

Not Yet the End of Transnational Digital Capitalism: A Communication Perspective of the U.S.–China Decoupling Rhetoric

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The interlinks of ICT industries between the United States and the People’s Republic of China reveal the complexity of the U.S.–China decoupling rhetoric, seen here from a critical political economy approach. The highly interdependent and symbiotic value chain between these two countries throughout hardware production, software provision, and capital investments may pose challenges to the decoupling motif. Also proposed is the concept of financialization of ICTs as a foundational mode of reproduction in the contemporary global political economy, where the United States and China are the two most active and engaged actors. Whereas decoupling is neither inevitable nor foreordained, complexity and uncertainty persist in terms of how both nations respond to crises.

Keywords: U.S.–China decoupling, digital capitalism, financialization, global political economy

From increasing tariffs on goods to blacklisting dozens of companies and universities (Bartz & Freifeld, 2019), from the flaring up of Huawei to the banning of Chinese social-media apps, from revitalizing the new quad military strategic alliance to mentioning China 15 times in the Interim National Security Strategic Guidance (Biden, 2021), the United States’ “New Cold War on China” seems unlikely to pause (Foster, 2021).

First coined by U.S. political analysts in 2019 (Auslin, 2019; Hirsh, 2019; Paulson, 2019), the “U.S.–China decoupling” discourse emerged as the culmination of Trump’s trade war on China since 2017, which later expanded to an all-around anti-China approach straddling across politics, economics, and science and research (Black & Morrison, 2021, para. 3). As policy makers, scholars, and media pundits size up the fraying seams, early discussions focused on the economic decoupling, the shrinking volumes of imports and exports, the declining dependence on each other’s markets, and the reduction in business cooperation (Li, 2019; Tsui, Wong, Lau, & Wen, 2020). The clamor has diverged between the moderates who advocate for open engagement to deescalate (Christensen, 2020; Li, 2019) and the hardliners who promote more aggressive actions to prepare for a full-scale delink (Pei, 2020; Tellis, 2019; U.S. Chamber of Commerce,

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2021). Some middle-grounders err on the side of caution to be mindful of the complicated geopolitical situations in the Asia-Pacific regions where strategic competition should sustain (H. Lee, 2020; Rudd, 2021).

Among these rich and contested discourses, an important but underevaluated aspect is the role of ICT industries. Well documented by political economy scholars, ICTs, broadly defined to include telecom, the Internet, and digital aspects, constitute a key pole of growth in contemporary global capitalism where the United States and China interact and integrate (Hong, 2017; D. Schiller, 2011, 2014; Tang, 2019a, 2019b). The following detailed examination of the patterns of supply and demand and of dependence and control in the ICTs and between two countries is conducive to understanding the complexity of the decoupling issue. Taking the critical political economy approach, the analysis shows that the development of U.S.–China relations in the past four decades is very much a history of integration through the ICT industries. Such an entanglement has been accelerated and magnified through the financialization of digital sectors—the most dominant mode of reproduction in the current political economy—giving rise to an array of transnational technology behemoths and unicorns. In view of the highly interdependent and symbiotic value chain between the United States and China throughout hardware production, software provision, and capital investments, it is not yet the end of digital capitalism, which a decoupling of the two countries would preponderantly unsettle. Whereas an ICT decoupling is neither inevitable nor foreordained, it is not without uncertainties. The conclusion discusses how both nations are responding to the crises, in what terms, and with what ramifications.

U.S.–China Integration Through the ICT Industry

To contextualize the current U.S.–China decoupling narrative, a review of the two countries' integration in the past four decades is helpful. This integration has occurred in three phases: the initial bilateral opening up in the 1970s and 1980s, the further integration in the 1990s and early 2000s, and the more complex interactions in post-2008 rebalance. Development of U.S.–China relations since the 1970s is in tandem with the integration of the two countries' ICT industries.

In February 1979, the iconic photograph in U.S. newspapers of Deng Xiaoping, China's leader at the time, wearing a cowboy hat at a Texas rodeo, signaled to the U.S. public that the top Chinese leader was "not only good-humored, but, after all, less like one of 'those Communists' and more like 'us'" (Vogel, 2011, pp. 344–345). Deng's symbolic visit, a real turning point to normalize U.S.–China diplomatic relations when U.S. President Jimmy Carter officially recognized the People's Republic of China as the sole legal government of China (U.S. Department of State, 2017), came seven years after U.S. President Richard M. Nixon's China tour in 1972, when the two countries decided to end almost 30 years of noncommunication. China's epic opening up and market reform starting in the late 1970s was not disconnected from the economic stagnation of the 1980s in Western capitalism (Amin, 2019). As a partial response, one of the most influential, postwar political economic transformations, in the name of free markets, swept across the globe and was led by President Ronald Reagan in the United States, Prime Minister Margaret Thatcher in the UK, and Deng in China. With general trends of "deregulation, privatization and withdrawal of the state" (Harvey, 2005, p. 3), the multifaceted restructuring took place in varied forms across nations. In China, a few interconnected characteristics marked the onset of reform: the release of the mighty reserve army of labor, use of foreign direct investments (FDI), and growing appeals for information technologies, which

together gave rise to China's enormous export-oriented manufacturing sector and ultimately made it the world's powerhouse of electronic manufacturing (Harvey, 2005; Hong, 2011, 2017). The ICT sector being a key player in this weaving path, China's insertion into global capitalism parallels its reconnection with the United States.

The United States became China's third-largest trading partner in 1984, after the two countries in 1980 signed a bilateral trade agreement that provided mutual most-favored-nation treatment (Morrison, 2005). China's trade with the United States increased from about US\$1 billion in 1978 to more than US\$7 billion in 1985 (Wang, 2010). The Reagan administration lifted the export control of advanced technology to China with the 1983 passage of an amendment to export administration regulations, a significant move that put China in the rank of "any friendly nonaligned country" on export issues, allowing China more-favorable and more-expeditious licensing of high-tech exports (H.R. 3231, 1984, para. 11). The amendment also made it easy for corporate America to take advantage of China's opening up, which offered huge surpluses in labor, land, and other production resources (Harvey, 2005; Tsui et al., 2020). The U.S. export of high technology to China increased immediately from US\$1.1 billion in 1983 to more than US\$2.8 billion in 1984 (J. Y. Lee, 1985). The import and export of machine and electronic products have steadily increased along with the overall trading-volume growth between the two countries (see Table 1).

Table 1. China's Machine and Electronics Exports to and Imports From the United States, 1992–2001.

Year	Export		Import	
	Amount (US\$ thousand)	Share of Total (%)	Amount (US\$ thousand)	Share of Total (%)
1992	791,966	9	2,133,380	24
1993	2,927,431	17	3,859,424	36
1994	4,597,714	21	4,525,092	33
1995	5,532,712	22	5,129,584	32
1996	6,527,483	24	5,572,853	35
1997	8,337,780	25	5,379,709	33
1998	10,450,827	28	6,427,219	38
1999	12,430,378	30	8,021,279	38
2000	16,400,813	31	9,209,220	41
2001	17,988,595	33	11,388,377	43

Note. Adapted from OECD Data FDI Flows (<https://data.oecd.org/fdi/fdi-flows.htm>).

During this time U.S. high-tech companies started their expansion in China. International Business Machines Corporation (IBM) and Hewlett-Packard Company (HP) were the first to enter China. Both companies sent delegations of executives to visit China in the late 1970s. HP opened the first Chinese office in 1981 and signed a memorandum of understanding with China National Electronics Import and Export Corporation in 1983 that led to China's first high-tech joint venture in 1985 (Li, 2008). IBM installed its computer system at the Shenyang Blower Works in 1979 and officially entered China in 1983, to provide installation and maintenance support for Chinese customers, including government and research institutions and private companies in Beijing, Guangzhou, and Shanghai (IBM, 2021).

In the 1990s, China's telecom and ICT industries merged. On Deng's 1992 request to deepen the reform, China sought to integrate into the global market through industrialization and informatization and put in place a series of policies to restructure the postal and telecommunication systems (Hong, 2017; Tang, 2019b). To better facilitate market transactions, ministerial governments collaborated with multinational corporations, such as Microsoft and Cisco, in building data communication networks. Having entered China in 1992, Microsoft established a Chinese subsidiary—Microsoft (China)—in 1995 and Microsoft Research Asia in 1998 (Microsoft, 2021). Microsoft has since established close partnerships with Chinese universities, research institutions, and government entities (Bass & Banjo, 2020; "Chinese Ministry," 2018; Meredith, 2003).

Cisco came to China in 1994 and launched a Chinese website to enable local customer support (Cisco, 1996). The company gradually integrated into China's telecommunication, finance, insurance, and energy industries and education and public services to help construct the country's national information networks. In 1998, Cisco's CEO met with top Chinese leaders, including the president, vice minister of education, vice minister of information industry, and director of the Foreign Affairs Office of the state council. The company's long list of Chinese customers and partners includes China Telecom, China Unicom, China Railcom, China State Power Corporation, Sinopec Corporation, China Information Highway Corporation, and Provincial Posts and Telecommunications Administrations in Henan, Guangxi, Guangdong, and Shandong. Cisco's technology supported the China National Financial Network, a nationwide network project codeveloped by the Ministry of Posts and Telecommunications and six major state banks, in addition to the data centers Cisco built for these banks (Fan, 2001). Around this time, other U.S. tech giants came to China (see Table 2).

Table 2. Major U.S. Tech Companies' Initial Entry Into China.

Company	Year established	Year entering China	Initial development
HP	1939	1981	Opened an office in Beijing
IBM	1928	1983	Opened a service center in Beijing
Texas Instruments	1951	1986	Started a Chinese branch in Beijing
Microsoft	1975	1992	Opened an office in Beijing
Cisco	1984	1994	Opened an office in Beijing
Dell	1979	1996	Opened a new integrated sales, manufacturing, and support center in Xiamen
Google	1999	2000	Launched a Chinese-language version of Google.com
Qualcomm	1985	2001	Opened a CDMA (code division multiple access) Development Center to provide training, support, and equipment-testing services to manufacturers and mobile carriers in China, and to support research and development of third-generation CDMA wireless standards
Apple	1976	2001	Opened a Shanghai-based trading company
Amazon	1994	2004	Acquired the Chinese online shopping market Joyo, later rebranded to Amazon China

As Seabrooke and Wigan (2014) noted, wealth chains often come entangled with value chains. Also at this time, the Chinese government actively liberated the domestic financial market and encouraged foreign capital and venture capital to be invested in the technology industry. Specifically, in the ICT sector, a variable interest entity (VIE) structure was used to incorporate transnational capital while evading constraints on ownership and control (Tang, 2019a). This coincided with the deregulation in the United States of the financial market and the new information highway project, which boosted the first Internet boom globally. With a domestic ICT industry thirsty for growth, a state ready to further reform, and an expansive U.S. financial sector, the late 1990s and early 2000s witnessed the rise of China's ICT industries. A favored form of funding with faster profit returns and fewer restrictions, U.S. venture capital came to China, investing in the high-profile companies of Sohu, NetEase, Sina, Tencent, and the like, which not only connected the two countries' tech and financial sectors but also significantly shaped their power dynamics (Tang, 2019a; Table 3).

Table 3. Top 10 Most Active U.S.-Based Venture-Capital Investors in China, 1998–2001.

Company	Headquarters	Year Founded	No. of Investment in China
IDG Venture Capital*	Boston, MA	1992	49
Intel Capital	Santa Clara, CA	1991	21
Goldman Sachs	New York, NY	1869	9
Walden International	San Francisco, CA	1987	6
WI Harper	San Francisco, CA	1993	6
Warburg Pincus	New York, NY	1966	5
Citicorp	New York, NY	1812	3
Carlyle Group	Washington, DC	1987	3
Fidelity	Boston, MA	1946	2
Merrill Lynch	New York, NY	1914	2

Note. * IDG Venture Capital, originally founded as a venture-capital branch of the U.S.-based International Data Group (IDG), had huge success on its entry into the Chinese venture-capital market in the early 1990s, was reorganized, and is now under the name IDG Capital, with headquarters in Beijing (see also <https://www.idgcapital.com/about-us>). Adapted from Zeng (2004).

The intertwining finance and digital sectors between the United States and China reflected the fundamental mode of reproduction in the global political economy in the past decades and gave birth to a handful of multinational digital giants based primarily in the two countries. The combined market value of the top seven global digital companies—Alibaba, Alphabet (Google), Amazon, Apple, Facebook, Microsoft, and Tencent—exclusively based in these two countries, would surpass Japan’s GDP in 2020, ranking third in the global economy. This was largely due to the skyrocketing investments in the technology industries and those investors’ interconnections on both sides. To update this richly documented history (Hong, 2011, 2017; Jia, 2018; Negro, 2017; D. Schiller, 2011; Tang, 2019a, 2019b), American investments in China’s ICT industries topped US\$4.3 billion by 2016, setting a record of the second-largest volume of investments in a single industry in a year between 1990 and 2019; and Chinese investments in U.S. ICTs reached US\$5.9 billion (Hanemann, Rosen, Gao, & Lysenko, 2020).

Supply chains have further integrated substantially with tighter intercapital collaboration. Much attention has been given to the “Appleconn” (Qiu, 2016, p. 6), a term that aptly captures the close alliance between Apple and Foxconn (also known as Hon Hai), the latter of which manufactures and assembles almost all Apple devices from Foxconn’s mainland China factories. Posting a revenue of US\$102 billion in 2019, Foxconn ranks first in global electronics manufacturing services, with a 41.1% market share (Hon Hai, 2020, p. 102). Though its annual reports did not disclose the names of key customers, Apple is widely recognized as Foxconn’s biggest client (“Apple Supplier,” 2020; Yeung, 2014). A “Customer E,” identified as the top key customer, accounted for \$96 billion—50.18%—of Foxconn’s total net sales. On Apple’s top 200 supplier list are 35 of Hon Hai’s subsidiary plants and facilities, 29 of them based in mainland China. Besides those originated from or headquartered in the greater China area, almost all Apple’s major global suppliers have divisions, plants, or facilities located in mainland China. A list of Apple’s suppliers and their subsidiaries in China would look much like Apple’s entire supplier list (Apple, 2019).

Apple is not alone in taking advantage of the massive infrastructures, resources, human talents, labor forces, and policy bonuses that mainland China offers. Foxconn is also the premier manufacturer for Dell, HP, IBM, Samsung, and LG and of the gaming devices by Microsoft, Nintendo, and Sony (Hille, 2019; Moorhead, 2019). To give a less-known example, Dallas-based Texas Instruments (TI), having had businesses in China for 20 years, opened its first wafer-fabrication facility in southwestern China in 2010 and established Texas Instruments Semiconductor Manufacturing (Chengdu; Cable, 2010). Acquiring more local facilities and expanding the manufacturing capacity with enhanced facility at its Chengdu High-Tech Zone campus (Texas Instruments, 2014), TI invested almost \$1.69 billion by 2013, revealing a long-term goal in China over the next decade (Texas Instruments, 2013).

Advanced Micro Devices (AMD; 2004), for another instance, the Silicon Valley-based, multinational semiconductor company, first set up an office in Beijing's central tech-zone Zhongguancun in 2004. China being a significant market (see Table 4), AMD started a joint venture with intellectual-property licenses with Tianjin Haiguang Advanced Technology Investment Co. (THATIC; Advanced Micro Devices, 2017), to codevelop China-based chips (Clark, 2016). The collaboration was halted in June 2019 as THATIC was banned by the U.S. Department of Commerce from receiving key U.S. technology (Sraders, 2019). In disputing an inaccurate news report, AMD stated that it "strictly complies with all U.S. laws, and cares deeply about the national security interests of the United States" (Advanced Micro Devices, 2019, para. 8).

Table 4. AMD's Sales in China, 2004–20.

Year	Sales Revenue in China (US\$ million)	Total Sales to External Customers (%)
2004	464	9.3
2005	846	14.5
2006	1,477	26.2
2007	2,456	41.9
2008	2,553	44
2009	2,445	45.3
2010	3,006	46.3
2011	3,493	53.2
2012	3,131	57.7
2013	2,519	47.5
2014	2,324	42.2
2015	1,145	28.7
2016	1,108	25.9
2017	1,747	32.8
2018	1,319	20.4
2019	1,736	25.8
2020	2,329	23.9

Note. Adapted from AMD Annual Reports (2004–20).

Supply-chain entanglements, while granting companies productive power in assets-and-patents management (Malkin, 2020), could also be caught in geopolitical fights. In addition to the well-known

cases with Google in China and Huawei in America (Tang, 2020; Yeo, 2016), Zhongxing Telecommunication Equipment Corporation (ZTE), another Chinese telecom-equipment manufacturer and service provider, went through a five-year investigation from 2012 to 2017 by the U.S. government that resulted in a \$892 million fine and an export-compliance review program (Viswanatha, Dou, & O’Keeffe, 2017). ZTE’s U.S. suppliers, on which the company depends heavily to produce smartphones and telecom equipment, suffered from a ban on ZTE’s access to American components: Acacia Communications, a Massachusetts-based fiber-optic component supplier, had 30% of its revenue from businesses with ZTE; Alphabet’s sales income in the Android operating system, which powers ZTE smartphones, also dropped (Greene, 2018; Kubota & Strumpf, 2018).

If, it could be argued, an intertwined and capitalized ICT sector held the key to the U.S.–China interaction in the past 40 years, then an analysis of the decoupling narrative cannot be comprehensive without a closer look at the current status of these two countries’ digital-financial connections. As Yeo (2016) has insightfully analyzed, the Google-versus-China drama does not only replicate “a power struggle between two nation states to control a new strategic information and communication infrastructure” (p. 592) in the traditional sense but, more important, shows the increasing complexity, ambiguity, and volatility of the changing dynamics around ICT geopolitics due to the deep infiltration of transnational digital capitalism. This article next explicates why and how the ICT sector as a centerpiece to the U.S.–China integration is also critical to the global political economy where the two countries are the most significant players.

Financialization: A New Type of Global Supply Chain

To further understand the entanglement of the ICT industries of the United States and China, this section explores a theoretical framework of the financialization of ICTs that best captures how the global digital and financial sectors have evolved and interacted. This framework argues that the process of financialization of the ICT industry, originating in the United States and expanding to China, has become the key mode of (re)production in the current global political economy. A tracing of the history of financialization in the U.S. context shows that parallel to the physical value chain in the manufacturing of ICT products is a nonphysical—capitalized—supply chain that catalyzes the reproduction of value-added services and platforms. More important, the technology behemoths are taking over the previous role played by Wall Street in incubating emerging start-ups and thus consolidating these giant companies’ power to dominate global markets from funding to production and service provision.

Financialization is not new. In Karl Marx’s *Capital*, financialization was a stage working directly with monetary assets without the production of physical commodities (Bryan, Martin, & Rafferty, 2009). A form of nonreal speculative investments, financialization thrived in the post–World War II era, and a shift from manufacturing to speculative investments happened in the macro economy as a solution to the 1970s recession (Sweezy, 1994). This means that financial capital, previously just a tool to facilitate the real reproduction of material goods, has become the new site of reproduction and the stock of assets itself with high speculative values, warranting right of self-expansion. Despite waves of crisis in the 1990s and 2000s, financialization has persisted with increasing intensity, advancing financial behaviors, institutions, and elites across the operations of economy that interfere with daily activities of households, corporations, and states and subsequently cultural, technological, and social spheres (Lapavitsas & Mendieta-Munoz, 2016; Marazzi,

2010; Sweezy, 1994). Not only an economic behavior, financialization also became a political project and a set of ideologies resulting in a dominant stratum of "oligopoly-finance" capitalists and eventually class changes in the United States (Amin, 2008; G. F. Davis & Kim, 2015).

In this U.S.-led global transformation, experts of technology and finance formed cross-sectoral elite networks (A. Davis & Williams, 2017; Schwartz, 2019). Widely adopted to facilitate transactions, ICTs became critical stakeholders in the massive global financial networks and were themselves a new pole of growth fueled by financial capital (D. Schiller, 2014). While there had been discussions on the interlocking relationship between the industrial and banking capitals and on the hegemonic power of finance over traditional businesses (Dumenil & Levy, 2004; Herman, 1982), recent scholarship turned to the digital industries and analyzed the increasing presence of venture capital (VC) in the rise of Silicon Valley (Ferrary & Granovetter, 2009). The early development of Chinese Internet companies took a similar path as their successes were owed largely to global venture investments (Jia & Winseck, 2018; Tang, 2019a; Xia & Fuchs, 2016). These studies, however useful in foregrounding the role of finance in ICT growth, have shown only one stage in the expansion of ICT industries. To develop a comprehensive framework of the financialization of ICTs, the data and documents from the U.S. Internet and venture-capital industries are next examined. The financialization of ICT industry is an unfolding and transnational process with three historical stages: ICT companies' reliance on financial investments, the provision and expansion of financial services on digital platforms, and the shift of ICT companies from being invested to investing in others. The financialization of ICTs is more than the process where the digital sector is sponsored by the financial sector: more significant, financialization indicates a structural change where the ICT sector integrates into the financial sector and ultimately takes on a central position in it.

Financial Investments in the Internet Industry

Technology companies in their infant stages heavily rely on financial investments. During the 2000 dot-com boom, US\$119.6 billion was invested in 8,320 deals (PitchBook, 2019; see Tables 5 and 6). Leading U.S. Internet companies in their initial developments have all involved financial investors with global backgrounds, origins, or connections, which correlate with the scholarly observations on financial power being a key index in global political economy (Schwartz, 2019; see Table 7).

Table 5. Venture Capital Investment in U.S. Internet Sector, 1995 to 2018.

Year	Investment (US\$ million)
1995	388
1996	1,082
1997	1,592
1998	4,190
1999	17,059
2000	30,872
2001	8,313
2002	1,629
2003	1,639
2004	2,472
2005	2,817
2006	4,390
2007	6,618
2008	8,329
2009	5,173
2010	8,674
2011	14,783
2012	11,913
2013	14,866
2014	25,187
2015	34,481
2016	23,716
2017	29,621
2018	37,566

Note. Adapted from PwC/CB Insights MoneyTree Report (2019).

Table 6. Top 5 Venture-Capital Investment Destinations by Sector in the United States, 2018.

Sector	Venture Capital (US\$ million)
Internet	37,566
Health care	20,848
Consumer products	15,042
Mobile and telecommunications	14,980
Software (non-Internet, mobile)	10,103

Note. Adapted from PwC/CB Insights MoneyTree Report (2019).

Table 7. Top U.S. Internet Companies' IPO History and Leading Investors.

Company	Year Founded	Year IPO	Leading Pre-IPO Investors
Alphabet (Google)	1998	2004	Sequoia Capital, Kleiner Perkins Caufield & Byers, Andreas Bechtolsheim, Yahoo
Amazon	1994	1997	Kleiner Perkins Caufield & Byers, AOL
Apple	1976	1980	Microsoft, Berkshire Hathaway
Facebook	2004	2012	Accel, Goldman Sachs, Greylock Partners, Global Founders Capital, Horizons Ventures, Microsoft, TriplePoint Capital, DST Global, Peter Thiel, Elevation Partners
Microsoft	1975	1986	Technology Venture Investors
Netflix	1997	2002	TCV, IVP (Institutional Venture Partners), Groupe Arnault, Reed Hastings
PayPal	1998	2015	Goldman Sachs, BlueRun Ventures, Clearstone Venture Partners, Madison Dearborn Partners
Salesforce	1999	2004	Marc Benioff, Halsey Minor
Uber	2009	2019	Goldman Sachs, First Round Capital, GV, Benchmark, Menlo Ventures, SoftBank, Morgan Stanley, Baidu, Fidelity Investments, Glade Brook Capital Partners, Garrett Camp, Travis Kalanick, Tata Capital, Letterone Holdings SA, Saudi Arabia's Public Investment Fund

Note. Adapted from Crunchbase (2021).

Provision of Financial Services on Digital Platforms

As technology companies grew and matured, they started collaborating with financial and banking institutions to provide various services. Microsoft's Azure and Amazon's AWS provided high-performance cloud computing for banks and financial institutions; Google and Apple launched their payment and virtual banking services, Google Wallet (now Google Pay) in 2011 and Apple Pay in 2014, respectively; Facebook expanded Facebook Business for financial services. This was an intermediating stage during which the ICT sector was growing fast with expanded services and acquiring more financial power, and the relation between the two sectors became less hierarchical and more equal. This was also when the digital companies started becoming financial investors and expanding their territories in the financial market.

From Investees to Investors

The latest and most salient developments have seen a further consolidation of the digital giants' power, in that many Internet companies have become VC investors themselves and established their own VC arms to invest in start-ups globally (see Table 8). This stage also sees the growth in these companies' nonphysical capital, also referred to as intangible assets, such as patents, trademarks, goodwill, expenses on research and development (R&D), software design, and user data. Key to the digital sector's market power, intangible assets possess increasing weight in ICT companies' valuations and thus have become an

important conceptual issue (Schwartz, 2019; Seabrooke & Wigan, 2014). Noted by Powers and Jablonski (2015), information like "patents, surveillance data, state secrets, and highly sophisticated algorithms" (p. 20) are all considered valuable resources in the geopolitical battle of the Internet. Intangible assets in 2019 made up more than 50% of the total assets in some leading online service providers, such as Netflix, Booking, and Salesforce; and the R&D expenses of Alphabet and Facebook reached nearly 20% of their 2019 revenues. Their abilities in providing both tremendous capital and resources for intellectual properties, R&D, and user and market research have made the digital giants very often more favored investors than traditional financial firms for start-ups to succeed (Jeong, Kim, Son, & Nam, 2020). In turn, these ICT giants' investments in smaller start-ups are aimed at incubating and controlling those intellectual properties, patents, and brand trademarks under the giants' corporate umbrellas.

Table 8. Global Digital Giants' VC Arms.

Company VC Arm	Major Investments and/or Exits by Region or Country
Alphabet: Google Ventures; capitalG	<i>United States:</i> AngelList, Duo Security, Tesla, Zynga, TrialPay, AOL, Machinima <i>Global:</i> JD.com (China), Xunlei (China)
Amazon: Alexa Fund, Bezos Expeditions	<i>United States:</i> Bill Me Later, LivingSocial, Engine Yard, BankBazaar.com, Twilio, Yieldex <i>Global:</i> Amazon Wholesale India, Amazon Pay India
Apple	<i>United States:</i> Finisar, Imagination Technology, ELAN Microelectronics, Adobe Systems, Corning Incorporated <i>Global:</i> Didi Chuxing (China)
Booking	<i>United States:</i> FlightCar <i>Global:</i> Didi Chuxing (China), Meituan-Dianping (China)
Facebook: Facebook, Inc., Investment Arm	<i>United States:</i> Wheel the World, Codepath.org, Xpresso <i>Global:</i> Healofy (India), Tuteria (Nigeria), JobSenz (Singapore), Coutloot (India), CoGrammar (UK)
Microsoft: M12 (formerly Microsoft Ventures)	<i>United States:</i> Apple, Facebook, DocuSign, Barnes and Noble, Pivotal, Equinix, AppNexus, VeriSign <i>Global:</i> Flipkart (India)
Netflix	<i>United States:</i> Roku <i>Global:</i> Milk VFX (UK), InfraDigital Nusantara (Indonesia)
PayPal: PayPal Ventures	<i>United States:</i> Uber, Loop Commerce, a Synchrony solution, mFoundry, Simility, happyReturns <i>Global:</i> MercadoLibre (Argentina)
Salesforce: Salesforce Ventures	<i>United States:</i> MongoDB, Twilio, Appirio, Authy, CloudLock, Practice Fusion, SurveyMonkey, DocuSign <i>Global:</i> Checkmarx (Israel)
Uber	<i>United States:</i> Girls Who Code, Xchange Leasing <i>Global:</i> Ambee (India), Uber China (China), Brigad (France)

Note. Adapted from Crunchbase (2021).

Although this analysis is primarily based on the U.S. context, the integration of the digital sector into finance and the general political economy is a transnational and encompassing process. As Table 8 shows, the U.S. digital giants' investments are transnational, with many Chinese linkages. Similar patterns can be found in China-based ICT giants (Hong, 2017; Jia, 2018; Tang, 2019a). By delineating the history and patterns of financial investments and their connections to digital companies, this article attempts to contribute to a theoretical framework of the financialization of ICTs. Parallel to the physical supply chains of materials, components, and labor, a new type of supply chain can be found in the ICT sector—that is, financial capital to fuel global digital capitalism. This process is more than Wall Street's interest and stake in the digital industries, or vice versa. It is signaling a structural shift in which ICTs gain greater power in the political economy, competing with the financial sector and eventually replacing its position. Moreover, it is happening on a global scale, involving cross-border interactions, especially between the United States and China. The economic entanglement of the two countries is not just in finance or ICTs but also in the financialized ICTs—in other words, an ICT-finance complex.

Can Unicorns Survive a U.S.–China Decoupling?

The above sections discussed the U.S.–China integration through the opening up of the ICT industries on both sides and the financialization of their digital sectors more recently. To further understand the future trajectory of the decoupling issue, this section delves into the status of funding and collaboration between the United States and China in a unique but transformative phenomenon in the ICT industry: the rise of unicorns as a key indicator of the unfolding digital economy. Unicorns, a metaphor used to refer to private technology start-up companies with unusual high market values—often estimated to be worth US\$1 billion or more, constitute a dynamic engine of digital capitalism (Griffith, 2019). The number of unicorns exploded from only around 40 in 2013 to more than 500 today (Unicorns, 2020), and values of IPOs developed out of unicorns have exceeded US\$100 billion ("In the World of Unicorns," 2019). Covering a wide range of subsectors of ICTs and penetrating every corner of society, these companies are transnational and diverse in origins, human talents, and investors ("In the World of Unicorns," 2019).

This section tracks the highest-valued technology unicorns based in the United States and China and their interconnections to each other's digital and financial sectors. The valuation of these companies is fluid because their funding status is rapidly developing. Highly valued unicorns in one year, for example, Airbnb and DoorDash, the two most valuable unicorns in 2020 (CB Insights, 2020), can be publicly listed the next year and no longer considered private start-up companies (this analysis reflects the data collected at the moment of writing). According to CB Insights (2021), a research firm specializing in technology and venture-capital analysis, of the 554 unicorn start-up companies worldwide as of March 2021, 276 were based in the United States and 123 in China; 25 of the American companies have Chinese investors (see Table 9), and 36 of the Chinese unicorns have U.S. investors (Table 10).

Table 9. U.S. Unicorns With Lead Chinese Investors.

U.S. Company	Industry or Sector	Chinese Investor
AppLovin	mobile and telecom technology	Orient Hontai Capital
Circle Internet Financial	finance and blockchain technology	IDG Capital
Course Hero	online education	IDG Capital
Discord	Internet software; entertainment	Tencent Holdings
Epic Games	gaming	Tencent Holdings
Fanatics	e-commerce	Alibaba Group
Flexport	supply-chain and logistics software	S. F. Express
Formlabs	hardware	Shenzhen Capital Group
Magic Leap	hardware	Alibaba Group
Nuro	transpiration; self-driving vehicles	Gaorong Capital; ZhenFund
Pony.ai	AI	IDG Capital; Sequoia Capital China
Qumulo	cloud service and data management	Northern Light Venture Capital
Rani Therapeutics	e-health	Ping An Ventures
Reddit	online platform; social media	Tencent Holdings
Ripple	blockchain	IDG Capital
Sila Nanotechnologies	electronics and transportation	Chengwei Capital
Skydance Media	entertainment	Tencent Holdings
SoundHound	AI; voice technology	Tencent Holdings
Splashtop	online software and services	DFJ Dragon Fund
TangoMe	mobile communication technology	Alibaba Group
Trumid	Fintech; online financial services	Hillhouse Capital Group
TuSimple	AI; logistics and transportation	Sina Corp
Udemy	online education	Tencent Holdings
Upgrade	Fintech; online financial services	CreditEase Fintech Investment Fund
Weee!	online grocery	XVC

Note. Adapted from CB Insights (2021) and Crunchbase (2021).

Table 10. Chinese Unicorns with Lead U.S. Investors.

Chinese Company	Industry/Sector	U.S. Investor
58 Daojia	E-lifestyle; housekeeping	Kohlberg Kravis Roberts
Apus Group	Mobile and telecom	Redpoint Ventures
Bitmain Technologies	Hardware	Coatue Management
ByteDance	Social media; AI	SIG China
DianRong	Fintech	FinSight Ventures
Didi Chuxing	Ride-sharing; transportation	Booking Holdings; Mubadala Capital; Tiger Global Management; V Ventures
Dingdong Maicai	E-commerce; grocery	General Atlantic
DJI Innovations	Hardware	Accel Partners, Sequoia Capital
Dxy.cn	E-health	DCM Ventures
FXiaoKe	E-commerce	DCM Ventures
Geek+	Hardware	Warburg Pincus
Hello TransTech	Transportation	GGV Capital
Huaqin Telecom Technology	Hardware	Walden International, Intel Capital
Keep	Lifestyle	GGV Capital
Koudai	E-commerce	New Enterprise Associates, Tiger Global Management
Kujiale	E-living and services	GGV Capital
LinkDoc Technology	E-health	New Enterprise Associates, Tiger Global Management
Mafengwo	E-travel	General Atlantic
Maimai	Social networking	DCM Ventures
Manbang Group	Supply chain; logistics	capitalG
Manner	Lifestyle	Coatue Management
Meicai	E-commerce; grocery	Tiger Global Management
Mofang Living	Lifestyle; e-commerce	Warburg Pincus
SHEIN	E-commerce	Tiger Global Management
TuJia	E-travel	GGV Capital
Tuya Smart	Internet software and services	New Enterprise Associates, Global Bridge Capital
Unisound	Hardware; AI	Qualcomm Ventures
Xiaohongshu	Fashion; e-commerce	GGV Capital
Ximalaya FM	Media; mobile and telecommunication	Sierra Ventures
Xingsheng Youxuan	E-commerce; grocery	Kohlberg Kravis Roberts
Yiguo	E-commerce; grocery	Goldman Sachs; Kohlberg Kravis Roberts
Yixia	Mobile multimedia services	Kleiner Perkins Caufield & Byers, Redpoint Ventures

Yuanfudao	Online education	Warburg Pincus
Zhangmen	Online education	Warburg Pincus
Ziroom	E-real estate services	General Catalyst
Zuoyebang	Online education	GGV Capital

Note. Adapted from CB Insights (2021) and Crunchbase (2021).

Worldwide, 31 unicorns are valued at US\$10 billion, and 22 of them are based in the United States or mainland China. Of these 22, eight have received investments led by tech giants and venture capitalists from both countries. ByteDance, for example, the parent of TikTok, is estimated to have a US\$140 billion value, the highest-valued unicorn globally. Four of its multiple funding rounds were led by famous U.S. VC investors, including General Atlantic, Goldman Sachs, Kohlberg Kravis Roberts, and Tiger Global Management (see Table 11).

Table 11. ByteDance's Funding Rounds Led by U.S. Investors, 2012–20.

Year	Funding Round	Lead U.S. Investor	Other Investor	Funding Raised (US\$)
2012	Series A	SIG China (SIG Asia Investments), suborganization of Susquehanna International Group (SIG)	—	5 million
2017	Series D	Altimeter Capital	Sequoia Capital China; Qiming Venture Partners; K3 Ventures; CCB International	1 billion
2017	private equity	General Atlantic	—	2 billion
2018	Series E	General Atlantic; Kohlberg Kravis Roberts	Primavera Capital Group; Softbank	3 billion
2019	debt financing	Goldman Sachs; Morgan Stanley	—	1.3 billion
2020	secondary markets	Tiger Global Management	—	—
2020	private equity	Sequoia Capital; Kohlberg Kravis Roberts	—	2 billion

Note. Adapted from Crunchbase (2021).

This example of ByteDance is not exceptional, as high-profile U.S. investors investing in Chinese unicorns and Chinese investors in U.S. unicorns have become a common practice. Leading Chinese investors, including Alibaba, IDG Capital, Sequoia Capital China, and Tencent have heavily invested in the top-valued U.S. unicorns, such as Epic Games, Ripple, Discord, and Reddit, among others (see Table 9). They reflected the aforementioned distinctive characteristics of financialization: a heavy reliance on venture-capital investments and a rise of ICT companies as active investors. In addition to those listed in Tables 9 and 10, a handful of U.S. and Chinese unicorns shares common investors from Hong Kong, such as Horizon Ventures

and DST Global, the latter of which is an established player with famous investments in Alibaba, Facebook, Spotify, and Twitter.

The fast growth of digital unicorns, relying significantly on VC investments, manifests the highly financialized ICTs in current global economy. The high-return and low-risk nature of VC investments and patterns of growth in start-ups afford great benefits to both countries. But it is exactly such transnational, cross-sectoral, and flexible characteristics that make these investments and interactions hard to track and that pose challenges to government scrutiny. Although the United States and China have been generally supportive of cross-border investments, their approaches now show signs to diverge in reaction to the delicate geopolitical situation under the broader decoupling narrative (Lysenko, Hanemann, & Rosen, 2020). The Committee on Foreign Investment in the United States (CFIUS), the long-standing U.S. regulatory body that reviews and monitors foreign investments, reported a substantial growth in the volume of transactions reviewed in ICT businesses, a third of the total, from 2011 to 2016 due to increasing concerns with patent control and national security (Jackson, 2018; Malkin, 2020; U.S. Government Accountability Office, 2018). In China, the Foreign Investment Law took effect in 2020 to respond to U.S. practices of foreign-investment security review process ("Foreign Investment Law," 2020). In 2020, previous to an anticipated proposal to sell TikTok to U.S. buyers, the Chinese Ministry of Commerce updated export-control categories to include artificial-intelligence technologies (Mozur, Zhong, & McCabe, 2020). This further shows the growing importance of intangible assets in digital industries, as the governments on both sides are fully aware that the control over intellectual properties, information resources and standard-setting abilities would shape how they compete with each other and therefore are reactive, vigilant, and careful in scrutinizing ICT investments in the midst of delicate geopolitics (Powers & Jablonski, 2015).

As technology unicorns project future poles of growth in global political economy, they suggest that the U.S. and Chinese tech industries are interdependent and integrated with capital interlinks to both sides, regardless of an increasingly volatile political climate. This could make the decoupling scenario a complex, detrimental, and unlikely one, as stakes are too high to disconnect. By all means, the highly entangled, financialized, and transnationalized ICT industries in the United States and China are most monumental in today's digital capitalism, which has yet to fall.

Conclusion and Discussion: Not Yet Post-Transnational Digital Capitalism

The past 40 years saw significant power shifts of global political economy in a few interconnected ways: the wholesale neoliberalism primarily led by the United States and centered around its hegemonic power in the global monetary system, the sprawl of digital industries from periphery to the core of transnational capitalism in collaboration and competition with the financial sector, and the transformation of China from a backward and isolated nation to the second-largest world economy where ICTs have been playing a critical role. As the contemporary era is experiencing another round of structural shuffling in view of the unfolding economic downturn, the reemergence of populism, nationalism, and racism discourses globally and the still ongoing pandemic, one epicenter of the current crises is arguably the U.S.–China relation amidst a so-called new cold-war era. Taking a critical political economy approach that highlights the historical context and dialectical analysis, this article holds that the history of the U.S.–China *coupling* should be an entry point to understand the heated discussion on the U.S.–China *decoupling*. Whereas some

scholarly studies have addressed the decoupling from economic, trade, and currency aspects, this article adds a communication perspective—the political economy of ICTs—to this discussion.

The integration of ICT industries in the two countries not only played a major role in the U.S.–China connection in the past four decades but also has contributed significantly to the transnational digital capitalism that sits at the center of contemporary political economy. The concept of the financialization of ICTs as a useful framework helps to understand the power dynamics between the digital and financial sectors. A look at the evolution of financialization of ICTs in the United States reveals that ICT sectors have risen from being dependent on the financial industry to the leaders in funding and nurturing technology start-ups, which signals a structural shift in the political economy. The financialization of ICTs acquired new momentum due to the central role VC funding plays in incubating tech start-ups—the unicorns that underpinned the future vectors of growth. As the data about VC and portfolio investments in more than 500 tech unicorns reveals, the United States and China are undoubtedly the most influential players in this process where their ICT sectors are deeply connected. High-profile VC investors and Internet companies in the United States and China, such as Accel, Alibaba, Apple, Benchmark, Goldman Sachs, Google, IDG Capital, JP Morgan, Kleiner Perkins, Sequoia, Tiger Global Management, and Tencent, to name a few, continue to frequently engage with each other to invest in start-ups, which substantially tightens the business and capital connections between and among them.

In view of their history, current status, and future directions, the U.S.–China entanglement through ICTs is a profound, dynamic, and symbiotic process, which makes a decoupling scenario easier said than done. The lifelines of the most powerful global digital giants, many based in the United States and China, rely on a highly integrated supply chain of physical resources and capital support between the two countries. Borrowing Herbert Schiller's "not yet the post-imperialism era" judgment when he evaluated the trajectory of the cultural imperialism 30 years ago (H. Schiller, 1991, p. 13), it is not yet the end of digital capitalism, in which the U.S.–China entanglement in ICTs continues to evolve and expand.

The issue with U.S.–China relations is all-encompassing and at times of crisis. Complexity and uncertainty remain as both countries are reacting in their own terms. In United States, the current administration has a lot to deal with domestically in the aftermath of longtime deregulation and privatization; populist mobilizations that agitate class, racial, and gender inequalities; and divisive identity politics (Navarro, 2021). Although the U.S. diplomatic tone seems to have softened with regard to China, the Joseph Biden administration still stands firm in the bipartisan consensus to step up ways to contain the U.S.'s primary rival's growth (Foster, 2021). On the other side of the Pacific Ocean, China is not irresponsible: Internal reforms to build the socialist new countryside, to regulate real estate and tech tycoons, and to redistribute wealth toward common prosperity are proceeding with massive public support; all of these reforms are aiming to achieve an inward-looking, self-sufficient, supply-demand chain domestically. Externally, China is building its own economic and cultural networks through such projects as the Belt and Road Initiatives, Forum on China–Africa Cooperation, and World Internet Conference. In other words, China is actively seeking new modes of growth and is catching up to the United States in global governance, though how these efforts will unfold has yet to be tested. Considering these, further analysis from a class perspective can enrich the discussion, since the people, in both countries, from differing class strata, can be at odds when it comes to future scenarios of the two countries' decoupling. In any case, the current crisis

should serve as an awakening call for both governments to reevaluate and move beyond the existing mode of production in digital capitalism.

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