

Introduction: Geopolitical Shocks and Global Supply Chains

Etel Solingen

The relationship between economics and security has been central for understanding international relations in East Asia and the Asia-Pacific. On the one hand, intra and extra-regional trade, investment, and other forms of economic exchange have expanded dramatically. On the other hand, there have been no major wars for several decades: Indochina has been at peace for four decades, maritime Southeast Asia for six, and Northeast Asia for seven. Persistent historical, ethnic, religious, and territorial cleavages have been restrained, and major powers – most notably China and the US – have normalized diplomatic relations. Contemporary developments, however, call into question the stability of what some had characterized as “Pax Asiatica.” Tensions in US–China relations, especially the trade-and-technology war, have already transformed the tenor of East Asia’s international relations as we knew them. Other regional strains have deepened, including the most serious deterioration in Japan–South Korean relations in decades. Interactions between China on the one hand, and Taiwan and Hong Kong on the other, have reached their lowest point in decades as well. China’s activities in the South China Sea have escalated tensions with several Southeast Asian states over intrusions into their claimed territorial waters. These and other frictions have unfolded against a unique economic infrastructure linking East Asian countries. At the very heart of that infrastructure lies a tangled web of interdependence generated by global supply chains (GSCs henceforth) connecting the region with itself and with the rest of the world.

The chapters in this volume, conceived well before the Covid-19 epidemic, were designed to improve our understanding of the role of GSCs in the international relations of East Asia and the Asia-Pacific in the economic, political and security realm. GSCs spread the full range of tasks related to the design, production, and marketing of products and services over several countries, from a product’s design to its end use and beyond. Each stage or task contributes some

value-added to the final product, leading to “Made in the World” goods. GSCs thus capture a complex network structure of flows of goods, services, capital and technology across national borders (Spence, 2019). Samsung, for instance, relies on about 2,500 suppliers across the globe to produce its mobile phones (World Bank, 2020). The Huawei P30 Pro, a relatively recent smartphone model by Huawei – the most innovative Chinese telecommunication equipment maker – contained about 869 parts made by Japanese companies, 562 by South Korean companies, and 15 by US companies, with domestic firms supplying only 80 parts and less than 40 percent of its value-added (Xing, this volume, Chapter 2). Whereas trade in final goods dominated global trade once, GSCs accounted for about 60 percent of contemporary global trade in recent years (World Bank, 2020). Most manufacturing and services industries are organized as GSCs – also known as global value chains (GVCs), global production networks, cross-border production chains, supply chains, design and production networks, vertical specialization, disintegration or fragmentation of production, or globalized production – and typically measured by trade in “intermediate goods” or “trade-in-value-added.”¹ Most value-added is accrued by lead firms from developed countries from non-production activities (such as research and development, branding, marketing, and distribution). Many lead firms become factory-less (or fab-less), outsourcing production to non-lead firms in GSCs spread throughout East Asia and other regions.

GSCs are difficult to conceptualize and measure, and hence are the subject of ongoing debates over concepts and measurement, especially among economists and statisticians (Johnson, 2017). Indeed, the growing share of services and data in manufacturing and the post-production angles of GSCs – well illuminated in Xing’s chapter (this volume, Chapter 2) – add novel and yet more complex measures of interdependence linking East Asian countries with themselves and the rest of the world beyond those typically used in the international relations literature. A country’s total GSC activity – or GVC-participation in World Trade Organization (WTO) nomenclature – includes (a) the foreign value-added embedded in its imported goods and services that go into its exports (also known as “backward participation”); and (b) the domestic value-added that the country incorporates into its exports to third parties, which become inputs into the latter’s own exports (“forward participation”) (Demir and Solingen, this volume, Chapter 8; see also WTO, 2018). For

¹ There are differences across these terms, but we adopt GSC for standardization across the volume. Alternative terms surface sometimes in various chapters, depending on particular disciplinary emphasis (GVC or intermediate goods in economics, for instance) or to preserve the original nomenclature in cited sources. For further elaboration, see Baldwin (2006), Grossman and Rossi-Hansberg (2008), Gereffi and Sturgeon (2013), Baldwin et al. (2014), Taglioni and Winkler (2016), Mayer and Phillips (2017a, b), World Bank et al., (2017), WTO et al., (2019), and World Bank, (2020).

example, China's foreign value-added reflects its imports of intermediate goods from other countries that China relies on for producing its own exports. The monolithic integrated circuits that China imports from Taiwan for China's production of its smartphone exports are thus reflected in China's foreign value-added originating from Taiwan. In turn, the transmission apparatus that China exports to US firms for use in those firms' smartphone exports, is reflected in China's domestic value-added to the US.² Having transformed global economic interdependence as we knew it, and connecting countries in entirely new ways, GSCs deserve more dedicated attention than they have received in the past in the broader field of international relations, beyond international political economy.

First, the relationship between economic interdependence on the one hand, and interstate conflict and cooperation on the other, has a longstanding lineage in the theoretical and empirical literature in international relations. Yet, most work in that tradition has typically surveyed bilateral trade in final goods (gross trade), capital flows and foreign direct investment (FDI) as standard variables of interest. This volume, by contrast, concentrates on GSCs as a distinct, more complex, and perhaps unique mechanism of interdependence that has not yet gained adequate consideration in the analysis of broader patterns of interstate conflict and cooperation, despite the dramatic expansion of GSCs in recent decades.³ The next two sections expand on the underlying theoretical framework regarding the political origins and implications of GSC expansion.

Second, GSCs have been at the heart of the Trump administration's efforts to delink or decouple the US economy from that of China.⁴ Focusing on GSCs

² "Smile curves" are graphical depictions of how value-added varies across the different stages, from design to market, helping to describe the roles that different countries or industries play in GVCs/GSCs (Ye et al., 2015; Li et al., 2019). Manufacturing in computers, electronics and optical products; motor vehicles; and textiles and apparel are among the most "globally integrated" sectors.

³ Pioneering work by Rosecrance (1986, 1996) and later Brooks (2005) connected the rise of virtual corporations and virtual states to the decline of warfare and territorial competition among great powers. Those studies preceded the dramatic expansion of GSCs and their evolution from simple to complex GSCs (crossing borders twice or typically several times); built primarily on FDI data; and delimited the "diminishing benefits of conquest" hypothesis to "great powers." Other work on the effects of interdependence anchored itself in network analysis not specific to great powers (Dorussen and Ward, 2010; Kinne, 2012). Kim and Solingen (2016) provided the first statistical test of GSC interdependence and conflict/cooperation among both developed and industrializing states in East Asia, but preceded the onset of the major shocks analyzed in this volume.

⁴ Calls for some reshoring – return of corporations to their home countries – preceded the Trump administration and were driven by rising wages overseas, government incentives, commercial incentives to be closer to markets, technological change such as automation, and China's practices restricting foreign ownership, forcing technology transfers and violating intellectual property rights, as described in Lee and Osgood (this volume, Chapter 9). GSC growth as a percentage of global trade had leveled off since 2008, yet not just Trump but also the 2016 Bernie Sanders campaign adopted reshoring themes. On the role of nationalism and non-economic attitudes against outsourcing, see Mansfield and Mutz (2013).

makes clear why, despite the US administration's repeated pronouncements to the contrary, tariffs were rather tangential to its efforts to reduce US–China bilateral trade balances (Xing, this volume, Chapter 2). Over half of China's total exports include intermediate inputs that the US and the rest of the world exported to China in the first place, via GSCs.⁵ Beyond that, tariffs can have long-lasting implications for GSCs, which amplify the effects of tariffs. Lee and Osgood (this volume, Chapter 9) make clear that there was virtually no support for tariffs among an overwhelming number of US firms and peak associations, most of which are highly connected to China via GSCs. Trump's policies, they show, were more top-down than they were the product of private sector demands. High-technology firms with concerns about intellectual property violations and service exports opposed those tariffs on goods as well. Escalating technology controls spreading throughout GSCs were designed to hasten delinking.⁶ The initial technology ban affected about 1,200 US companies supplying 70 Chinese firms. US technology and export controls, in turn, accelerated China's pre-existing designs to foster technological self-reliance (Shih, this volume, Chapter 4).⁷

Third, Western lead firms in GSCs are at the heart of China's insertion in the global economy. The prospects of delinking have crucial implications for China's continued economic wherewithal, for its ability to avoid a "middle-income trap," and for the sustained viability of the political-economy model incepted by Deng Xiaoping that had yielded golden eggs to China's Communist Party – economically and politically – until now.⁸ As Demir and Solingen (this volume, Chapter 8) describe, GSCs played a major role in China's outward-oriented strategy. Forward and backward GSC participation has facilitated China's increased capacity for producing intermediate goods, hardly attainable

⁵ Xing (2019) estimated that in 2015, Apple earned \$19.3 billion in value-added from sales of iPhones, iPads, and iMacs in China. Including that value-added would increase US exports to China by about 16 percent, decreasing the bilateral deficit by about 5 percent, and thus narrowing the bilateral trade imbalance.

⁶ On technology controls, see Executive Order on Securing the Information and Communications Technology and Services Supply Chain, Infrastructure and Technology, issued on May 15, 2019: www.whitehouse.gov/presidential-actions/executive-order-securing-information-communications-technology-services-supply-chain/. The Department of Commerce's Bureau of Industry and Security restricted the ability of domestic and foreign firms to transfer US technology, including software, to Huawei. US semiconductor toolmakers were precluded from selling equipment to third parties if the latter intended to sell their products to Huawei (Bown, 2020b).

⁷ For detailed analysis of US–China tit-for-tat policies in the trade-and-technology war, see especially Xing, Lee and Osgood, Shih, and Lockwood (Chapters 2, 9, 4, and 10, this volume).

⁸ See also Solingen (2014). The middle-income trap refers to the inability of most countries to transcend middle levels of per capita income, between \$2,000 and \$11,000, and graduate into high-income categories (Eichengreen et al., 2013). Only 13 of 101 countries were able to reach high-income status between 1960 and 2008. Moving from low value-added to high value-added industries, an important objective for China's leaders, is crucial for avoiding the middle-income trap.

without lead GSC firms (Xing, this volume, Chapter 2). China's aggregate GSC activity grew 42 times between 1990 and 2018, a remarkable advance in comparative perspective (Japan's GSC activity grew nearly four times, South Korea's about 12 times and the US's about 6 times over the same period). While China accounted for only about 3 percent of global GSC activity in 1990, its share rose to about 16 percent in 2018. China became the primary GSC hub in East Asia, surpassing Japan in 2006. This dramatic rise had tangible effects on China's political economy, underpinning economic growth, job creation, wage increases, poverty alleviation, the emergence of a vast middle class, urbanization, welfare, and technological advancement. And yet, domestic bottlenecks and external geopolitical shocks, even prior to Covid-19, had introduced serious dilemmas for Chinese leaders regarding the future role of lead Western firms in GSCs in China's political economy and its overall grand strategy.

Fourth, beyond the direct implications of these shocks for China, their second and third-order effects can be massively consequential due to the nature of GSCs. China has become less dependent on imported intermediates (backward linkages) in recent years, but the rest of the world has become more dependent on China's exports of intermediates (forward linkages). China is also the largest trading partner for many East Asian states. This region is a pivotal arena for understanding the many facets of GSC interdependence. The density of GSCs connecting "Factory Asia" with itself, and the share of overall East Asian trade taking place within GSCs grew significantly over the last two decades (WTO et al., 2019). The volume thus focuses not only on China as the largest GSC node connecting East Asia with itself, the US, and the rest of the world, but also on other East Asian relationships embedded in GSCs, such as those between Japan and South Korea, Japan and China, Taiwan and China, China and Hong Kong, Taiwan–China–South Korea, and North and Southeast Asian countries (especially Chapters 11, 5, 3, and 6 by Moon, Kawakami, Zhang, and Aanstoos, this volume). The implications of this study, however, go well beyond East Asia. GSC-related issues analyzed here play central roles in other contexts as well, including the Brexit debacle, relations among East and Western European countries, among East Asian and African countries (Heto, this volume, Chapter 7), Latin American, and Middle Eastern ones. The recent erosion of GSC interdependence has increased economic and political uncertainty not just in the East Asian space; its consequences for the future of the global economic system and international cooperation are far more widespread (IMF, 2019). Geopolitical shocks and GSC disruptions affecting China thus have implications well beyond China, via the global economy, with potentially adverse boomerang effects on the US itself.

Fifth, GSCs are an especially versatile arena for understanding a phenomenon that spans different levels of analysis in international relations, from the micro to the macro levels. The chapters in this volume survey different dimensions of, and actors in, GSCs, from lead firms and suppliers' networks to sectoral and industry-level analysis (Shih, Kawakami, and Zhang, this volume,

Chapters 2, 5, and 3), to leaders and sub-national politics on GSCs in various countries (Lockwood, Lee and Osgood, Heto, Demir and Solingen, this volume, Chapters 10, 9, 7, and 8).⁹ All chapters also examine the role of GSCs at higher levels of aggregation including interstate political, economic, and geostrategic relations and transnational politics. The volume thus offers a kaleidoscopic account of how central GSCs have become to international relations in the twenty-first century, even prior to Covid-19. Indeed, GSCs are a focal point in contemporary debates over de/globalization, triggered initially by the 2007–2008 Great Recession, and in major subsequent processes related to Brexit, the election of Trump in the US, and emerging geopolitics more broadly.

These five considerations elicit an array of pivotal questions regarding the relationship between economic interdependence and interstate conflict and cooperation in a world of GSCs. How have recent geopolitical shocks altered the extant GSC infrastructure in East Asia and the Asia-Pacific? Why might leaders in the US, China, Japan, South Korea, and elsewhere in the region pivot away from – or, conversely, buttress – the GSC-centered relationships that had hitherto yielded positive mutual benefits at aggregate state levels? How have GSCs, especially lead firms, responded to the US–China trade-and-technology war and to other geopolitical shocks in East Asia? How fragile or resilient have GSCs proved to be against geopolitical shocks across the region, and how did Covid-19 alter those outcomes? What are the distributional costs and benefits of geographic GSC redeployments within and beyond East Asia stemming from the trade-and-technology war? Or, in the classical formulation: *Cui bono et cui plagalis?* (Who benefits and who is penalized?).¹⁰ And what are the preliminary effects of all this on the broader texture of international relations across the region?

These timely and largely unexplored questions separate the scope of this book from several other research agendas. First, we minimize attention to what is an otherwise abundant literature exclusively occupied with balance of power, hegemony, polarity, and other neorealist considerations (including the role of nuclear weapons) dominating the debate over the future of the region. Second, we address regional institutions and norms in East Asia only tangentially, as they are the subject of another extensive literature.¹¹ Third, whereas much of the literature on GSCs in economics and business focuses on firms, industries, and networks, we place states at the very center. Without them, it would be impossible to capture the deeper *political* foundations, trajectory, centrality, and implications of GSCs (Ravenhill, 2014; Mayer and Phillips, 2017a, b).

⁹ For an emphasis on actors and agency in the study of East Asia's international relations, see Foot and Goh (2018).

¹⁰ US trade-and-technology policies could well end up providing another example of self-defeating economic statecraft (Baldwin, 2020).

¹¹ For overviews of theoretical frameworks on those first two topics, see Solingen (2007a, 2007b, 2008), Pempel (2010), and Pekkanen et al. (2014).

Finally, while paying special attention to the place of GSCs in interstate geopolitical relations, the volume does not address environmental and other important dimensions of GSCs, amply analyzed in other fields. In sum, our core focal interest here is in those GSC-related questions that other work on the international relations of East Asia has significantly neglected hitherto. In so doing, the volume may also broaden the analysis of GSCs beyond the typical confines of the literature in business and economics, including authoritative work on GSC contributions to development (World Bank et al., 2017; WTO et al., 2019; World Bank, 2020).

A. ECONOMIC INTERDEPENDENCE, INTERSTATE CONFLICT AND COOPERATION: GSCs IN AN EVOLVING RESEARCH AGENDA

The extent to which the dramatic expansion of economic interdependence has underpinned interstate cooperation has been an enduring theme in international relations. For some, in a rather long lineage of scholarship in this field, greater interdependence heightens the costs of major armed conflict, lowering its probability (Rosecrance, 1986, *inter alia*). For others, such interdependence has not prevented and cannot prevent major armed conflict, just as it failed to prevent World War I, ending the first wave of globalization (Mansfield and Pollins, 2003; Findlay and O'Rourke, 2009).¹² Indeed, according to an equally long lineage of scholarship, state power and competition inevitably overwhelm any effects that economic interdependence may have in international politics (Hirschman, 1945; Waltz, 1979; Gilpin, 1981). Decades of empirical research have not dispelled theoretical disagreements regarding the relationship between economic interdependence and interstate cooperation or conflict. At least in part, disagreements stem from differences in underlying causal mechanisms at work, empirical referents of interdependence, competing specification and measurement, and epistemological discrepancies. Most of that literature, however, has concentrated on measures of interdependence typically related to gross bilateral trade and, more recently, foreign direct investment.¹³ The political origins and effects of GSCs were relatively neglected despite the rise of GSC-related trade as a fraction of total (gross) trade and, more importantly, the fact that GSCs enmeshed states in a different structure of economic and political relations than did trade in final goods. Gross trade flows render invisible the far more complex networks, especially trade in high-value manufacturing and services, that involve multiple participants and multiple cross-border flows

¹² The failure of interdependence to prevent World War I reappears in a recent article by former US trade representative Robert E. Lighthizer (2020c), who also questioned the premise that trade conflicts are necessarily destabilizing or that trading states are necessarily less conflict-prone.

¹³ For overviews, see Barbieri (2002); Mansfield and Pollins (2003); Chang and Kastner (2017).

(Spence, 2017), while reaching deep into domestic economic, political, regulatory and legal systems.

Adding to the advantages of a GSC focus identified in the preceding section, recent geopolitical and geo-economic developments offer a sort of natural experiment for exploring the reciprocal effects between economic interdependence and interstate relations. On the one hand, international relations in East Asia face the most complex bundle of geopolitical and geo-economic threats in decades, including trade-and-technology wars; rising tariffs, export controls, sanctions, and protectionism; nationalism and populism; erosion of trade agreements and WTO rules; tensions from the Korean peninsula to the South China Sea; corrosion of alliance commitments by the Trump administration; the so-called Thucydides trap presumably fueling the US–China competition; domestic political polarization; deterioration in regimes governing weapons of mass destruction; and energy and environment-related rifts, among others.¹⁴ Unlike previous sporadic episodes of tension, this new array of geopolitical shocks can hardly be considered “accidental” deviations from an equilibrium that diplomacy can restore fairly rapidly.¹⁵ On the other hand, recent variation in rates of expansion and retraction of GSCs offer an opportunity for exploring the extent to which GSCs may have provided a more robust foundation for interstate cooperation than older forms of interdependence or, alternatively, whether GSCs amount to equally vulnerable targets of nationalistic and autarkic ambitions. It is also possible that GSCs may have indeed generated substantially consequential effects in taming interstate conflict for several decades only to succumb, ultimately, to more powerful forces of competition and rivalry. This calls for greater attention to the degree of resilience of GSCs or their relative ability to withstand and survive geopolitical and geo-economic shocks, a neglected topic in international relations.¹⁶

The availability of a better foundation of empirical data on GSCs provides yet another opportunity for exploring some of these questions more systematically. The World Bank et al.’s *Global Value Chain Development Report 2017* (“Measuring and Analyzing the Impact of GVCs on Economic Development”)

¹⁴ In 2020 alone, South China Sea incidents included China’s sinking of a Vietnamese fishing vessel; an encounter between a Chinese survey ship and a Malaysian oil exploration vessel; China’s announcement of new research stations on disputed reefs and its declaration that it will create new administrative districts in the area (Chan, 2016; Williams, 2020).

¹⁵ Du et al. (2017) dismissed geopolitical shocks between the US and China between 1990 and 2013 as accidental short-term deviations from an otherwise long-term Pareto-dominating equilibrium underpinned by economic factors, such as factor endowments of trading partners, the size of their economies, technical efficiency and other similar factors.

¹⁶ This basic definition of resilience here applies to the study of GSCs in the context of international relations. More specific attributes of resilience from a management standpoint include the degree of visibility or transparency of the supply network and its ability to shift sourcing, manufacturing, or distribution fairly rapidly, develop scenario planning, and survive and prosper (John and Raman, 2020).

shed light on the complex value-added structure of trade in intermediate goods and services, and the way in which they fostered global networks, specialization and economic growth. The WTO et al.'s *Global Value Chain Development Report 2019* ("Technological Innovation, Supply Chain Trade, and Workers in a Globalized World") warned against counterproductive attempts to increase the domestic value-added content of exports artificially, before an economy undergoes significant technological deepening. It also interpreted declines in trade relative to global GDP and the rising share of intra-regional trade not as a result of trade frictions or backlash against adverse distributional effects of globalization but rather as natural consequences of economic development and the early stages of the digital transformation of economies. As outputs of international institutions, however, those valuable studies steered clear of addressing domestic or global geopolitical dimensions of GSC interdependence more directly or explicitly, leaving out crucial political drivers of GSC activity worldwide.

The literature on whether and how GSCs may or may not mitigate interstate conflict or enhance cooperation at this critical juncture in East Asia's international relations has been virtually inexistent or surprisingly underdeveloped theoretically and empirically. A preliminary analytical step in advancing such a research agenda entails the identification of key agents and core causal mechanisms connecting GSCs with states' putative incentives to cooperate or at least circumvent high levels of conflict. The causally prior point of departure for understanding the role of GSCs thus requires a proper grasp of why and how GSCs proliferated in East Asia to begin with. Lead firms (MNCs) may have been the more immediate agents in the expansion (or retraction) of GSCs. Yet the true architects of this and earlier forms of interdependence were political leaders and their supportive coalitions, who stipulate whether their states should embrace GSC-based interdependence in the first place. GSCs are not the product of invisible hands or purely economic processes, as depicted implicitly in the vast literature in economics and management, but rather the result of concrete policies and competing models of political survival that dominant ruling coalitions adopt in different states (Demir-Solingen, Lee-Osgood, Shih, Heto, and Lockwood, this volume, Chapters 8, 9, 4, 7, and 10). Understanding the dynamics of receptivity to GSCs thus requires tracing the political logic of the outward-oriented models that gave them life throughout East Asia (with glaring exceptions, such as North Korea) and most prominently in China since 1979, and the relationship between such models and putative incentives to mitigate interstate conflict.

B. THE DEEPER POLITICAL FOUNDATIONS OF GSCS

Earlier work on the relationship between domestic models of political survival and their relative proclivities towards militarized conflict or cooperation began by examining how expanding or contracting international

markets and institutions affect employment, prices, domestic incomes, and politics; how the ties linking politicians, sectors, parties, and groups to the international context influence their interests, perceptions, and choice of strategies; how distributional considerations impact different domestic constituencies, benefitting some but not others; and how some cultural and social movements deem greater integration in the global political economy and crude market forces as threatening their values or identities, thus increasing their receptivity to “organic” values such as nationalism and populism (Solingen, 1998, 2014). Leaning on the mobilizing capacity of economic interests, norms, identity and myths, politicians logroll across constituencies to craft competing domestic coalitions, each advancing different models of political survival in power. Two Weberian ideal-types – “outward-oriented” and “inward-oriented” – capture the essence of those models, mere abstractions not found in the real world in their purest forms. Each model vies for political control to implement its preferred grand strategy, seeking to maximize synergies across the international, regional, and domestic pillars of that strategy.¹⁷

Outward-oriented models such as those adopted by most East Asian states over the last five decades have embraced globalized production via GSCs, especially since the 1990s, whereas inward-oriented models around the world have recoiled from them. Outward-oriented models emphasize access to global markets, capital, and technology that GSCs are well suited to deliver. Those objectives require regional cooperation and predictability; domestic macroeconomic stability that reduces uncertainty, encourages savings, and enhances foreign investment; and minimizing, to the extent possible, external geopolitical and geo-economic tensions that compromise those synergies. Each of these vectors, or requirements, individually reduces the prospects for war and militarized conflict; collectively they make the latter even less likely. Conversely, inward-oriented models – typical of many industrializing countries in the Cold War era – advance grand strategies that classically benefit nationalist, protectionist, statist, and military-related industries, and often curtail private entrepreneurship. External insecurity and competition strengthen their rationales for extracting societal resources, capturing monopoly rents, creating cartels, and rewarding protectionism. Hyper-nationalism, military prowess, arms races, and myths of “encirclement” divert attention from costs (including opportunity costs) borne mainly by outward-oriented political rivals at home. Historically, inward-oriented models multiplied the probability of crises and war, either by design or

¹⁷ A grand strategy defines not only a country’s relation to global power and economic structures but also the internal extraction and allocation of resources among groups and institutions (Solingen, 1998).

through unintentional slither, a term used commonly to depict the “inadvertent” descent into World War I.¹⁸

The relative incidence and strength of respective models within a region define the relevant strategic context. Converging strategies in clusters dominated by inward-oriented nationalist, protectionist, and militarized models reinforce each other, lowering barriers against armed conflict and undercutting outward-oriented adversaries at home and beyond their borders. By contrast, homologous outward-oriented models converge on mutual incentives to avoid war, instability and uncertainty, deflating the merits of economic autarky and militarization, and seeking to create an environment inimical to inward-oriented adversaries, at home and abroad. While fostering agile states and encouraging common resilience, stability, and “prosper-thy-neighbor” policies, such models – across political regime types – require stable regional environments that tame military budgets, arms races, offensive build-ups, and border disputes that threaten stability and investments.

East Asian states evolved into an outward-oriented cluster from the 1960s onwards, progressively facilitating burgeoning GSCs which, in turn, became instrumental in sustaining those models politically, especially via high rates of economic growth. The models also generated regional and international institutions that lubricated GSC operations, along with the World Trade Organization, International Monetary Fund, World Bank, and proliferating preferential trade agreements that enabled collective action in trade liberalization. In turn, by underwriting mutual commitments to free trade and investment, this institutional landscape typically buttressed outward-oriented models, as architects of the Trans-Pacific Partnership (TPP) sought to do. The contemporary deterioration of that global institutional infrastructure has implications for GSCs as well. Above all, the expansion of GSCs over the last three decades was underpinned by dominant outward-oriented models in both the US and China, despite their otherwise significant domestic political, economic, and institutional differences. These models were replaced by more inward-oriented variants in both cases, to different degrees, in the era of Trump and Xi Jinping, with attendant consequences for GSCs.

Summing up, outward-oriented models fostered GSCs, embedding states in transnational regional and global networks lubricated by FDI and supported by services that facilitate communication and movements of goods, requiring progressively stronger “behind-the-border” commitments in trade rules. GSCs, in turn, incepted a new division of labor and new mechanisms that enmeshed states in novel and complex forms of interdependence. The opportunity costs of closure to GSCs became more politically prohibitive for outward-oriented models pursuing FDI, which requires stronger legal and institutional

¹⁸ For an overview of alternating dynamics of these competing coalitional models over time and space, see Solingen (2007b) and Solingen and Gourevitch (2017). For an application of coalitional analysis to US grand strategy, see Trubowitz (1998, 2011) and Narizny (2017).

infrastructures for attracting and protecting it. Yet those outward-oriented coalitions – crucial but neglected mechanisms linking interdependence and cooperation or conflict – may now be at risk from both internal and external shocks. They sustained significant upheavals during the 1997 Asian crisis and the 2007–2008 Great Recession that forced some retrenchment but survived those challenges. More recent developments worldwide, especially in the US and other developed countries, suggest that East Asia's trajectory as an outward-oriented region par excellence can no longer be taken for granted. The favorable global, regional, and domestic circumstances, political and economic, that lubricated the inception and blossoming of outward-oriented models and GSCs can be assumed no longer. The US–China trade-and-technology war, along with other external shocks and internal bottlenecks, could compromise the viability of those models.¹⁹ Their capacity for survival must therefore be recalibrated; the fate of GSCs as we know them hangs in that balance.

Reflecting on the political underpinnings of GSC dynamics is especially important for two additional reasons. First, as argued, inconclusive findings in the literature regarding the effects of interdependence on states' proclivities to cooperate or mitigate conflict may stem from excessive reliance on economic variables. For instance, trade openness (imports plus exports/GDP) or bilateral gross trade – frequently used proxies – obscure important underlying political mechanisms: whether a state's dominant model of political survival gravitates toward the outward or inward-oriented end of the spectrum, over and beyond those proxy lagging measures. States dominated by outward-oriented models may have incentives to cooperate even under relatively low extant levels of trade openness or total trade, as was the case under Deng Xiaoping in the early years of opening up. Conversely, rising and relatively high ratios of trade openness and total trade can trigger inward-oriented political counter-movements, as under Xi Jinping.

The relationship between economic proxies and political models is complex; one cannot be inferred from the other, and politics frequently trumps economics. Models of political survival provide the deeper foundations for explaining when, how and why interdependence may yield more cooperation than conflict or vice versa (conflict and cooperation are omnipresent; their relative ratios vary). Whether or not interdependence dampens incentives for war is contingent on who the political agents exerting dominance over crucial decisions under particular historical contexts are. The character of the global and regional political economy at particular world-times also affects the viability of respective models. Whether markets and geography are expanding or contracting; whether international institutions underwrite mutual

¹⁹ On the leveraging of global networks of financial and informational exchange for strategic advantage, see Farrell and Newman (2019).

commitments to free trade and investment or to protectionism; whether nationalism and protectionism reduce GSC operations via tariffs, consumer boycotts and export restrictions; and other dynamics of international exchange weigh heavily, as do domestic institutions, on the balance of incentives to attract or eschew GSCs, and to dampen or exacerbate external conflict.

Second, relatedly, if outward-oriented models of political survival were causally associated with the expansion of GSCs, emerging threats to those models give reason to probe into the durability of GSCs as we knew them. As Lee and Osgood, and Lockwood (this volume, Chapters 9 and 10) respectively document, the Trump administration's inward-oriented nationalist turn has affected policy vis-à-vis GSCs, China, and East Asia more broadly, well beyond its abandonment of TPP and assault on regional allies. Partly in response to Trump's policies, but also stemming from questionable solutions to pre-existing domestic considerations – including unresolved rural reform, urbanization, local–central tensions, unemployment, aging population, heavy debt load, corruption, environmental threats, high FDI-dependence for growth, and other challenges – China's inward-oriented model has gained added influence as well (Demir-Solingen, this volume, Chapter 8). While feeding on internal problems, the external corollary has been a nationalist emphasis on greater self-reliance, reduced interdependence with external actors, and slithering territorial claims across all borders. Xi Jinping's renewed emphasis on “internal circulation” – in the context of the “dual circulation” strategy – is explicitly designed to bolster domestic supply chains. Shih's chapter (this volume, Chapter 4), in particular, documents the penchant for technological self-reliance in GSCs accompanying China's inward-oriented turn embedded in its “Made in China 2025” program.²⁰ Chapters by Kawakami, Moon, Aanstoos, Heto, and Solingen (this volume, Chapters 5, 11, 6, 7, and 13) examine other implications of this turn, within China and elsewhere, for GSCs connecting China with Taiwan, Hong Kong, South Korea, Japan, Southeast Asia, and Africa.²¹

As the global political and institutional order underpinning open economies deteriorates, outward-oriented models and GSCs have become more vulnerable to external geo-economic and geopolitical shocks. Overall welfare effects of GSCs on developed countries may still be contested yet domestic distributional considerations and labor unrest nonetheless remain effective political tools for undermining GSCs (Autor et al., 2020). Furthermore, inward-oriented turns are especially prone to contagious diffusion: one state's hyper-nationalism and protectionism strengthens counterparts, in spiral fashion (Solingen, 2014). These dynamics of strategic interaction among states can become collectively stable, raising the barriers for restoring outward-oriented models. Further slides

²⁰ In December 2019, the Communist Party imposed a three-year deadline for government offices to replace all foreign-made computer hardware and software.

²¹ On the effects of the US–China trade-and-technology war on Taiwan's exports in components and technology to China, see Kastner (2019).

into an inward-oriented East Asia would generate structural tendencies toward decimated GSCs and lower barriers to conflict, even when the latter may not amount to any state's top-ranking preference. Thus far, even as nationalism remains a constant, most of East Asia seems to exhibit comparatively higher immunity against strong inward-oriented turns, compared to other regions, although many consider China to have made significant strides in that direction, before and during the Trump era.

Summing up, this introductory chapter has thus far: (1) provided a broad intellectual background for the volume's focus on GSCs in the context of conflict and cooperation in East Asia; (2) placed this particular focus within the wider literature in international relations and international political economy on the effects of economic interdependence on interstate relations; (3) highlighted the special relevance of GSCs to rapidly-evolving US–China and broader East Asian international relations; (4) considered the potential for GSCs to provide a different and more complex structure of interdependence than bilateral total trade and investment (standard measures used more frequently in existing literature); (5) urged the need to move beyond the purely economic and business dimensions of GSCs that are often detached from the political logics motivating states to embrace, calibrate or discard GSCs; (6) emphasized models of political survival as deeper mechanisms explaining both relative receptivity to GSCs and the potential connection between GSCs and incentives to minimize escalatory conflict; and (7) provided a baseline for a common terminology, with the understanding that different literatures across various disciplines continue to rely, interchangeably, on supply chains, GVCs, design and production networks, and other terms subsumed here under GSCs.

C. CHAPTER DESCRIPTIONS

The remainder of this chapter provides a roadmap for the rest of the volume. The various chapters provide important insights and systematic data on matters vital to the relationship between GSC interdependence and interstate conflict and cooperation, falling under three main rubrics. The first seeks to understand the domestic political sources of change underlying different states' relative receptivity to the dense GSC infrastructure crisscrossing the Pacific and East Asia. As argued, domestic political-economy models and growing contestation over them – especially in the US and China – go a long way in explaining that varying receptivity over time. Chapters by Shih, Lee and Osgood, Lockwood, Brookes, and Demir and Solingen (Chapters 4, 9, 10, 12, and 8) address the changing domestic political, economic and social dimensions influencing openness to GSCs or lack thereof. The second rubric explores more explicitly the effects of external geopolitical shocks on GSCs on the ground, including heightened uncertainty, geographic GSC redeployment out of China – especially to Vietnam, Bangladesh, Indonesia, Mexico, and Malaysia – and overall GSC

restructuring (Xing, Zhang, Kawakami, and Heto, this volume, Chapters 2, 3, 5, and 7). The third rubric, especially central to chapters by Moon, Shih, Zhang, and Aanstoos (Chapters 11, 4, 3, and 6), examines specific implications of GSC disruption for East Asia's economic interdependence and proclivities towards conflict escalation.

The volume is divided into three parts. Part I addresses the cluster of geopolitical issues affecting the region's contemporary GSC landscape, beginning with the US–China trade war. Chapter 2 (Yuqing Xing) provides a fine-grained analysis of GSCs in the context of the US–China trade-and-technology war. He argues that spillover effects from Chinese firms' insertion in multinational GSCs enabled China to bypass barriers and risks associated with technology, brand development, distribution, and marketing, to gain easier access to the US market. GSCs were a unique conduit enabling the successful entry of “Made in China” goods into US markets, turning GSCs into vital contributions to China's impressive economic transformation in record time. China's evolution into the core global manufacturing and assembly hub, and its massive exports to the US, deepened the Trump administration's concerns with persistently large US trade deficits with China. Yet, Xing views conventional trade statistics as (a) distorting the bilateral trade imbalance, overlooking the substantial proportion of intermediate inputs from third parties into China's exports to the US, thus exaggerating China's surplus, and (b) underestimating the fact that, as factory-less lead firms subcontract manufacturing and assembly to firms in China, US exports in intermediate goods and services to China travel back to the US embedded in final goods. Lead firms thus accrue revenues from the intellectual property, design, R&D, and brand embedded in those imported final products as well as from their sales overseas, including in China itself.

Xing illustrates his argument with the case of Apple's iPhones and extends it to other high-technology products. Using UIBE-GVC Indicators, he calculates that China's overall 2015 trade surplus with the US in value-added terms was 56 percent of the surplus in gross value, and the surplus in value-added terms for computers, electronics and optical equipment was 41 percent of the gross value calculation. GSC trade in value-added terms thus provides a more accurate depiction of the imbalance, in his view; tariffs cannot address that imbalance. As a category, China's “processing exports,” made primarily with imported inputs that accounted for about 50 percent of China's exports to the US by 2013, have declined as technology gaps narrowed and enabled higher shares of domestically produced intermediates. Finally, Xing addresses the adverse implications of the trade-and-technology war for China's position in GSCs.

Chapter 3 (Hongyong Zhang) analyzes other implications of the US–China trade war, including the uncertainty it generated among Japan's GSCs operating in China and throughout East Asia. China relies heavily on imported intermediates from Japan that China uses in its final goods exports to the US, especially in chemicals, general and electrical machinery, and transportation.

The US–China trade war thus affects Japan’s intermediate exports as well. Zhang maps Japan’s structural “upstream” position in GSCs and the multiple channels through which the trade war impacted Japanese firms. Uncertainty stemming from efforts to “decouple” GSCs affected not only trade but also investment, firm performance and expectations in Japanese firms, affiliates, parent companies, and subsidiaries in third countries. Japan’s affiliates in China were a crucial channel through which the adverse consequences of the trade war diffused throughout Japan’s own economy, the world’s third largest. Based on survey data collected in 2017 and 2020 by Japan’s Ministry of Economy, Trade and Industry, Zhang reports nonnegligible declines in sales, exports and employment among Japanese affiliates in China with highest exposure to North America–China trade. Another survey of about 3,000 firms (JETRO) found that 15 percent of Japanese companies perceived negative impacts of the US–China trade war and tariffs on their operations in 2018, rising to 20 percent by 2019. Zhang’s own analysis of the impact of US tariffs against China on Japan’s Nikkei 225 Index detects lower returns for affected Japanese companies. About 30 percent of Japanese firms, especially small and medium sized enterprises, reported expansion in domestic production. Some larger ones were considering reshoring from China to Japan and continued the redeployment of GSCs into Association of South East Asian Nations (ASEAN) countries that accelerated in 2012, following Chinese boycotts of Japanese products over the Senkaku/Diaoyu Islands dispute.

Chapter 4 (Victor Shih) shifts more directly into the technological competition between the US and China in one of the most crucial sectoral GSCs – artificial intelligence (AI) – with special attention to firm-level actors, especially Huawei. Having replaced the post-Deng Xiaoping “peaceful rise” with a more belligerent “China dream,” muscular nationalism, and implacable assertiveness in foreign policy (Schell, 2020), Xi Jinping assigned heavy emphasis to China’s development of big data and AI in late 2017. To be sure, this was not an isolated case of placing technological advancement and superiority as the lodestar in China’s ascent to global preeminence, yet AI was conceived in many ways as the heart of China’s GSC strategy. Shih argues that, with the accelerating pace of globalization and big data becoming key for standardizing and codifying progressively larger amounts of commercially useful information, China’s leaders made a strategic choice to control the entire AI GSC within its national boundary or, at the very least, to place most of it under Communist Party control. The chapter also documents how a geopolitical shock can change the evolution of a sectoral GSC, and how the latter’s structure is not necessarily predetermined by existing commercial and political institutions and knowledge clusters. Since 2017, Chinese officials have transformed the AI value chain from one closer to arm’s-length market or modular governance into a relational, captive, or even hierarchical one. Furthermore, domestic substitution for foreign links and promotion of state-owned champions were at the heart of these changes. Shih identifies the implications of the new strategy for encouraging

vertical integration along the AI value chain; dominance of government procurement; coping with Covid-19; and fragmentation of data storage and processing.

Chapter 5 (Momoko Kawakami) examines how competition and collaboration among East Asian firms with different backgrounds and business models – integrated and disintegrated across tasks – have shaped the crucial mobile phone/smartphone industry. The industry’s dynamics brought East Asia to a dominant position in the GSC, turning it into the home of major smartphone assemblers, brand firms, and key component vendors worldwide. Kawakami maps the positions of firms from China, South Korea, Taiwan, and Japan in the global landscape of the smartphone industry; identifies their different trajectories and respective development of competitive advantages; and describes changes in mobile phone production sites and firm nationality over the last ten years. The total share of firms based in South Korea, China, and Taiwan grew from 38 percent in 2007 to 85 percent in 2018. Over the last decade, production in South Korea and Japan has migrated to China and Vietnam. The dominant lead firms are Samsung, Apple, and China’s Huawei, Xiaomi and OPPO. The chapter also examines the historical contexts of the electronics industry in each country that shaped the various business models and allocated different value chain positions to individual firms. Importantly, it also highlights how the path-dependent features of each are also the foundation for the resilience of smartphone GSCs in East Asia.

Chapter 6 (Kristen Aanstoos) explores what she labels the “hidden economic costs of geopolitical disputes” affecting GSCs. While the latter have become central to East Asian states, the literature in international political economy explaining the precise pathways through which interstate relations generate shifts in GSCs is, as argued earlier, underdeveloped. The chapter proposes a framework for explaining the effects of geopolitical disputes on the topology of GSCs in East Asia. Adapting Rezapour et al. (2018), Aanstoos defines topology as the geographic distribution or concentration of facilities within the chain. She hypothesizes that nonviolent security actions, legal actions and the imposition of trade barriers are three mechanisms leading to shifts of different magnitudes in the topology of GSCs. By increasing costs and operational uncertainty to the various nodes in the GSC, these three mechanisms – security, legal, and trade-related actions – triggered two kinds of effects: “contractionary shifts” that reduced the overall number of nodes, and “diversionary shifts” that shifted nodes from one country to another. The chapter applies the framework to five case studies including Hong Kong, the US–China trade war, Taiwan, the Senkaku/Diaoyu conflict and the South China Sea dispute.

Chapter 7 (Prince Paa-Kwesi Hetu) examines the competitive dynamics between the US and China via their deployment of GSCs into the African continent. The chapter focuses on the impact of GSCs on economic growth and development and how these economic forces influence politics in the Southern African Development Community (SACU) – a customs union linking

Botswana, Eswatini (formerly Swaziland), Lesotho, Namibia, and South Africa. China is SACU's main partner in total trade terms, with China accumulating a large trade surplus over time until 2018. By contrast, SACU has sustained trade surpluses with the US rather consistently. A closer focus on GSC provides a fuller picture. Whereas GSC trade with the US grew to over 32 percent of total SACU-US trade by 2017, GSC trade with China reached about 21 percent of the total SACU-China trade. SACU exported more intermediate goods to the US than to China, and imported significantly more intermediate inputs from China than from the US. South Africa is at the core of SACU's GSC activity, contributing to very significant increases both in imports of intermediates from, and exports of intermediates to, other SACU members. The chapter also provides a window into the distinct GSC patterns of each SACU member individually with the US and China.

Part II turns to the domestic political, economic and social dimensions affecting policies vis-à-vis GSCs in various states. Chapter 8 (Uras Demir and Etel Solingen) examines the evolution of China's outward-oriented political-economy model that defined the purpose and receptivity to GSCs in recent decades. The first part provides significant empirical evidence for the association between the presence of Western-led GSCs and China's economic growth, employment and earnings, an expanding middle class, urbanization, and its development of technological capabilities. Especially noticeable is the potential role of forward GSC participation in furthering those goals and, indeed, their contribution to advancing Xi Jinping's motto of "China's Dream." China's leaders portray those outcomes as the product of an outward-oriented model worthy of emulation by others. The chapter then turns to limiting bottlenecks and emerging challenges fueling dilemmas regarding the future role of lead Western firms in China's GSC priorities. The Trump administration's shocks exacerbated those dilemmas dramatically, strengthening hyper-nationalist political forces in China. Demir and Solingen distill three stylized responses to those dilemmas among China's decisionmakers by grouping them into "GSC preservers," "GSC reformers," and "GSC replacers."

Chapter 9 (Jieun Lee and Iain Osgood) analyzes the political configuration underlying Trump administration policies vis-à-vis GSCs, especially those connecting China and the US. The chapter documents how US firms reacted in the aftermath of the US launching of Section 301 and associated tariffs on Chinese imports in 2018, and proposes three political models for understanding firms' motivations and responses to the US-China trade war. The production network model predicts that firms that benefit from GSC complementarity between the US and China – often well organized politically – are likely to favor bilateral trade openness and oppose tariffs. The trade competition model predicts that firms competing with imports – typically not well organized – will oppose trade openness and endorse tariffs, while those that compete with exports will resist tariffs. The "Chinese trade practices model" predicts that firms affected by China's forced technology transfer, industrial espionage and

intellectual property violations, and firms facing other Chinese trade and investment barriers, would support the trade war. Lee and Osgood rely on firm-level and association responses to the United States Trade Representative (USTR) to adjudicate among those models, and provide novel insights into what they label the most extraordinary mobilization campaign by US firms in twenty-five years.

Chapter 10 (Erin Lockwood) continues the preceding analysis of domestic considerations in US politics while shifting the focus to the political effects of GSCs on labor. Lockwood maps out the rhetorical framing and contestation of GSCs in US politics in the broader context of rising inequality and shifting geopolitics. The chapter explores whether, during the 2015–2016 presidential campaign, politicians framed globalized production (GSC) as distinct from older forms of international trade and whether they linked it to changes in national and global income and wealth distribution. She argues that the underlying politics and distributional consequences of GSCs defy the conventional dichotomization of “liberal” versus mercantilist/protectionist perspectives on trade. Trade always had distributional consequences but, as design, production, marketing, and financing have become increasingly disaggregated, those distributional consequences have intensified. To explore how the effects of GSCs influenced political discourse on international trade, Lockwood focuses on the unusual political alignments surrounding the debate over the Trans-Pacific Partnership (TPP) during the 2016 presidential primary and general election campaigns.

Chapter 11 (Phoebe Moon) draws attention to another set of political considerations threatening to upend, in this case, East Asia’s GSC infrastructure and political cooperation. Nowhere is the problem more pressing than in GSC-dense Northeast Asia, where China, Japan, and South Korea exhibit a remarkable degree of GSC integration alongside persistent nationalist quarrels. Moon relies on prospect theory to hypothesize that the relative strategic position of states vis-à-vis each other within a GSC value-added hierarchy explains choices to de/escalate geopolitical conflict. A leader of state A with vital industries in lower value-added positions than those of its partners/adversaries (B) is more likely to escalate conflicts, in her view. It is the prospect that A may be replaced in the supply chain altogether, she argues, that predisposes A towards more risk-seeking behavior. Conversely, a leader of state B holding higher value-added positions in that industry is arguably less likely to risk conflict escalation with A. Moon considers B to be relatively more risk-averse to incur losses via escalation with A, especially because it can find an easier replacement (C) for its GSC. She applies her framework to conflicts involving GSCs between South Korea and Japan, and South Korea and China respectively.

Chapter 12 (Marissa Brookes) argues that the rise of GSCs worldwide enabled transnational alliances of unions and workers designed to increase their influence over wages, working conditions, and labor rights through campaigns that take advantage of the structure of GSCs and rely on private

governance rather than sanctioning states.²² As China evolved into the crucial node in the GSC foundation of the global economy, Brookes explores the extent to which China's labor has become involved in labor-led campaigns to improve workers' conditions. Just-in-time manufacturing, extensive chains of subcontracting, and complex logistics networks have increased GSCs' vulnerability to deliberate disruptions in the production and delivery of goods and services, endowing workers with a unique opportunity to use work stoppages, slowdowns, strikes, and other forms of industrial action to compel employers to improve their conditions. GSCs, in other words, have enhanced labor's capacity to deploy its "structural power" on specific nodes of a GSC, applying pressure directly on owners and managers of multinational corporations. How well has this worked in China? Brookes highlights the subordination of the All-China Federation of Trade Unions (ACFTU) to the Communist Party, indeed operating as an organ of the party, which hardly provided a genuine avenue for exacting improvements in sometimes dire labor conditions and abuse, especially of migrant workers. The chapter also explores the potential implications of reduced Western GSC reliance on China's labor due to the geopolitical shocks on the one hand, and Covid-19 on the other.

In Part III, Chapter 13 concludes, largely as a postscript crafted in mid-June 2020 at a time of great uncertainty regarding the future role of GSCs in international relations, stemming not only from the further deterioration in US–China relations but also from Covid-19, which accelerated threats to GSCs as we knew them. The chapter begins by distilling core themes in Parts I and II, followed by an analysis of GSC responses to geostrategic and pandemic shocks. Because these constituted rapidly moving targets in mid-2020, the chapter can provide only preliminary conclusions. Yet the potential for encouraging further research in this critical area of international relations makes this first salvo worthwhile. A research agenda along these lines should go beyond the standard contemporary analysis of abstract balance of power considerations that often predict inevitable clashes. Security challenges in East Asia may end up being far less contingent on patterns that Thucydides observed millennia ago (between Athens and Sparta) than on the wherewithal of outward-oriented political-economy models and the more intricate connections between politics and economics that GSCs have engendered.

²² According to International Labor Organization estimates, one in five jobs worldwide is linked to production in GVC (Phillips, 2017).