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The European Way

How to advance Europe's strategic autonomy by pairing liquidity with data to make supply chains more transparent, resilient and sustainable

Have you ever heard of polypropylene? If not, you are in good company because until recently this raw material had not been a household name. However, due to the outbreak of the COVID-19 pandemic things changed almost instantly. Today, this polymer epitomizes the reality of extended supply chain networks, which cover the globe like a powerful protective layer. If things run smoothly, almost nobody notices their fine-grained complexity that has deepened mutual dependence across regions. But if things turn sour, the vulnerability stemming from dependence comes to the fore and quickly sends shock waves across the globe.

Polypropylene is essential for the production of protective masks. In principle, it is widely available worldwide. But protective masks require melt-blown polypropylene that is only produced by a handful of manufacturers.¹ This concentration turned out to be a bottleneck in the production of protective masks at the height of the COVID-19 pandemic. Supply delays were further aggravated by the fact that production capacities for protective masks were limited. Several countries have switched from existing production processes to delivering masks, but reorienting the respective manufacturing procedures

took time. In addition, governments around the globe have adopted a tsunami of export restrictions with regard to personal protective equipment in order to ensure national supply at the cost of international solidarity.

In a globalized world, consumers and politicians alike have come to expect instant availability of everything that is required. Supply security has been delegated to companies. How companies run their supply chains, what partners are involved and where companies produce what they are expected to deliver results from a complex optimization

of such diverse aspects, including economies of scale, cost advantages, risk mitigation and questions related to foreign market access and technology transfer. Occasionally, the economic dimension of supply security takes center stage, in particular when resource-producing nations decide to cut raw material exports or when resource cartels, such as OPEC, raise or cut the price of oil. Until very recently, however, the actual security aspects of supply security - and thus also its strategic importance for public order - has been mostly overlooked.



¹ The face mask global value chain in the COVID-19 outbreak: evidence and policy lessons (Paris: OECD, 2020), <http://www.oecd.org/coronavirus/policy-responses/covid-19-and-international-trade-issues-and-actions-494da2fa/>; Samantha Subramanian, "How the face mask became the world's most coveted commodity", The Guardian, 28 April 2020, <https://www.theguardian.com/world/2020/apr/28/face-masks-coveted-commodity-coronavirus-pandemic>.

Corporate supply chains are being politicized

COVID-19 has changed the political negligence of supply security overnight. All of a sudden, the inability to serve nations with critical goods, such as personal protective equipment, has triggered a strong political demand to shore up national production and reserve capacities and to develop more resilient global supply chains.² In most cases, this demand is a call to bring production back to industrial countries from emerging economies.³ However, the demand for more resilient supply chains hits a raw nerve: Precisely what benchmark is used to define supply chain resilience? What degree of self-sufficiency is adequate and how is self-sufficiency measured? What is the impact of varying industrial policy ambitions on a nation's future resource demand and how will this shape the design of future supply chains? What kind of supply dependencies are nations willing to accept? Moreover, who will bear the costs of redesigning supply chains in order to increase supply security and ensure that nations are better prepared?

The truth is that the complexity of supply chains is not well understood. The idea of reorganizing supply chains amid growing demands for national self-sufficiency presupposes transparency with regard to the partners involved in global supply chains as well as individual and collective contributions at each stage of developing, producing and marketing a product. However, this belief is false. In general, companies know their immediate upstream and downstream partners, and these partners are also familiar with their immediate interlocutors. Beyond these immediate relationships, however, darkness prevails. Full-scale transparency is difficult to produce, and companies need to invest a lot to do so. This already poses a problem today and explains why different initiatives aimed at strengthening corporate social responsibility by advancing supply chain transparency almost always fail.



² According to E. Brandon-Jones et. al., supply chain robustness refers to “the ability to maintain operations during a crisis” and supply chain resilience describes “the ability to return to normal operations over an acceptable period of time, post-disruption.” See: E. Brandon-Jones, B. Squire, C.W. Autry and K. J. Peterson, “A contingent resource-based perspective of supply chain resilience and robustness”, *Journal of Supply Chain Management*, 50:3 (March 2014), pp. 55-73, <https://onlinelibrary.wiley.com/doi/abs/10.1111/jscm.12050>.

³ Sam Fleming and Michael Peel, “EU industrial supply lines need strengthening, commissioner warns”, *Financial Times*, 5 May 2020, <https://www.ft.com/content/5e6e99c2-4faa-4e56-bcd2-88460c8dc41a>.



Understanding the complexity of supply chains

The view that companies at the upper echelon of supply chains have an extended screwdriver to adjust production, even at the lowest supply chain tiers, contrasts with the complexity of global supply chains. This complexity results from five closely interwoven aspects: geography, technology, financing, time and worldviews.

First of all, we need to be aware of the **geospatial dimension** of supply chains. Supply chains run through transport corridors across different regions that are more or less stable. Thus, supply chains are prone to nations' diverging geostrategic and geo-economic ambitions. Most industrialized nations adopt a functional attitude via supply chains and means of transportation. You simply need both in order to connect markets and transport goods from origin to destination. This, however, collides with the interests of powerful emerging economies that act increasingly assertive and strive to implement their own vision of how to achieve stability across the regions they consider relevant to connect their markets with export destinations. Until now, globalization has been all about the unrestricted flow of goods, services, capital and information as well as the free movement of people. These flows provide connectedness and ensure

prosperity. Therefore, those who have control over what is required to ensure the smooth running of these flows are in a position of power in the 21st century.⁴ This is the reason why access to supply chains, supply corridors and means of transportation is increasingly considered to be more than just a functional tool, but rather an instrument of political and economic power. It is this drive for combined political and economic power that shapes China's Belt and Road Initiative,⁵ the "Connecting Europe and Asia"⁶ strategy of the European Union (EU) as well as the most recent idea of the US government to establish an "Economic Prosperity Network"⁷ with like-minded partners. As a consequence, corporate supply chains form the center of gravity of geo-economic competition.

Technology constitutes the second core dimension of supply chains and is closely related to the geospatial dimension. Competition for commercial technologies that are meant to deliver strategic advantages shapes the relationship between the US, Europe, China, Russia and other countries. The challenge stems from a change in paradigm, which guides the approach of these countries to competition: cooperative technology development has been the key driver of globalization as we know it, but it is

increasingly pushed aside. This affects supply chains, as a more assertive zero-sum view is gaining the upper hand. An emerging black-and-white view portends that a nation with access to and power over key strategic technologies will not make concessions if this means losing the edge over strategic competitors. Digital technologies, which constitute the foundation of the 4th Industrial Revolution and are pivotal for supply chain concepts, such as Industry 4.0, are at the center of this unfolding logic. As a consequence, it is becoming increasingly difficult to gain access to the respective technologies, including artificial intelligence, robotics, high-power computing, financial technologies and quantum computing, since stricter dual-use export control regimes are being introduced in order to limit the availability of these technologies. This, however, threatens to turn digitalization from a key enabler of today's business models into a trap: if digital technologies are no longer available because partners developing them become subject to sanctions or if data that is required for collaborative production processes can no longer leave a country due to new cybersecurity regulations, digitalization will paralyze corporate supply chains.⁸

4 Heiko Borchert, Flow control rewrites globalization. Implications for business and investors (Dubai: HEDGE21/Alcazar Capital, 2019); Henry Farrell and Abraham L. Newman, "Weaponized interdependence: How global economic networks shape state coercion", *International Security* 44:1 (Summer 2019), pp. 42-79; Keith Johnson and Robbie Gramer, "The great decoupling", *Foreign Policy*, 14 May 2020, <https://foreignpolicy.com/2020/05/14/china-us-pandemic-economy-tensions-trump-coronavirus-covid-new-cold-war-economics-the-great-decoupling/>.

5 Nadège Rolland, China's Eurasian century? Political and strategic implications of the Belt and Road Initiative (Seattle/Washington, DC: The National Bureau of Asian Research, 2017), <https://www.nbr.org/publication/chinas-eurasian-century-political-and-strategic-implications-of-the-belt-and-road-initiative/>; China's Belt and Road at five. A progress report (New York: City GPS, 2018), <https://www.citivelocity.com/citiqps/chinas-belt-road-initiative/>; China's Belt and Road, *The Economist Special Report*, *The Economist*, 8 February 2020.

6 Connecting Europe and Asia: Building blocks for an EU strategy, JOIN(2018) 31 final, Brussels, 19 September 2018, https://eeas.europa.eu/headquarters/headquarters-homepage/50699/connecting-europe-asia-eu-strategy_en.

7 Humeyra Pamuk and Andrea Shalal, "Trump administration pushing to rip global supply chains from China: officials", *Reuters*, 4 May 2020, <https://www.reuters.com/article/us-health-coronavirus-usa-china/trump-administration-pushing-to-rip-global-supply-chains-from-china-officials-idUSKBN22GOBZ>

8 Simeon Gilding, "5G choices: a pivotal moment in world affairs", *The Strategist*, 29 January 2020, <https://www.aspistrategist.org.au/5g-choices-a-pivotal-moment-in-world-affairs/>; Paul Triolo, Kevin Allison und Clarise Brown, *The geopolitics of 5G* (New York: Eurasia Group, 2018); Marianne Schneider-Petsinger, Jue Wang, Yu Jie and James Crabtree, *US-China strategic competition. The quest for global technological leadership* (London: Chatham House, 2019).



This is where the **financial dimension** comes into play. The functional business logic of securing liquidity to supply chain partners is being increasingly politicized. COVID-19 has turned supply chain resilience into a primary national security concern. However, what is the situation regarding the financial solidarity of supply chain partners in times of crises? How can liquidity stabilize supply chains? In a world that delegated supply security to companies, these questions did not matter much to political decision-makers. However, today, answers need to be found amid a fiercely competitive geo-economic environment in which financial weakness constitutes a major strategic opportunity for those awash with liquidity. As a result, policymakers hoping to reorganize corporate supply chains will need to come to terms with the financial flow embedded in supply chains. This is the reason why the geo-economic competition for technology is so important: financial technologies are digital technologies. Thus, control over financial technologies means power and influence because financial technologies provide transparency on financial flows. It is for this reason that China and Russia are working together to develop their own financial technology stack and establish independent payment systems. By deviating from existing financial technology, which is primarily developed in the West, both nations strive for financial cocooning of economic relationships with their partners by redirecting financial flows into systems that are controlled by them, not by the

West.⁹ This creates a major new challenge for supply chain finance, which emerges from competitive ambitions and manifests itself in the intersection of the geospatial, technological and financial dimensions of supply chain management.

When dealing with these three dimensions, **time** is an essential factor, but inherent time lags are not well understood. Firstly, decision-makers must know how quickly they need to be informed about changes in the relevant supply chain environment that might prompt the need for action. Political and corporate decision-makers alike face the problem that insufficient data and faint understanding of acting upon early warning will lead to suboptimal decisions. Secondly, supply chains cannot be changed overnight. Every modification will require time to trickle down from the top to the bottom of widespread supply chains. Until supply chains have fully adapted to new requirements, they will operate under heightened instability because the different elements of the supply chain are no longer as synchronized as before. This can constitute a serious weakness impacting corporate and national preparedness. Thus, there is a growing need for a strategic-level public-private dialogue in order to improve the joint understanding of cause-effect relations along supply chains and the channels required to introduce change and ensure stability. Without such a dialogue, political and corporate decision-makers run the risk of decoupling their respective areas of influence, involving significant long-term risks to competitiveness and stability.

Finally, all of the above needs to be reflected in light of **individual worldviews** guiding decision-makers in the political and corporate sphere. Worldviews are normative constructs underpinning how people frame and interpret reality and how they think about the goals to be achieved and the means to be chosen.¹⁰ In light of the COVID-19 pandemic, existing demands requiring companies to respect human rights and support environmental protection will be supplemented by additional requests for supply chain resilience. Worldviews are essential in how to set up these requirements, but hardly anybody talks about the implicit assumptions underpinning these worldviews: decision-makers that adhere to a zero-sum logic will want to shape future supply chain requirements in a way that best serves their national interest. They might even be willing to fund the reorganization of supply chains in order to bring development and production capacities back home. In doing so, they will have a keen eye on how these actions might undermine the competitiveness of strategic competitors, as raising their cost is what helps bolster national advantages. By contrast, decision-makers focusing on a collaborative approach will want to advance supply chain resilience in a way that emphasizes cross-national links. They will take a more holistic approach with a view to strengthening the underlying forces of multinational business ecosystems.¹¹ So far, the jury is out on which worldview will dominate in the future, but the zero-sum fraction seems to be gaining the upper hand.

9 Alex Rolfe, "Russian national payment system MIR set sights on European expansion", Payments Industry Intelligence, 29 November 2019, <https://www.paymentscardsandmobile.com/russian-national-payment-system-mir-set-sights-on-european-expansion/>; "Russian and Chinese alternatives for SWIFT global banking network coming online", Russia Briefing, 17 June 2019, <https://www.russia-briefing.com/news/russian-chinese-alternatives-swift-global-banking-network-coming-online.html/>.

10 Christian Reus-Smit and Duncan Snidal, *The Oxford Handbook of International Relations* (Oxford: Oxford University Press, 2008); Beth A. Simmons, Walter Carlsnaes and Thomas Risse (eds.), *Handbook of International Relations* (London: Sage Publications, 2012).

11 Heiko Borchert, *Looking beyond the abyss. Eight scenarios on the post-Covid-19 business landscape* (Zolling/Freising: 21strategies, 2020).

What a solution could look like

Supply chains are vulnerable due to technical and environmental risks, man-made dangers and the consequences of political decisions. Anyone involved in decision-making with regard to supply chain (re)organization needs to understand that the current geo-economic competition is increasing the level of systemic instability. From a European perspective, the biggest risk stems from the fact that justified demands for supply chain resilience turn into scapegoats for a new wave of protectionism. This danger is already manifesting, as the Sino-American antagonism is intensifying. Voices arguing in favor of decoupling US and Chinese economies are becoming more influential. In the worst-case scenario, corporate supply chains linking both ecosystems would be cut off, which would involve significant consequences for the supply chain partners of both nations.¹²

In light of the COVID-19 pandemic, European stakeholders are warming up to the idea of improving collective supply

security. For example, the most recent plans of the European Commission to repair and prepare Europe for the next generation present “a new Strategic Investment Facility to support cross-border investments to help strengthen and build European strategic value chains.”¹³ This proposal pushes supply chain management right to the top of Europe’s strategic agenda; no EU member state will be able to avoid questions on how to contribute to this European endeavor and how to deal with supply chain management at national levels. Against this background, a smart European way to implement the Strategic Investment Facility should combine the provision of liquidity as the premier corporate incentive with informed political guidance on how to adjust supply chains to ensure that they can withstand intensifying geo-economic rivalry.

Supply chains mirror and are shaped by corporate strategies. The physical dimension of supply chains, which describes what is required to develop,

manufacture and market required products and services, is embedded in a triangle formed by contracts, payments (thus liquidity) and data. Liquidity is the glue that binds everything together. So far, however, there has been liquidity asymmetry on the market. Smaller supply chain partners lack broad access to liquidity on favorable terms, whereas big companies, the public sector, multinational organizations and investors have access to liquidity on beneficial terms.

Rebalancing this liquidity asymmetry is the key to advancing supply chain transparency, resilience and sustainability. Based on the weakest link in the supply chain, liquidity needs to be reorganized in a way which ensures that supply chain finance does not only cover the top tier of the supply chain, but functions smoothly across every supply chain level. This requires an incentive-based approach as outlined in Box 1. This approach uses the contract between supply chain partners as an umbrella and combines liquidity with the value of data. Liquidity flows among partners in return for the accomplishment of specific tasks and the exchange of comprehensive data sets. Thus, liquidity pairs with data in a hitherto underexploited way. This helps to get data out of existing data silos, thereby significantly increasing transparency. At present, there is no incentive to share data in view of advancing supply chain transparency. Instant access to liquidity on favorable terms, by contrast, provides the incentive to do so.



12 Charles W. Boustany and Aaron L. Friedberg, Partial disengagement. A new U.S. strategy for economic competition with China (Seattle/Washington, DC: The National Bureau of Asian Research, 2019), <https://www.nbr.org/publication/partial-disengagement-a-new-u-s-strategy-for-economic-competition-with-china/>; Steven Weber, Bloc by bloc. How to build a global enterprise for the new regional order (Cambridge: Harvard University Press, 2019); Ali Wyne, “How to think about potentially decoupling from China”, The Washington Quarterly 43:1 (Spring 2020), pp. 41-64.

13 Europe’s moment: repair and prepare for the next generation, COM(2020)456 final, Brussels, 27 May 2020, p. 13, <https://ec.europa.eu/info/sites/info/files/communication-europe-moment-repair-prepare-next-generation.pdf>.



How to use supply chain finance to advance supply chain resilience

A supply and service relationship gives rise to a payment obligation. This is executed by means of an old or, rather, a new instrument: the (electronic) bill of exchange. With the discontinuation of the central banks' discount rate, the bill of exchange has disappeared from everyday business life, but is now experiencing a "resurrection" as an electronic bill of exchange. In this specific case, it has a special design feature that allows it to "flow" through the supply chain. This means that the bill can be split up to ensure that each company involved receives its share of the proceeds. In doing so, the principal does not know how much the participants at the 2nd echelon of the supply chain will receive, but only that they are entitled to receive the amount due to them. The technical product for this is called FLOW-BILL (from Bill of Exchange). This technical solution also makes it possible for liquidity to reach all participants in the

supply chain directly, i.e., payment targets and thus the need for working capital can be eliminated or reduced.

To make this possible, a third level, that of data, is required. This means that data must "flow up" the supply chain in order to provide the appropriate proof. The data level can be used to provide further relevant information, i.e., data from the participants in the supply chain. It is thus possible to open the data silos and make them available. This creates a database whose location in the European Union should be (technically) managed by a European company. This could constitute a possible future backbone for the implementation of the European Union's data strategy.¹⁴ If it is not possible to make data a key subject for the transparency of supply chains in the European Union, it will certainly be set up outside of Europe.

Data has value in this concept. For example, it is either the contingent consideration for cheap liquidity or it has an immediate value because it can

be used for supply chain transparency or to demonstrate sustainability criteria. The existing contractual relationship between the parties involved also determines the value of data. A release of the data beyond this is possible at any time, even beyond the immediate contractual partner, but under the condition that the release is granted and remunerated accordingly.

The technical solution described already exists (in the public sector with a slightly different objective). In addition, there are platforms that already have sub-elements that are relevant in a corresponding open ecosystem, which reacts flexibly to environmental changes. These include Peppol and XRechnung, among others. To think only in terms of data on a platform that is to be newly created is therefore a dead end. Rather, it is a matter of advancing the concept of an open ecosystem that combines different elements and, in contrast to block-chain solutions, is sector-agnostically scalable without limits.

¹⁴ A European strategy for data, COM(2020)66 final, Brussels, 19 February 2020, https://ec.europa.eu/info/sites/info/files/communication-european-strategy-data-19feb2020_en.pdf.

This logic will significantly expand the political leeway at European and national levels. Nationally, governments and companies will be able to use this new approach to instantly distribute liquidity among all stakeholders, for example, in times of crisis like the COVID-19 pandemic. Providing access to liquidity on favorable terms will be contingent on fulfilling specific requirements. These requirements can include specific demands for supply chain resilience. By providing data in return for liquidity, companies advance supply chain transparency according to the terms and conditions set by governments. This empowers all supply chain partners to verify compliance with the respective requirements and ensures the appropriate use of liquidity. By implementing this approach, Europe will be able to make its supply chains more future-proof amid upcoming geo-economic challenges.

Ensuring that nations are well prepared also matters for Europe's international role. As corporate supply chains are at the center of today's geo-economic competition, Europe will need to protect the essential corporate lifelines connecting it with strategic partners. A supply chain finance approach that bundles liquidity with data must be interpreted as a new instrument in Europe's economic security toolbox. This approach leverages Europe's top financial rating and turns it into powerful means of cooperation by issuing liquidity to strategic partners at rates hard to match by others. This will provide Europe with a strategic lever to stabilize countries and regions that are important for Europe's security and



prosperity. The proposed supply chain finance solution also blends nicely with Europe's connectedness strategy and empowers Europe to use infrastructure development projects to tie third countries into Europe's political-economic ecosystem. Sharing liquidity in return for data will also provide most useful in the fields of security and defense, where joint technology development programs always run the risk of illicit leakages of technology and expertise. In this case, non-compliance would instantly show up in the data stream, thereby triggering an immediate halt to liquidity transfer. The same mechanism would also provide a powerful controlling instrument to advance important development goals as set out in the United Nations Agenda 2030¹⁵ and within Europe's humanitarian aid programs.

COVID-19 and brewing geo-economic antagonisms between different countries and regions darken the outlook for Europe. Europe wants to strengthen its "strategic

autonomy while preserving the benefits of an open economy."¹⁶ In this regard, working with partners is key. However, today's predominant economic model has not been built to withstand grand strategic decoupling. Even adjusting global supply chains for the benefit of more regional or national supply security will prove difficult amid the increasing efforts to achieve flow control as a strategic currency. In this context, Europe could strike a balance by interpreting corporate supply chains as the ultimate instrument to combine liquidity and data with informed political guidance on supply chain design grounded in Europe's liberal and rules-based worldview. Using market-based incentives alongside a new liquidity and data-based approach to supply chain management would turn Europe into a stabilizing force, which is now urgently required.

¹⁵ "The sustainable development agenda," United Nations, undated, <https://www.un.org/sustainabledevelopment/development-agenda/>

¹⁶ Europe's moment: repair and prepare for the next generation, p. 2.

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