Finance in the age of geoeconomics: Intersections of finance, production, and digital technology

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1. Preamble

In late 2023, the inaugural editorial of *Finance and Space* (Wójcik et al., 2023) made a plea for a revolution in finance based on the evolution of knowledge of its inner workings and spatial organization. A key point made was the pressing need to understand the geographical and temporal underpinnings of the system called finance. At this first anniversary milestone of the journal, we reflect on the steps taken by the *Finance and Space* community in progressing knowledge that critically analyses the current global conjuncture. As we reflect on the inaugural volume, one theme was starting to crystallize quite clearly: the rising geopolitical and geoeconomic overtones in much of today's debates on global finance. The rise to prominence of these themes suggests that taken for granted truths about how the world works are questioned by global economic, political, and financial instability and change.

Events during the first year of *Finance and Space* indeed showcased how finance is embroiled in contemporary geopolitics and geoeconomics. We saw the ongoing use of finance as the weapon of choice against Russia (Clark, 2022), with Belgian-based organizations like Euroclear and SWIFT using American intelligence to freeze Russian assets while many 'global' banks are leaving the warmongering state. We also observed how finance is implicated in more subtle forms of power play in the realm of geoeconomics, where leading states like the US and China are seeking to control finance, production, and digital technology. With Trump securing a second term in the US presidential election, it seems certain that the further weaponization of these three realms will intensify. If anything, it seems that the new regime will want to further American digital technology hegemony considering the close ties between Trump and Big Tech CEO's, with less strict anti-trust enforcement and a more lenient regulation of Artificial Intelligence (AI) than is currently the case (Financial Times, 2024).

Earlier this year, the US chip company Nvidia surpassed Big Tech firms in market capitalization and was, for a moment, the most financially valuable company in the world at ca. 3.3 trillion US dollars. Why would this anecdotal fact be of interest to those studying finance? The reason lies in the rising use of AI in finance (Samers and He, 2024). Generative AI enabled by Nvidia's chips needs digital platforms running in the cloud and anchored in a network of data centres. This implies that finance is becoming ever more infrastructurally dependent on hyperscalers like Google Cloud, Amazon Web Services, Microsoft Azure, or its Chinese counterparts (Bassens et al., 2024). As it turns out companies like Nvidia are key chip suppliers of said Big Tech firms. The surge in demand has been mirrored in the stellar rise of Nvidia's market capitalization reconnecting the web back to finance including equity and debt underwriters.

Importantly, intersecting spaces of finance, production and technology are set against a wider geoeconomic canvas. The vast share of chip production—including those of the 'American' Nvidia—is done by TSMC, which is based not in the US but in Taiwan. The latter fact heightens the geoeconomic importance of Taiwan and makes its sovereignty and independence a key objective for the US in the face of long-standing territorial claims by China. In the broader context of data centres and energy demands, increasing use of AI and digital platforms accelerates pressure for new energy technologies and the extension of mining and other extractive economies to provide the critical minerals for new carbon economies (Kalantzakos, 2020; Kuzemko et al., 2024). While finance also clearly plays a vital role in funding the energy transition, it has also become a large consumer of energy through its reliance on the cloud.

Taken together, what we hence observe is a growing synchronization of interdependencies between global finance, digital technology, and production spaces amid weaponized interdependence between the world's leading economies. In this editorial we therefore foreground how the *Finance and Space* community can seek to build a common agenda around the geoeconomic and geopolitical dimensions of finance by mobilizing our collective interdisciplinary expertise. Section 1 sketches the contours of the current conjuncture against a discussion of more secular trends in geoeconomic power. Section 2 presents an encompassing framework to analyze how the worlds of finance, production and digital technology intersect. Here we draw on the novel concept of Global Digital Technology Networks (GDTNs) (Bassens et al., 2024), next to existing frameworks of Global Financial Networks (GFNs) (Coe et al., 2014; Haberly & Wójcik, 2022) and Global Production Networks (GPNs) (Coe and Yeung, 2015). Section 3 pinpoints emerging trends at the intersections of these frameworks to capture interrelated trends in 'core regions' of the global economy, namely China, Europe, and the US, with ramifications for the world at large.

2. Contours of a new conjuncture

The current conjuncture is marked by growing awareness that the old world shaped by unfettered globalization is no more. As geographers we have never taken globalization as a mere qualifier for universalization, but as a term that encapsulates the uneven and unequal integration of places, regions, and states in the capitalist world economy. During much of the post-Second World War era, this world was centred on US economic, political, and military hegemony. The 2008 global financial crisis, which was very much a North-Atlantic financial crisis (Jessop, 2015), may have signalled the 'autumn' for the old hegemon in its long twentieth century (Arrighi, 1994) to be matched by the rise of emerging, and by now established, global financial powers like China.

Others would disagree. Rather than the undisputed rise of a new hegemon, political scientists Farrell and Newman (2019) observe the growing economic *interdependence* between global powers, which can be 'weaponized' in their struggle for geoeconomic hegemony. Weaponized interdependence is the US response to China's growing financial importance and a way to retain and grow its sphere of influence (see also Petry, 2024). As such, the new conjuncture is not about deglobalization but global economic integration along new principles, interest, and terms, and seeking ways to extend geoeconomic power (cf. Mallin and Sidaway, 2023). Commentators in this journal (Alami et al., 2024) have argued that we need to understand the current conjuncture through the lens of resurgent state capitalism to acknowledge the renewed role of states in the current phase of global capitalism.

The above gives way to an emerging agenda that seeks to distil how finance is anchored in, supported by, and in turn influencing the global system of states competing for economic and political power. That question is an old one since finance has played a role in supporting sovereigns in their geopolitical and geoeconomic endeavours for centuries (Arrighi, 1994; Braudel, 1982). But there are also clear differences. The reach and size of the financial system is unprecedented making it hard to pinpoint an 'outside' to global finance (even though its power should not be totalized, cf. Mizes et al., 2024), the speed of communication within that system is so fast as to be almost invisible (as evidenced by nanotrading algo funds), and the system is also increasingly 'virtualized' with electronic trading in financial markets commencing in the 1980s, followed by digitization and platformization of financial institutions in the post-crisis period.

Finance is by now much more than the 'high finance' of kings and queens. It is deeply embedded in everyday life through our handheld devices and—as the rich literature on financialization testifies—shapes how people see and assess the world. The rise of finance as a global digital space connects practices anchored in networks of financial and offshore centres directly to our daily lives. Finance and business services communities with their collective knowledges and cultures have the power to shape the financial choices of citizens and firms, and the material

proprietary (communal) information and communication infrastructures wielded by finance (e.g., financial markets or payment systems) has augmented finance's own 'sovereign' properties.

But finance—as an increasingly 'sovereign' business in writing, trading, and redeeming IOUs (Mehrling, 2017)— remains fundamentally coded in law and regulation (Pistor, 2019) and backed by sovereign state power and its ultimate control over the supply of money. Discussions about resurgent state capitalism highlight that the pendulum may swing between more direct and indirect ways of granting corporate sovereignty (Barkan, 2013). In that sense, we may see more corporate freedom in the US than in coordinated market economies (e.g. EU) or state-directed economies (e.g. China). But, in the current conjuncture, there is a notable tendency for states to take more direct control over finance (Dixon, 2024; Nölke, 2024; Whiteside, 2024), and more fundamentally, the very notion of money itself through the development of central bank digital currencies (Chia & Helleiner, 2024).

Alongside the ongoing reliance on sovereign state backing, finance as a system is becoming ever more dependent on other systems with a global reach. The platformization of finance has made it even more reliant on the outlay of global digital technology infrastructure. As such, the maintenance of finance's sovereignty also loops back to the material underpinnings of global production. The contours of these entanglements are becoming visible, but we need much more systematic analysis of how the interdependencies between global finance, production, *and* digital technology networks play out in the age of infrastructural geopolitics (De Goede and Westermeier, 2022).

3. Intersections of Global Finance, Production, and Digital Technology

There are useful analytical concepts developed over the past two decades to aid us in understanding the current conjuncture. Figure 1, which we borrow from Bassens et al. (2024), offers a schematic overview of how to analyse the intersections of spaces of global finance, production and digital technology. The figure is the result of an attempt to complement existing frameworks of GFNs and GPNs with the notion of GDTNs.

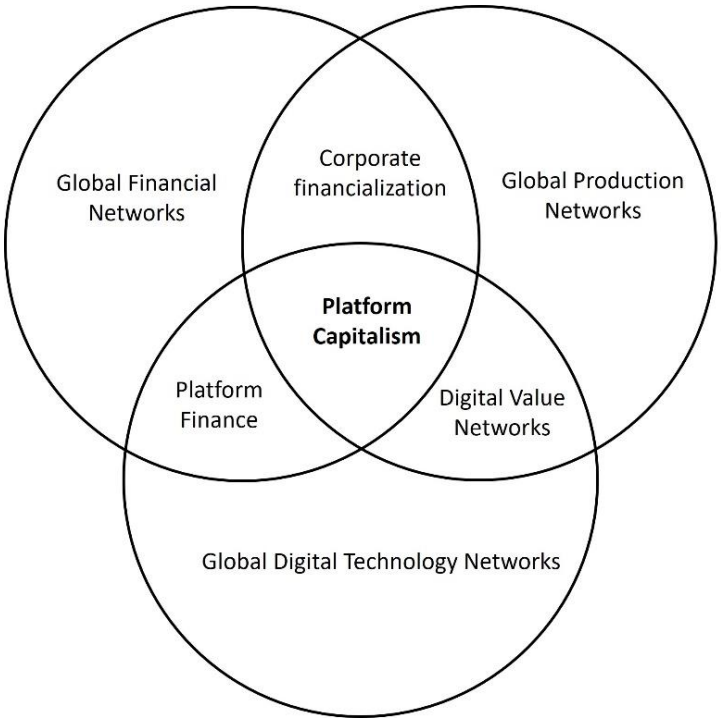

Figure 1. Intersections of global production, financial, and digital technology networks. (Reproduced from Bassens et al. (2024) with permission of Taylor and Francis)

As the figure shows, the assertion is that global platform capitalism is a defining characteristic of the current conjuncture, denoting the growing reliance on online and digital platforms in the coordination of global capitalism (Srnicek, 2016; Van Dijck et al., 2018). The rise of platform capitalism coincides with the emergence of a new fraction of capital embodied by large, globally operating technology firms with either American or Chinese origins. Lehdonvirta (2022) writes about the emergence of cloud empires showing how big tech firms have gained autocratic power in digital spaces. The platform has thereby become a key technology is extracting value from the wider economy and society, through the commodification and assetization of data (Birch et al., 2021). While platform companies were initially operating in the hotel business, taxi services, or online shopping, platformization has reshaped labour markets more generally as the concept of Digital Value Networks is starting to uncover (Howson et al., 2022). But platformization is also the name of the game in finance, with financial institutions digitizing and becoming ever-more data centered (Hendrikse et al., 2018; Langley and Leyshon, 2021). As a result, the fields of production and finance are becoming increasingly reliant on digital technology owned and operated by Big Tech firms. This dependence is both about the platform technologies themselves, but also about the underlying infrastructural layer of data centres, fibre-optic cables, internet exchange points, etc. (Amoore, 2018).

Existing frameworks have considerable power in analysing the spatial structure underpinning the production and coordination of financial markets (GFN) and the global division of labour underpinning the production of commodities (GPN). Both offer empirical inroads into understanding the geographical transfer of value that produce uneven development at the macro level. While GFN scholars have paid increasing attention to the rise of FinTech (Lai and Samers, 2021), the underlying layer anchored around Big Tech infrastructure and technology has received less attention. While the literature on Digital Value Networks has focused on the role of platforms in organizing global labour markets, the ultimate reliance on said global digital technology networks still remain under the radar. As Bassens et al. (2024) have argued, with the maturation of platform capitalism comes the need to acknowledge the autonomous role of these GDTNs from which the intersections with the world of finance and production can be studied.

The framework identifies three interdependencies. First, and most directly obvious for the *Finance and Space* community, there is the ***mutual reliance of finance and technology***. This means studying the dependence of financial institutions on the infrastructure of Big Tech much more closely. But it also means understanding the continued reliance of large technology firms on financial intermediaries. Issues of financial stability, competition, cybersecurity, and data privacy are prominent concerns with geoeconomic and geopolitical overtones demanding attention (Bassens et al., 2022; James and Quaglia, 2024). Which cloud providers do banks use? What happens with financial data? Where is it stored? What is the role of data centres in future financial centre trajectories? What are the energy and environmental implications of growing data storage and processing needs, especially with increasing use of AI in both back-office and customer-facing applications? On the other hand, how do investment banks remain crucial gatekeepers of financial market as they underwrite Big Tech stock? And how do business service firms continue to optimize corporate structures so as to maximize profit offshoring for Big Tech? How are Big Tech firms financialized? We wonder about how the growing intersections of finance and digital technology may be generating new networked hierarchies between tech valleys and financial centres.

Second, we need to understand the ***altering dynamics at the intersections of finance and production***. Corporate financialization is an ongoing process, driven by competition in the realm of production and financial market expectations; the process is also accelerated by rapid developments in digital technology. The rise of platforms generates new ways to extract value. The digitization of organization and rise of generative AI may overhaul organizations and set new market expectations about the desired return of investment. At the same time, finance is

increasingly drawn into the materialities of production, particularly for the hardware and energy systems that allow its platforms to run. As exemplified with the Nvidia case, there are new unexpected connections at this interface. But there are also questions regarding how future finance may gravely increase its carbon footprint. We wonder about the material hinterworlds of financial centres while we continue to see their role as obligatory passage points amid platform capitalism.

Third, we need to explore the ***intersections of digital technology spaces and production***. Some of the key trends were already mentioned above. One process to study is how the logic of platformization enters the production process and the coordination of labour. How do payment platforms enable the rise of online work? How does digitization drive 'servitization' in production, which drives further outsourcing and offshoring to remain competitive? How do platforms allow the reorganization of corporate control in global production in the face of shareholder value expectations, but also mounting geopolitical volatility? But it is also about understanding the intersection in the other direction: what is the reliance of Big Tech (and its clients) on the hardware, resources, and energy needed to run its infrastructure? We are interested in how platformization produces new patterns of exploitation and value transfer at a global scale, yet we also wonder how Big Tech and its clients are ultimately anchoring human labour behind the production of hardware, the extraction of resources, etc.

As should be clear, these dynamics are far from placeless. We may look at Figure 1 again and think about where to place our village, city, region, country, or macro-region in the scheme. If we see the world as a three-dimensional space each with its own spatial division of labour (Massey, 1984) any place would be more or less central in each sphere. Where does the apex of corporate power lie amid platform capitalism? Until 10-15 years ago many would probably have argued that it would lie somewhere in New York, London, or somewhere across these two (Wójcik, 2013). Perhaps others would have already made a plea to think more broadly and include Tokyo, Hong Kong, Singapore, and Beijing to acknowledge rising geoeconomic importance of cities and financial centres in the East (Derudder et al., 2010; Lai et al., 2020). But are we now in a position to acknowledge the relational power of Silicon Valley or Seattle? What status should we grant Hsinchu, Taiwan, where TSCM is located? And what about Ashburn, Virginia where the largest agglomeration of cloud services managed by hyperscalers is located?

The answer would probably be that it depends on your perspective or starting point. Currently there is no single place combining hegemony in all three fields; this implies that centrality in financial networks is no guarantee for command and control over digital technology despite efforts to grow fintech ecosystems in financial centres. It is also no guarantee to lead in production even though investment into production will one way or the other be channelled through financial centres and its intermediaries. The geoeconomic game then becomes clear: what core states like the US and China (and from a much more peripheral position also the EU) are intending to do is to defend their geoeconomic interests and centrality in each of the three spheres in their search for financial, resource, and technological sovereignty. For states, growing geoeconomic control is about owning or controlling (directly or indirectly) the 'chokepoints' (Farrell and Newman, 2023) in GFNs, GPNs, or GDTNs, or reducing dependence on these in case of foreign ownership.

4. Views from Asia, Europe, and the United States

How contemporary geo-economics of finance play out depends on where one stands. In this section we start from our own positionalities as researchers based in and researching various core regions of the global economy. We are aware of the narrow geographical scope of our account, and we have no intention to universalize these processes. Where possible we do point to emerging connections between these core regions and places beyond our own geographical regions of expertise. If anything, this account is also an invitation to collectively start filling the

voids with views from beyond this shortlist. But at the same time, understanding relational processes between core regions may be a good starting point to start unpacking the current conjuncture.

4.1. Asia

Over the past four decades, China has come to occupy a unique and important position within global production, financial, and digital technology networks, while the intersections between these three global networks have very much shaped the status of China as it is now. Geopolitical tensions between China and the US have profound influences on the evolution of, and the roles of China within, these global networks.

It is well documented that the huge influx of FDI and rapid growth of export trade have made China the world factory since the adoption of open policy in the late 1970s. China's manufacturers have captured more value via continuous upgrading within GPNs. Interestingly, it is only recently that the crucial role of global financing has been recognized in the development of Chinese manufacturers. Constituting global capital and knowledge pipelines, overseas listings have brought huge benefits to Chinese firms and regional economies, through the strengthening of production capacity, corporate governance, and local production networks (Pan et al., 2020). Global financing is also crucial to understanding the rise of China's Big Tech companies, as almost all these companies (such as Baidu, Tencent, and Alibaba) are listed on overseas stock exchanges, notably on Nasdaq, the New York Stock Exchange (NYSE), and the Hong Kong Stock Exchange (HKEX) (Pan and Brooker, 2014). Most of these giant tech companies were founded after 2000 backed by global venture capital and successfully listed on overseas stock exchanges. These companies are at the core of the platform economy in China, and more importantly, remain mostly independent from the GDTNs controlled by the US companies.

In the current conjuncture, however, we see an attempt to decouple networks of production, finance and digital technology between China and US. The rise of trade protectionism has been reshaping GPNs: the shortage of high-end components and equipment, such as chips, has severe impacts on the competitiveness of Chinese manufactures, while it may also spur the efforts of Chinese R&D inputs given the huge demand. Regarding finance, many US-listed Chinese firms were threatened with delisting from the NYSE and Nasdaq, which has resulted in the return of Chinese firms from the US to HKEX (Pan et al. 2024). Moreover, although China has successfully developed independent platform economies, there are disputes between China and the US with regards to data security and cyber sovereignty, as many US-listed Chinese platform firms are supposed to be subject to the regulatory requirements of the US authorities. For instance, Didi, a Chinese app-based transportation service tech company went public on the NYSE in 2021, but was forced to delist from stock exchange, as the Chinese government was unhappy with the level of disclosure Didi had to make to the US regulators (Ibid., 2024). Thus, cyberspace disputes will be another key issue with the evolution of GDTNs.

From a more infrastructural perspective, the case of data centres growth in Southeast Asia offers other insights into the intersections of finance, production and digital technology networks in economic and environmental changes. Data centres are vital in enabling Singapore's role as the internet and connectivity hub of Southeast Asia, as well as supporting the rapidly growing FinTech sector that complements its international financial centre status (Lai, 2018). In 2019, the Singapore government implemented a moratorium that banned the building of new data centres, citing energy consumption and carbon emissions concerns. The moratorium was lifted in 2022 but with new building and energy requirements and limits put in place to manage the environmental impacts of the sector. As the result, data centre operators and clients are increasingly adopting a 'Singapore-Plus' strategy in extending into neighbouring Indonesia and Malaysia to address data demands in Singapore and Southeast Asia (Chow et al., 2023; DC Byte and Knight Frank, 2023). Both US (Amazon, Meta) and China (Alibaba, Tencent) Big Tech firms are

active in this growing data centres landscape. This could result in a regional hierarchy of data centre services. ‘High quality’ data and workloads that contain sensitive information and requiring low-latency (e.g. financial trading, health data) will remain in Singapore as these end users are willing to pay a premium for network-rich workloads. On the other hand, ‘lower quality’ data mainly used for storage and processing (e.g. media streaming, social media) could move into neighbouring countries where land, energy and labour costs are lower.

The expansion into Johor in Southern Malaysia and northern islands of Indonesia present growth opportunities for those regions, especially in terms of diversifying their economic reliance on palm oil plantations and property-led growth (Ruehl, 2024). However, there are concerns about whether the option of building in other countries with less stringent environmental standards could be jeopardising the sustainable transition of the data centres sector more broadly (Chow et al., 2024). Financial institutions (e.g. investment banks, private equity) play a particularly important role here. Capital is a key leverage as they are investors in funds containing data centres and in financing data centre projects. As clients of data centre services, financial institutions could also do more in holding their service providers to account for their energy and environmental impacts (which is increasingly important for meeting Scope 3 emission reporting). As the finance sector, and society more broadly, increasingly relies on digital technologies, the climate risks and impacts associated with data centre infrastructure significantly affect the carbon footprint and climate resilience of the communities or regions they serve. In turn, the availability of sustainable finance instruments could influence the resources available for creating low-carbon, climate-resilient digital capacities.

4.2. Europe

Big Tech, cloud services providers, semiconductor companies – none of these monikers of GDTNs are associated with Europe, because few of them have European origins and headquarters. As geographers and others have long argued and in many ways documented, Europe has been more of a stage for globalization and financialization (typically by US companies) rather than a leading actor or agent (Leyshon and Thrift, 1997). It is hard to imagine, for example, London's role in financial globalization, without US banks, asset managers, corporate law, accountancy, and other financial actors choosing London as their location for international expansion (Wójcik et al., 2019). Likewise, Europe has found itself a stage of platformization, again by US and increasingly also by Chinese companies. Europe's mediocre start in GDTNs is related inherently to its diminished and diminishing role in GPNs and GFNs and is begging for a word that is an antonym of synergy.

While in the US technology firms now account for more than 40% of stock market capitalization, in Europe only the Dutch market reaches this level, with the share of the tech sector in most European countries below 10% (Wójcik et al., 2024). In 2010, 39% of foreign exchange transactions involved the Euro on at least one side. In 2022 this declined to 31%, while the share of US Dollar increased from 85% to 88% (BIS, 2022). In the same period, the Japanese Yen saw a much lesser decline, from 19% to 17%, and the British Pound has maintained its 13% share. With the Global South looking for lesser dependance on the dollar, these figures indicate real weaknesses, particularly in the core of the European Union. They are also consistent with the evidence that EU financial centers have become less significant in GFNs (Iliopoulos et al., 2024). At the intersection of finance and technology, the global list of 100 largest FinTech firms by market value includes 20 firms from Europe. However, none of them are in the top 10 (CFTE, 2024).

Platform capitalism is reshaping Europe and its position in the world, with uncertain outcomes. While ten, even five years ago, Europe might have still appeared to sit comfortably on a West-East axis, connecting the North Atlantic world with Asia, e.g. through Chinese investments, this axis was served a blow by Russia in 2022, and is getting weaker and weaker. The prospect of West-East collaboration is further threatened by the emergence of a 'Silicon Curtain', with GDTNs

increasingly divided into a US and Chinese spheres of influence (Harari, 2024). Some European countries, like Hungary for example, may find themselves on the eastern side of the curtain, further undermining the integrity and cohesion of the EU. There are research opportunities to explore how China's Digital Silk Road is entangled with foreign operations of its leading TechFins and state-owned banks.

Meanwhile, the European Union is seeking ways to regain technological sovereignty in the digital realm, but the results are mixed. Over the past few years, it has built legislation to combat gatekeeping in digital markets, effectively targeting US Big Tech's to guarantee a level playing field and has issued sky-high fines. In the realm of finance, both in the EU and the UK we have seen a shift to 'open banking' where FinTechs are now seen as vehicles to increase efficiency and competition in financial services. But the platformization of finance has also increased dependence on Big Tech cloud, triggering European financial regulators to develop regulation on outsourcing by financial institutions. A key question here is to what extent infrastructural dependence also translates into financial data accessible for the US government if they should so desire, as has happened in the past with organizations like SWIFT (Farrell and Newman, 2023). It is telling that in 2020, the EU-US Data Protection Shield agreement, which was supposed to guarantee compliance with the EU's general data protection regulation (GDPR), was nullified by the European Court of Justice. The event triggered the installation of a new framework on EU-US data sharing. As financial geographers we need to look more closely into the regulatory dynamics here, as well as the wider geopolitical context in which these EU-US deals unfold. With Europe effectively dependent on NATO military power and intelligence with wars in its backyard, continued cloud subordination to the US may be a reality to accept.

In another, less bleak scenario, Europe may become the leading source of ideas on how to regulate platform capitalism, building on its leadership in regulating digital data, and environmental impacts (Bradford, 2023). After all, both GDPR and green taxonomy has influenced regulation elsewhere, from South Africa to Singapore (Cojoianu et al., 2024). However, one of the limits of this scenario is that without green production, green finance, and green technology to accompany green regulation, Europe's influence is muted and hard to convert into gains in real exports. Yet another possibility is that with the West-East axis of collaboration and development weakened, Europe will push south, towards more production, financial, and digital integration with Africa. It is worth reminding ourselves that the UK, France, and the Netherlands are still the largest sources of foreign direct investment stocks in Africa, ahead of USA and China (UNCTAD, 2023). The EU is already marrying development to digitization with key programs like Digital4Development, where the focus is on extending the internet backbone to Africa, deploying e-governance, etc. Yet, the shared physical geography of time zones may further enclose African markets in European-led platforms, warranting further research into the digitization, development, and remittances nexus (Guermond, 2020).

4.3. The United States

As became evident in our account of Asia and Europe, the United States wield significant infrastructural power effectively controlling a lot of digital technology choke points using its military and diplomatic influence to also align foreign states to align with its views (Farrell and Newman, 2023). This centrality in digital technology networks compounds centrality in GFNs, where US banks operating out of NY-LON and associated financial and offshore centers remain leading intermediaries amid the enduring dominance of the dollar as a global reserve currency. And despite the geoeconomic frailty of global production, US lead firms are still crucial cogs in GPNs, with its large technology firms old and new dominating the global platform economy.

Yet, at times of geoeconomic instability, even for the US the spatial articulation of finance, production, and digital technology is being reshuffled. In the preamble we already alluded to how the surge in demand for semiconductors is generating new spatial dynamics driving export bans

and the reshoring of production. We have seen a weaponization of finance with implications for listings of Chinese companies on US stock markets. But there also seems to have been a growing weaponization of digital infrastructure, like the proprietary cloud infrastructures of Big Tech given growing disputes over data sharing among NATO allies in the EU and the US. In the realm of production, the EU and the US are outbidding one another. We see this in similar plans to drive up domestic semiconductor production through the US Chips and Science Act and EU Chips Act. But we also see this in parallel plans to derisk the transition toward a carbon-neutral economy for private capital in the EU and the US (Gabor, 2023).

Another crucial dynamic we dwell on here is the growing energy and resource needs required to maintain and grow the current platform economy model that American Tech firms have invented and exported to large parts of the globe. Decarbonization seems to be one of the answers by the federal state. An example can be found in The Department of the Interior's commitment to increase clean energy production on public lands and waters and supporting the goals of deploying 30 gigawatts of offshore wind by 2030 and 15 gigawatts of floating offshore wind by 2035. For context, deploying 30 GW of offshore wind will require over 2,000 wind turbines and foundations, 6,800 miles of cable, and dozens of specialized vessels. This initiative has been propelled by significant federal investments from the Inflation Reduction Act (IRA), a $391 billion bill that is the largest federal action on climate change and clean energy in the country's history (Bistline et al., 2023). The IRA works hand in hand with the Bipartisan Infrastructure Law (BIL), $1.2 trillion law signed into law in November 2021, which includes funding for redevelopment of transportation, water, energy, environmental remediation, broadband, and resilience infrastructure (Steinberg et al, 2023).

Offshore wind is seen as a promising avenue to meet decarbonization targets due to perceptions that the ocean holds vast amounts of open space, yet the reality is more complex. First, 'open space' imaginaries tend to undervalue and misunderstand the significance of the ocean for many communities, particularly Indigenous, fishing and small coastal communities (Vierros et al, 2023). Second, the attempt to build rapidly at a massive scale undermines efforts to co-design with communities and consider alternative technologies that might enhance system performance (Aziz et al, 2022). Digging the channels required to host transmission lines can lead to difficult tradeoffs of either disturbing communities or natural sites (Ali et al., 2021). Third, offshore wind infrastructure is embedded in GPNs for critical components like specialized turbines, blades, subsea cables, and the vessels that support both transit and installation are international, while 'national' supply chains lack the maturity to meet escalating demand (Poulsen and Lema, 2017). Finally, to build, operate, and maintain offshore wind infrastructure at scale requires a workforce trained in specialized skills that are still scarce, or already fully deployed in other industries. Taken together, these obstacles are significant explaining why we see that many American Big Techs are bankrolling nuclear power plant operators to find a steady and abundant source of energy for ever-more consuming AI operations (Mazhar, 2024). Clearly, this would lock the US into a system with potentially high environmental risk, while undercutting the development of more sustainable forms of energy production.

5. Conclusion

We are aware that this editorial has not exactly been the most optimistic account. Such is the fate of living in these uncertain times. But perhaps, we can still be hopeful. The weaponization of finance, production, and digital technology is happening under our eyes, yet these are never uncontested trends. At the point of writing this editorial, the Monetary Authority of Singapore has just announced the launch of the Global Finance & Technology Network on 30 October 2024. As a not-for-profit organization, this will focus on building a global network of convening forums, offering advisory services on innovation ecosystems, providing access to digital platforms, and investing in technology start-ups with the potential for growth and social impact (Menon, 2024). In the effort to drive greater synergies between the global finance and technology communities,

the development of this organization highlights very practical concerns about the need to integrate finance and technology in generating economic values, social impacts and climate solutions. The fact that this is a state-led initiative also brings another interesting perspective to our opening regarding the the geoeconomic and geopolitical dimensions of finance. Rather than weaponized interdependence through shifting flows of capital and digital technology capacities, we should also attend to how power operates through the mobilisation of knowledge communities and standards setting, even amidst the more attention-grabbing headlines of trade wars or stock delistings.

With this example, we want to conclude our editorial pointing to the kind of critical narratives of hope that we may collectively produce as members of the *Finance and Space* community. We mean critical as being aware of the power and value-systems lying behind current developments in finance as it intersects with economy, society, and politics. But we also see the hope in such analysis, trying to distil ways where weaponization of core systems can be avoided and ruled as a collective infrastructure for the common good, and, crucially, identifying the spaces from which counternarratives can be launched.

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