval base by China, France, and the United States, thus underlining the challenges that nations face upon entering the new geostrategic and geo-economic game.

150 "DP World Limited. Investor Presentation December 2018."

151 Ahmad, "DP World to invest \$1.9 billion in China."

152 "Dubai's DP World inks India deal, eyes \$1bn investments."

153 Pilling, "Djibouti row with DP World embodies Horn of Africa power struggle;" Pilling, "Djibouti ready to pay compensation to settle DP World dispute."

## Three Considerations for Investors

Investors will need to think carefully about the trends and changes described in this paper. Most importantly, they will need to critically review long-held assumptions about the underlying forces that shape economic globalization. With the need for more information about corporate geostrategic risk appetite, sanctions vulnerability, and growing investor risks, we see three major topics that deserve investors' increased attention.

### Geostrategic Risk Appetite and Risk Reporting

First of all, investors need to know more about the geostrategic and geo-economic risk appetite of the companies in which they invest. This requires companies to provide more information on how they are going to handle these types of risks. As Condoleezza Rice and Amy Zegart have argued, companies need to make sure that their risk appetite is "explicit, updated, widely known, and closely tied to the business strategy"; this requires companies to "look outside" for the risks and to "look inside" the company to develop the "core competencies and organizational culture" to handle the risks.<sup>154</sup> Investors can facilitate this task by requiring transparent and updated geostrategic and geo-economic risk reporting.

Readers might argue that this is already the case today, but our argument is somewhat different. Yes, companies report on geostrategic and geo-economic risk, but reporting seems to be 'stovepiped,' clearly separating economic, technological, regulatory, and political risks from

each other. Apple's 2017 10-K report is a case in point. Its products and services, the company writes,

compete in highly competitive global markets characterized by aggressive price competition and resulting downward pressure on gross margins, frequent introduction of new products, short product life cycles, evolving industry standards, continual improvement in product price/performance characteristics, rapid adoption of technological and product advancements by competitors and price sensitivity on the part of consumers.<sup>155</sup>

All of this is correct, but as this paper has demonstrated, geostrategy and geo-economics serve as catalysts for all of the drivers that shape Apple's competitive environment. Apple's 10-K report later refers to the business impact of political events, but the link between political risks and market opportunities seems weak.<sup>156</sup> This is where investors will want to have more clarity by requiring a *more systemic view on geostrategic and geo-economic opportunities and risks* and how they are going to influence *corporate strategies, business models, and implementation plans*.<sup>157</sup>

### Sanctions Vulnerability

Second, corporate sanctions vulnerability is increasing significantly. Here the dominant view is on the risk of countries being sanctioned and the impact on corporate activities. But this is no longer enough. Sanctions vulnerability entails two distinct new dimensions: one individual, one technological.

International sanctions regimes increasingly target individuals. On the one hand, individual leaders should be held accountable for non-compliant behavior. On the other hand, individuals are becoming targets because they play key roles in a nation's political system or in a

154 Rice/Zegart, Political Risks, pp. 128-129.

155 Apple 2017 Form 10-K, p. 8.

156 Ibid., p. 15. This is the author's interpretation of the Form 10-K report.

157 Dhawan/West, The CEO as Chief Geopolitical Officer, p. 11.

company. This mechanism has been at play since 2014, with Western sanctions against Russia. At a broader level, the same line of reasoning has been put up against Huawei since the early 2000s. Huawei founder and president Ren Zengfei is allegedly close to the People's Republic Liberation Army (PLA). His proximity to China's security apparatus and the risk of espionage on behalf of China<sup>158</sup> constitute a national security concerns in many Western countries and has been used by them to justify the exclusion of Huawei products from national critical telecommunications networks.<sup>159</sup>

It is not too difficult to assume that this line of reasoning could easily be turned against Western companies. Investors might want to reflect for a moment on the number of former government employees with a security, defense, foreign affairs, or intelligence background that have

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**All technologies deemed relevant to achieve strategic advantages could become sanctions targets**

been appointed as executives or board members at companies in which they have invested. Their key advantages – i.e., familiarity with government processes, involvement in key programs, access to other senior government leaders – could easily turn into a liability if other nations were to use counter-sanctions against Western companies for alleged government proximity of these executives, which could be interpreted as collusion. U.S. defense contractors, for example, hired

more than 600 former senior government officials as executives, directors, or lobbyists in 2016 and are thus vulnerable to this type of risk.<sup>160</sup> But the same also applies to U.S. financial services companies such as Morgan Stanley (one former intelligence officer and one former government official as board members), Black Rock (two former State Department senior officials as board members), Bank of America (five former senior government officials as board members), and Wells Fargo (one former two-star general as board member).<sup>161</sup> In sum, investors might want to obtain more clarity from companies regarding *board of directors sanctions vulnerability* and mitigation strategies.

The second sanctions vulnerability results from corporate technological excellence. This is a corollary of the toughening technology competition discussed throughout this paper. *All technologies that are deemed relevant to establish and maintain strategic advantages could become sanctions targets.* The problem is that there is no unifying understanding for a definition of what constitutes a strategic technology. If such a definition was available, it would greatly facilitate the discussion on the impact of foreign direct investments on national security in specific technology sectors. Thus, there is going to be a high degree of discretion in establishing the respective definitions. ICT and adjacent technologies such as chip manufacturing, machine learning, artificial intelligence, robotics, and autonomous systems certainly qualify, but so do bio- and nanotechnology, energy management, or advanced materials.<sup>162</sup>

158 Ren Zhengfei has always disputed this claim. See also: Yang/Lucas, "Reclusive Huawei founder: we don't spy for China."

159 One of the key sources that raised this concern was a 2005 RAND study on the modernization of China's defense industry. The study authors discuss the "digital triangle" consisting of close interaction among state research and development institutes, commercial IT companies and the military as a key element. The study also identifies Ren Zhengfei as a "former director of the PLA General Staff Department's Information Engineering Academy." See: Medeiros, *A New Direction for China's Defense Industry*, pp. 215-221.

160 Brass Parachutes, p. 10.

161 Information based on the respective companies' disclosure. See: <https://www.morganstanley.com/about-us-governance/board>;

<http://ir.blackrock.com/board-of-directors>; <http://investor.bankofamerica.com/phoenix.zhtml?c=71595&p=irol-govboard>; <https://www.wellsfargo.com/about/corporate/governance/>.

162 The most recent advance notice of the U.S. Bureau of Industry and Security on future export controls lists 14 technologies considered critical for U.S. national security: biotechnology; artificial intelligence; position, navigation, and timing; microprocessors; advanced computing; data analytics; quantum information and sensing; logistics; additive manufacturing; robotics; brain-computer interfaces; hypersonics; advanced materials; advanced surveillance technologies. See: "Review of Controls for Certain Emerging Technologies," pp. 58201-58202.

In dealing with the risk of technology sanctions against companies, investors will want to know *how corporate technology roadmaps are mitigating the sanctions risks*. To this purpose they should further their understanding of four intertwined aspects: First, they need to understand to what extent a technology is critical for other nations, in particular for ambitious status quo challengers. The more these depend on the respective technology, the higher the risk that sanctions could be adopted in order to establish and/or protect national champions that help reduce dependence on foreign technology suppliers. Second, investors need to understand if a company is the sole supplier of the respective technology or one among many. In the first case, the risk of becoming a sanctions target might be higher, as challengers want to offset the lead of the incumbent technology champion. Third, the distribution of domestic and foreign market shares matters, too. The smaller the domestic market share of a technology champion, the higher its dependence on exports, which could become a risk if the markets of status quo challengers rank high among the export destinations. Finally, extended supply chains that involve various suppliers operating in different countries could also increase risks. On the one hand, there is the risk of regulatory fragmentation that could add extra costs for doing business in specific countries. On the other hand, different governments might joint forces in closing the ranks to effectively sanction non-compliant actors. As a result, these countries could synchronize their activities, which could put simultaneous pressure on the supply chain in multiple countries, thus making it more difficult to evade the negative consequences of these sanctions.

### **Investor Risks**

Third and finally, there will be growing risks triggered by *the motives and the origin of investors*. Investments in strategic technologies will come under increased scrutiny, as the most recent updates of the

respective legal frameworks in the United States, France, Germany, and the European Union clearly illustrate. In addition, there is growing attention to the origin of an investor, as the public critique of Saudi Arabia in many Western nations following the Khashoggi affair has made clear. The public outrage had an immediate negative impact on the standing of PIF and the Vision Fund. All of a sudden, Silicon Valley was discussing the appropriateness of accepting funds from these organizations.<sup>163</sup> Investors thus need to assess to what extent investment partners with whom they want to team could be detrimental to their own investment activities. In turn, growing wariness with regard to investors of a certain type could also open up opportunities for other investors to step in. Creating strategic investment vehicles that provide governments with an option to keep national critical technologies under control could become an option worth considering.

163 Cuplan, "Here's How Saudi Cash Could Bring on The Global VC Crash."

## Conclusion

Flow control and grand systemic competition discussed in this paper are about to produce inherent instability for years to come. This stems from the fact that the key instruments used up to now to bind nations together – rules, institutions, technical standards, and economic ties – are being turned into instruments against each other. This offers the prospect of serious political and economic disruption. The current challenge differs from the Cold War competition because it is economically and technologically unrestricted. When the United States and the Soviet Union as well as their respective allies were engaged in the race for dominance, they were much less economically intertwined than the United States and China are today,<sup>164</sup> and most of the strategic technologies were of primary defense origin – with nuclear power as a main exception. This helped contain economic ripple effects of the technology race.<sup>165</sup> Today's strategic technologies, in contrast, are primarily of commercial origin. The logic of flow control produces a zero-sum outcome: One nation's access to technology effectively locks out another nation. This trend is reinforced by an increasingly aggressive national security approach to technology that discriminates competitors on the basis of their country of origin and presumed national security risks entailed with using their products.<sup>166</sup> This could likely further a "de-globalization of global technology chains" that could produce a bifurcated techno-economic ecosystem with limited interoperability.<sup>167</sup>

164 See also: Wyne, "Is this the beginning of a new Cold War?"

165 This is not to ignore the serious costs of the Cold War technology race that have been a force in bringing down the Soviet Union from an economic perspective.

This concern is all the more relevant, since the techno-economic competition is not only the result of a geo-economic juxtaposition of Washington and Beijing. Several other trends point in the same direction. Ambitious emerging nations strive for technology-driven strategic differentiation and economic diversification. This prompts them to favor import substitution and indigenization. This creates new competitors that will challenge incumbent suppliers for access to the respective home and overseas markets. Although this could be a force for good, the increasing propensity to take recourse to protectionist economic policies threatens to tilt the balance in favor of market distorting incentives that are driven by geo-economic and geostrategic interests. This could lead to the co-

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### **Today's competition for flow control differs from the Cold War as it is economically and technologically unrestricted**

cooning of strategic relations among like-minded nations to effectively shield themselves against outside interference. Ironically, the proliferation of digital technology can support this trend, as China's "great digital firewall" suggests.<sup>168</sup> In addition, ambitious political leaders from emerging nations use technology prowess as a source of domestic legitimization. Establishing high-performing national champions is meant to portray them as wise leaders that help their countries play on par with the peers from developed nations. However, this link can also backfire if the techno-nationalist agenda does not deliver, thereby opening up prospects for domestic political disruption.

Business leaders and investors active in this environment will need to rethink corporate strategies. The 1990s and early 2000s led to extended corporate supply chains. As discussed, these extended supply chains are under pressure in the age of flow control. One of the major

166 There is nothing wrong with national security concerns related to today's technologies. The problem, however, is that national security concerns can be easily instrumentalized to disguise protectionist motives.

167 Triolo/Allison/Brown, *The Geopolitics of 5G*, p. 18.

168 "The Great Firewall of China."

tasks for the corporate sector is to get the slack back into corporate supply chains, which implies additional investments in back-up capacities, alternative suppliers, alternative products, and different means and routes of transportation.

Second, technology fungibility is likely to be much more restricted in the future, as companies will be more reluctant to share technologies across borders for fear of nurturing aggressive competitors. Technological self-sufficiency, although very difficult to achieve, will be back on the corporate and political agenda. Agreeing on how to spend public money to develop strategically relevant technologies will not be easy, since most industrialized economies frown at the idea of a state-driven top-down techno-economic agenda. But the silver lining is that increased political attention to self-sufficiency could prompt new thinking on how to advance techno-economic eco-systems by stimulating cooperation among globally oriented industry leaders, strong small and medium-sized enterprises, and research institutes. This could strengthen home markets as a back-up to exports that become increasingly vulnerable.<sup>169</sup> In this regard, investors might see new opportunities in setting up specific funding vehicles that focus on long-term public value generation.

Finally, growing techno-nationalism is very likely to lead to tougher rules on immigration and talent attraction. So far, talent flow has been a key driver of technology collaboration. The United States and China will be among the key losers in this game because they both very much depend on talent flows.<sup>170</sup> In contrast, countries like Germany and Switzerland, which have developed renowned dual-track education systems, could benefit.

169 Tooze, *Crashed*, p. 16.

170 "Will stronger borders weaken innovation?," pp. 8-9.

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