

Choi, Byung-il

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Kontakt/Contact

ZBW – Leibniz-Informationszentrum Wirtschaft/Leibniz Information Centre for Economics
Düsternbrooker Weg 120
24105 Kiel (Germany)
E-Mail: [rights\[at\]zbw.eu](mailto:rights[at]zbw.eu)
<https://www.zbw.eu/>

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Global Value Chain in East Asia Under “New Normal”: Ideology- Technology-Institution Nexus

Byung-il Choi[†] 
Ewha Womans University
byc@ewha.ac.kr

This paper analyzes how the current Global Value Chain (GVC) of East Asia has been established, and attempts to project the future trajectory of GVC under New Normal in the global trading system. For this purpose, the framework of Ideology-Technology-Institution nexus is presented with focus on the dynamics of interplay between ideology and technology, duly recognizing the dual-aspect of technology- a platform for business and also for national defense. The paper analyzes how the Information and Communication Technology (ICT) of the 1990s played a role of “facilitator” in shaping the GVC of East Asia, where China plays ‘factory for final assembly’ and the US plays ‘the largest consumer’. Under New Normal, digital technology is likely to play the opposite role of “disrupting” the GVC of East Asia, unlike ICT. The paper explores the mechanism behind this great disruption. What is driving New Normal is the US-China power competition, seeking for dominance in East Asia and beyond. This paper argues that New Normal is not temporary shock, but will last for some time. Under this presumption, the paper presents three scenarios for the future trajectory of GVC in East Asia.

Keywords: Global Value Chain, East Asia, New Normal, Ideology-Technology-Institution Nexus, Dual-Aspect of Technology, Trade-Security Nexus

JEL Classification: F13, F51, F68

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I. INTRODUCTION

East Asian economy, the biggest beneficiary of rule-based multilateral trading system (usually known as GATT/WTO), is going through the turbulent times. Global Value Chain (GVC) in East Asia, which has been shaped and strengthened through decades of the high tide of globalization, faces a major challenge for its sustainability.

The remarkable achievement of GVC in East Asia stems from its access to the biggest market in the world, the US. Since China's accession to the WTO in 2001, access to the US market was secured on the basis of non-discrimination with other economies. Under this institutional arrangement, East Asia has been enjoying a dynamic and vibrant trading environment.

Compared to GVCs in the North America and Europe, which are virtually Regional Value Chain, GVC in East Asia has been truly global in its reach. At the same time, GVC in East Asia was based on rather fragile institutional foundation in comparison to GVC in North America and Europe. North American and Europe have additional trade agreement among themselves, in addition to GATT/WTO: the NAFTA and the EU. The NAFTA and the EU are trade agreement among "like-minded", countries with similar political system of liberal democracy and market economy. On the other hand, GVC in East Asia has been operating only on the basis of GATT/WTO only. Notwithstanding the "institutional deficit" vis-à-vis North America and Europe, GVC in East Asia has been enjoying a remarkable success.

Protectionist trade policy of the President Trump, the outbreak of the US-China trade war and continuing confrontation between the two largest trading nations are wrecking the very core of GVC in East Asia. Market access to the US became harder. Investment in the US has been under tight control. People to people exchange for research and development has become under a closer scrutiny. After a couple of decades of expansion, all of sudden, modus operandi of GVC in East Asia is being seriously challenged. Many multinational firms' assembly base in China is getting the hit. Risk of high trade barriers from the US and uncertainty about the future course of the evolution is high. Some global firms have already terminated their operation in China. Many are in the process of scaling back their investment plan or relocating out of China.

The US aims to upend the very essence of "China model" - economy with the Chinese characteristics, in the parlance of the Chinese Communist Party, or state-

led economic system to the eyes of the Western.¹ Tariffs are President Trump’s negotiating leverage to bring China to the table. In fact, it is not just tariffs that the US can use in this confrontation. List includes investment, currency, technology, people and so on.

What has been happening in international trade since the election of Donald Trump as the US President is the rise of “New Normal”. The jargon of “New Normal” is chosen to highlight stark contrast with liberal international order which the US has championed for seven decades after the end of the World War II. The main feature of liberal international order is rule-based free multilateral trading system, as embodied and practiced by the GATT/WTO. The institution of GATT/WTO ensures free and open trade, as long as countries play the game of trade by the principle of non-discrimination (“Most Favored Nation” among countries, and “National Treatment” between domestic and foreign firms). Any outcome - how much export and import by each country, thereby its trade deficit and surplus - is deemed to be fair. Under the aegis of the GATT/WTO, countries have pursued the total of eight rounds of multilateral trade negotiations, which gave rise to a steady and significant reduction of import tariffs and non-tariff barriers. While there have been continual challenges to this liberal international order, somehow the global community overcame those and in the process upgraded and strengthened liberal international economic order.

However, the challenge unfolding since the election of Trump is different from the past challenges. Never before the US went to the distance of breaking the very system it had championed. The main target of the US is “China model”. To the eyes of the US policy makers, China has been taking advantage of free and open market of the US for trade, investment, technology and people, while China has not followed through its commitment at the time of the WTO accession (Wu, 2016; Choi, 2019). After years of patience and waiting in the hope of further reform and opening in China in spite of all the backward moves on the part of China, the US policy makers at last gave up its engagement policy on China (Campbell and Ratner, 2018). The consensus among the Capitol Hill in the US is that China should be stopped before it is too late (Gingrich, 2019). Perhaps, President Trump represents the first US administration in the 21st century, which is determined to confront

¹ China Model is also known as “China, Inc.” (Wu, 2016). The Chinese government calls its system as “Socialism with Chinese Characteristics”.

China head-on. The US intends to upend the China model. China is determined to resist and fight. Welcome to the brave new world of ‘New Normal’! Against the sea change, GVC of East Asia will not be the same as before. How will it change? This question drove this paper.

The exact structure of GVC varies by product and industry, as amply demonstrated by WTO (2017) and WTO (2019). For instance, GVC for textile is different from that for auto in terms of scope of procuring supplies and steps from design to final assembly. Over the past decades, based on their abundant cheap labor, the increasing number of emerging countries raced to join to undertake certain tasks of GVC. Their participation to GVC has stretched GVC longer and complicated. Communication technology, which is getting cheaper and ubiquitous, reinforced the expansion process. Expanding GVC of East Asia is the case in point.

Drivers of GVC also vary by product and industry, as identified by OECD (2017). This paper will focus on GVC for a particular set of products, which are more technology-intensive. Considering the dual aspect of technology - platform for commercial products and also for security, having GVC stretching into politically different system carries a certain degree of security risk. Notwithstanding, the world had witnessed the mindless expansion of GVC pursuant to the logic of efficiency alone, pushing aside such security risk. As a result, “Factory China”, jargon used to capture the essence of GVC in East Asia where China plays a main hub, emerged and got strengthened. Under the headwind of New Normal, the sustainability of Factory China is under attack. What impact would New Normal bring about GVC for those technology-intensive products?

This paper is organized as follows. In the next section, a framework is set up to understand and predict the GVC for technology-intensive products. The framework we establish is ‘Ideology-Technology-Institution’ nexus, moving beyond the conventional ‘Ideology-Institution’ nexus. We pay a special attention to interplay between Ideology and Technology since the 1990s. Section 3 discusses the evolution of GVC in East Asia. We explore how “Factory China” has been expanded in the ‘Ideology-Institution-Technology’ nexus, taking full advantage of China engagement policy of the US and the ICT (Information and Communication Technology) Revolution in the 1990s. Section 4 discusses the main feature of ‘New Normal’. In this section, we argue that changing interplay between Ideology-Technology is disrupting and dismantling the existing Institution. Under unfolding Digital

Transformation,² the distinction between the commercial aspect and the national security aspect of technology is increasingly blurred. The institution of liberal international order is being disrupted, because this technological nature is put to play with the US-China power competition. Section 5 analyzes the implication of New Normal on GVC of East Asia. Future path of Factory China is also discussed. The paper concludes with discussion and policy implications.

II. IDEOLOGY- TECHNOLOGY- INSTITUTION- NEXUS

How do you explain the emergence of a particular institution in international stage? Conventional wisdom has it that ideology has played a central role. In the case of the Post-World War II liberal internal order, it was free trade. Economic discourse of free trade, as championed by Adam Smith and David Ricardo, was a hypothesis. It was elevated to ideology by the political leaders of the most powerful country after the World War II. The ideology that free trade promotes prosperity among the countries gave rise to the institution which provided a secure and stable rule for such free trade. The institution began as the GATT in 1948, and expanded in terms of membership and strengthened through rounds of trade negotiations among expanding members before upgrading to the WTO 1995.

Institution is usually defined as rule of game, venue for enforcing the rule and adjudicating disputes, and forum for negotiations. A particular form of ‘Institution’ is so densely associated with the prevailing ‘Ideology’ of the leading powers. Ideology-Institution nexus is well established in the literature, as attested by Gilpin (1987) and Bhagwati (1988). As history shows, Ideology of the US, the emerging leading power after the World War II, was the key driving force behind the emergence of the liberal international order, often called the Bretton Woods Institution (World Bank, IMF, GATT).

In accounting for the rise of GVC, an essential feature and also a sort of institution for international trade and investment, since the 1990s, Ideology-Institution nexus seems insufficient. Imagine how it was like to manufacture in the 1970s. Firms built their manufacturing base within a geographic boundary of a state, relying on the importation of key parts and components from abroad. Major industrialized

² Digital transformation means economic and social transformation towards data-driven or data-centered economy. Digital transformation is often called as “the Fourth Industrial Revolution”.

economies needed to build the whole chain of manufacturing process (from design-branding-research and development-acquisition of parts and components-assembly-sales-marketing-after service) within their national territories. The advent of cheap and powerful ICT has changed this way of organizing manufacturing capability. Thanks to ICT, firms could coordinate production across long distances and national borders around the clock. Manufacturing became ‘unbundled’ as supply chains sprawled into the globe (Baldwin, 2016). Just witness that assembling Boeing has gone from “made in the USA” to “made in the world”. The same is true of Airbus. A growing number of developing economies could participate in a particular segment of the production process, thereby paving the door of industrialization, something they could hardly imagine prior to the ICT Revolution.³

In the light of the critical role of Technology in international trade, Ideology-Institution nexus needs to be complemented by including Technology. In this paper, we present Ideology- Technology-Institution nexus as a framework to understand and analyze how the GVC of East Asia has been shaped and how it will be evolving in the future under New Normal. The framework of Ideology-Technology-Institution nexus was first developed by Choi (2018), which paid attention to the critical role played by technology. In the framework of Choi (2018), technology itself is treated as independent variable in shaping a particular institution, without being influenced by ideology. In reality, technology has the dual-aspect: it provides a platform for business and also for national defense. As such, technology is value-neutral. Recognizing the dual aspect of technology, one wonders which side of technology will become more salient and influential to affect the institution. An answer to this puzzle lies in the interplay between ideology and technology. Technology alone does not shape an institution. This paper attempts in-depth analysis of interaction between ideology and technology.

During the Cold War, the US initiated to establish the export control regime to the Communist countries, which led to the COCOM (Coordinating Committee for Multilateral Export Control) among the allies of the US. After the collapse of the Soviet Union and the Communist regimes in the Eastern Europe, new export control regime was established in the name of Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies. The Wassenaar Arrangement is much more extensive in the scope and inclusive in the membership.

³ Baldwin (2016) offers in-depth discussion on the impact of ICT on globalization.

ICT was a part of its disciplinary list. Some Communist countries, most notably Russia, joined. Compared to the COCOM, the Wassenaar Arrangement was less binding.

While Ideology can change the diffusion of Technology through its coercive control, there is unavoidable delay. Before taking an action, it may be the case a particular Technology was already in the wide circulation. Note that the Wassenaar Arrangement was agreed only in 1996. By that time, the ICT was gaining the full momentum on the global business. This lapse, and also less-binding nature of the Wassenaar Arrangement meant that the US, the winner from the Cold War, and the then unchallenged superpower, was of the view that it was time for deepening globalization. In this ideological spectrum, national defense aspect of the dominant technology of the time, ICT, was let loose to develop its full commercial potential.

In accounting for the emergence and change of an institution, we set up the framework of Ideology-Technology-Institution nexus. We make the following hypotheses:

- H1. An institution is the outcome of interplay between ideology and technology.*
- H2. When either ideology or technology changes, the existing institution would not be sustainable.*
- H3. Technology has the dual-aspect. It is ideology which determines which aspect more salient.*

The remainder of this paper will develop argument for these three hypotheses, using historical episodes and projecting future evolutionary path.

III. EVOLUTION OF GVC IN EAST ASIA

As explained from the outset, this paper does not attempt to deal with the entire spectrum of GVC covering the comprehensive range of products. What we are interested is GVC for technology-intensive, in relative sense, products. In this regard, iPhone serves a proper illustrative case.

1. Case of iPhone

History of GVC is history of China’s opening up and reform, and assimilation into the global trading system. China could not join the GATT/WTO by the end of the

20th century, despite its strong wish. China's GATT accession negotiations started in 1985. Moreover, the bloody crackdown on the Tiananmen Square pro-democracy protest in 1989 almost isolated China from the global trading system. The Western countries refused to grant market access to China. The US, in particular, put China to the annual review whether to grant market access. Each year saw the heated controversy in the US Congress, where anti-China group voiced no market access on the grounds of human right. China spent the most of the 1990s under political uncertainty. Despite this political uncertainty, more and more foreign investors were coming to China for setting up their factories. When China finally acceded to the WTO in 2001, foreign investment in China soared exponentially. The early pattern of foreign investment in labor intensive manufacturing like toy and clothing was moving to investment in capital intensive manufacturing like auto, steel, chemical, electronics and so on.

In the establishment of GVC for iPhone, interplay between Ideology and Technology has been instrumental.⁴ Apple's iPhone is a microcosm of Factory China. iPhone is designed in California, US, and assembled in China, mostly in Shenzhen by the workers at Foxconn, which is a Taiwanese firm. Display screen, semiconductors, memory, audio, screen controller, battery, and all other parts and components are supplied from all over the world and imported to China for the final assembly.

For each version of iPhone, Apple figures out the global supply networks of these parts and components, considering industry dynamics and bargaining power of Apple. For the successful production and sale of iPhone, managers of the Apple need to work out supply-side and demand-side of equation.

When the CEO of Apple made its decision to assemble in China, not elsewhere, he did not have to worry about the demand-side of the equation. China's market access to the WTO was secured through its accession to the WTO, only thing he needed to worry about was the supply-side: how to effectively procure the parts and components necessary for the final assembly. Here comes the role played by Technology. Thanks to the drastic reduction of communication cost thorough the ICT Revolution, Apple could organize such an expansive global mapping of supplier network with final assembly in China. Without death of distance for moving ideas,

⁴ The following discussion on iPhone draws on Choi (2018).

most key parts and components for iPhone would have to be located nearby the final assembly line.

As the case of iPhone demonstrates, the ICT Revolution of the 1990s greatly facilitated the allocation of diverse tasks of production along the globe beyond a national boundary pursuant to a firm’s business strategy. This feature of ICT may be called “facilitator.” Interplay of ICT and Ideology gave rise to GVC of East Asia.

2. Delicate Balancing Act

Compared to GVC in Europe and North America, GVC in East Asia is based on rather weak Ideology-Technology-Institution nexus. In addition to GATT/WTO, North America and Europe have successfully established additional trade agreement among themselves: the NAFTA and the EU. The NAFTA and the EU are trade agreement among “like-minded”, countries with similar system of liberal democracy and market economy. On the other hand, GVC in East Asia has been operating on the basis of GATT/WTO only. Dominant ideology instrumental in shaping GVC in North America and Europe was “free and open trade among the like-minded would promote prosperity and peace”. In the case of shaping GVC in East Asia during the 1990s to the early 21st century, what worked in North America and Europe was not sufficient. In terms of dominant ideology, two additional elements were pivotal: “free trade with China will push China toward a path toward more democratic and more market oriented system” and “China’s economic rise would not threaten the peace and prosperity of other countries and the world”. The former was the presumption behind the US engagement policy toward China. The latter was “Peaceful Rise of China”, which China was busy promoting.

In the emergence of GVC in East Asia, ICT played the role of “Facilitator”, mainly because the Ideology of the leading power wanted to make the most of the business potential of the ICT. The outcome was fastening globalization, and the expansion of GVC into many different regions of the globe. Such ideological inclination was carrying the time, because the US was pushing the engagement policy toward China under the belief that China would be transformed to less authoritarian and more private sector-driven market economy. Such China engagement policy kept going as long as China embraced the rhetoric of “Peaceful Rise”, hiding its ambition for regional dominance.

GVC in East Asia is often called as “Chimerica” - combination of China and America. It is built on rather delicate balance. If either the US or China retreats from its driving ideology, balance will be shaken and things will begin to unravel.

3. Early Challenges

The first moment of challenge came when China changed its decade-old rhetoric of “Peaceful Rise” to “New Type of Great Power Relation”. In 2007 China has overtaken Germany to become the third largest economy in the world. In 2010 China has become the second largest economy in the world by overtaking Japan. In coupled with the US-originated global financial crisis in 2008, China became emboldened in aggressively asserting its interest in the global stage. New rhetoric of Beijing was “New type of great power relations”. In essence, China claimed it was a rising power and the US, the incumbent superpower, should recognize China as a new power and respect and accommodate China’s core interest (Wang, 2011). Otherwise, confrontation would be unavoidable, which may lead to a devastating and costly war (Alison, 2017; Mearsheimer, 2014).

Despite this tension between the US-China relations, the GVC in East Asia did not get much impact. In reality, the US was still hesitant to throw its decades-old engagement policy to the dust bin, even though the Obama administration came up with “Pivot to Asia” (Campbell and Ratner, 2018). Central elements of “Pivot to Asia” had two important trade policy initiatives: TPP (Trans-Pacific Partnership) and the US-China BIT (Bilateral Investment Treaty). Both initiatives date back to the times of President Bush. Back then, the main priority in the global strategic map of the US was not China. President Obama turned TPP and BIT to strategic weapons to contain China (TPP) on one hand and change China (BIT) on the other. Equally important, the US did not impair the very essence of rule-based multilateral trading system of the WTO.

As it turns out, the US “pivot to Asia” did not achieve what it intended. TPP was not implemented. Even though the US led the negotiations among a dozen countries to the finish line, it failed to ratify by the end of President Obama’s tenure at the White House. BIT negotiations with China did not produce anticipated outcome after years of talks. And in the election of 2016, Donald Trump was elected as the next President of the US.

IV. RISE OF NEW NORMAL

Since the Obama administration, the US began to denounce the *modus operandi* of the WTO. In particular, the dispute settlement was such a headache to the US. The US had let its frustration known to the public about the way the dispute settlement was administrated at the WTO by blocking the appointment of the AB (Appellate Body) members. The US accused that the AB was guilty of persistent judicial overarching and not respecting proper WTO procedures by adding obligations that were never agreed by the US and other WTO members (Payosova, Hufbauer and Schott, 2018). Since 2016, the US has blocked the reappointment of AB members, which had been passed as unwritten practice, and rejected several proposals to fill the remaining vacancies.

Besides, dispute settlement, the US has been unsatisfactory about China at the WTO.

Without the US approval, China would not have its place at the WTO. When China acceded to the WTO in 2001, China committed to a series of reform and opening measures. At first, China seemed on a path toward market-oriented economy. However, China’s track record has not been up to its commitment, as China continues to climb the economic ladder to become the largest trading nation in the world. During the Obama administration, the approach the US had taken was to establish a set of plurilateral trade agreement among the like-minded (TPP and TTIP) to upgrade the global trading rule in tandem with the evolution of digital economy with a view to isolating and containing China. If successful, China would be either forced to take the new rule or leave it. If China would take it, then China would be once again in the position of adopting the rule imposed by the US (as it had done during the process of acceding to the WTO) and changing its state-led economy more in line with market economy. Otherwise, China would be left isolated within its own market and its sphere of influence.

During the eight year of the Obama administration, the US still maintained the conventional approach of having the multilateral process going along with like-minded (allies and partners) at the core of trade policy, while it put less priority on the WTO. In this regard, one can argue that liberal economy order was still at the backbone of international affairs, despite the outbreak of strategic competition between the US and China.

With the election of Trump as the US President, things have changed radically. The first thing the incoming President Trump did on his first day at the White House was to take the US from the TPP. During his campaign, Trump accused existing trade agreement and blamed China. He was not a believer in multilateral process. Instead, he preferred the bilateral process, where in his mindset the US could maximize its negotiating leverage. Trump threatened Canada and Mexico to renegotiate two-decade long NAFTA. He pushed trade partners to the binary choice of “terminate or renegotiate”. NAFTA was renegotiated. An FTA with Korea faced the same fate. ‘Fair and reciprocal trade’, instead of ‘free and open trade’, was adopted as new mantra of the Trump administration’s trade policy.

Coming into 2018, things have further moved on. In March, 2018, the President Trump announced the imposition of punitive tariffs to all countries exporting steel to the US on the grounds of threat to national security, invoking the Section 232 of the 1962 US Trade Expansion Act. Few months later, the US announced the imposition of 25% tariffs on the 150 billion dollar worth of the Chinese imports, on the grounds that China has failed to live up to its commitment on Intellectual Property Right. China did not waste to respond reciprocally, which in turn provoked the US even further to impose another 25% tariffs on the other 250 billion dollar worth of the Chinese imports. To which China reciprocated. With a short course of time, trade confrontation between the two largest economies has escalated. What is remarkable about this process of the US-China Trade War is that neither the US nor China cared to resort to the WTO to find which was at fault. The very existence and use of the WTO was completely ignored (Choi, 2019).

Under the Trump administration, the crisis in the WTO dispute settlement system continued. The US continued to block the appointment of new AB member. When the term of two AB members expired on December 10, 2019, the AB left with only one member. The AB, composed of seven members, has no longer the minimum three members required to review appeal cases. The dispute settlement mechanism at the WTO, which has been touted as the crown jewel of the WTO, came to a halt.

President Trump and his deputy dealing with US trade policy shattered liberal international order the US championed for seven decades. Rule-based multilateral trading system of free trade has been swiftly replaced by power-based bilateral trading system of reciprocal and fair trade. Suddenly, the global trading system moved on to New Normal.

Instead of the principle of non-discrimination - Most Favored Nation and National Treatment, reciprocity has become been the new focal point of the US trade policy. Trump administration use reciprocity as meaning ‘tit for tat’, and ‘symmetry in market access.’ In practice, it meant that the US would increase auto tariff to 25% if China maintains 25% import tariff on auto. To the eyes of Trump and his trade representative, such reciprocity was perceived as ‘fair’.

Ironically, the US, which has championed the very establishment and strengthening of rule-based multilateral trading system, has turned to the breaker. This remarkable about-face gave rise to a bit strange word of “Globalization without America” (Choi, 2018).

V. IMPACT OF NEW NORMAL ON GVC IN EAST ASIA

1. Case of iPhone Revisited

To illustrate the impact of New Normal on GVC in East Asia, we take the case of iPhone again. As discussed earlier, the supply-side of iPhone has been shaped by advances in ICT, while the demand side of iPhone was taken care of by China’s membership at the WTO. As such, iPhone represents a microcosm of GVC in East Asia, ideology-technology-institution nexus. The rise of New Normal means something unthinkable could happen. To drive the point, let’s go through the following thought experiment.

What if the US government decides not to import iPhone from China, stating that working conditions in the iPhone assembly line in China violates labor rights? Under vehement protest from the civic groups, the US Congress has just enacted a law, under which the US administration is required to ban all the imports of iPhone assembled in China. The China government becomes upset. It accuses the US of interfering with domestic issue. Furious China brings the complaint to the WTO. Can the WTO handle this case?

Answer is ‘no’. China may bring the case to the WTO. A panel may be composed. After some time, usually a year and half or more, the panel report may be issued. If China wins, the US would appeal. If the US wins, China would appeal. With only single AB member remaining, the WTO is ill-equipped to review the appeal case. Foreseeing this process and reasoning backwards, there is no point of brining the case to the WTO. It would only consume scarce public resources and waste time.

Realizing that the rule-based WTO system would not be helpful in addressing the issue, China may resort to unconventional measure. Its option may include the import prohibition of the American pork, citing the phytosanitary concern. If China decides to respond with the import ban, the US and China will be taken to trade war of tit for tat.

New Normal means a lot of unconventional stuff can happen. The following is just an illustrative and imaginative list:

- *The US government prohibits the import of iPhone as assembled in China, on the grounds of national security.*
- *The US government decides to impose 25% tariffs on iPhone from China, on the grounds that the Chinese market remained closed for the US products.*
- *The China government demands Apple to use only the China-made semiconductor for iPhone assembled in China.*
- *The China government demands Apple to disclose its proprietary customer information on the grounds of maintaining public order.*

As a matter of fact, the above-listed hypothetical events are taking place in front of our eyes. President Trump is invoking the Section 232 of the 1962 Trade Expansion Act to impose punitively high tariffs on the foreign steel. He threatens to do the same on the auto import. Also, Trump threatened to impose 15% tariffs on the Chinese import, including consumer electronics and toys, as of December 15 2019 in case of no agreement.

China's Cybersecurity Law of 2017 mandates data localization: storing all of the data foreign firms generate from China inside the border of China. The Chinese authority may conduct spot check on the firm's network operation. Under the law, network operators in China, whether local or foreign, have to submit to 'black box' security reviews with no clear procedure known to the firms (Uchill, 2019).

Some critics allege that Cybersecurity Law is a recipe for the Chinese authority to spy on the user of foreign firms. In the midst of controversy of privacy infringement and surveillance in relation to the law, in February 2018, Apple moved its operation

of iCloud in China to the Chinese firm, Guizhou on the Cloud Big Data Industrial Development (GCBD).⁵

China’s aggressive industrial policy under the banner of Made in China 2025 is isolating some foreign firms at its disposal. For instance, Korean electric-vehicle battery manufacturers, which are assessed to be at the frontier of battery technology, have been virtually shut out from supplying their batteries to the EV made in China. These Korean companies built their battery production facilities in China, following the cue from the Chinese government of providing subsidy for battery. Once their factory was ready for the full operation, the Chinese government revised regulations. In a bizarre twist, the Korean companies with the state of art battery technology could not supply their batteries. In the meantime, local Chinese companies enjoyed de facto monopoly of supplying batteries for all EV made in China. In the case of battery, what China proclaims as legitimate industrial policy is in fact a blatant discrimination against foreign companies in China.

As the cases in our thought experiments reveals, many policies of which legitimacy seems nebulous and justification is mainly driven by domestic politics are being adopted in the name of security by the two largest economies in the world. With this trend gaining the ground and intensifying, the rule-based liberal international order is increasingly sidelined, marginalized, and fatally crippled. Instead of rule, power is now in the center stage of international order.

2. New interplay of Ideology and Technology

It is a mistake if one gets the impression that New Normal is breaking seven-decade-long liberal international order only because of President Trump’s hardline approach to China. It takes two to tango. The US hardline approach to China is reaction to the new face of China. It is China’s continuing emboldened provocation which caused the US to change its long engagement policy to hardline approach.

What drives New Normal is the US-China power competition. After years of quantum economic growth, China now aims to rise to the regional power in East Asia. Since Xi took power, China began to portray itself as a ‘new type of great power’, one that seeks to promote a ‘community of shared future for mankind’ and

⁵ GCBD was established in 2014 by the local government of Guizhou province as a data storage company.

a ‘new type of international relations’. In his first summit with the US President Obama in June 7, 2013 at Sunnylands, Xi Jinping, the President of China and also the General Secretary of the Chinese Communist Party, stated: “the vast Pacific Ocean has enough space for the two large countries of China and the US” (White House, 2013). In the same summit, Xi also claimed: “we (China and the US) should build a new model of major country relationship”⁶ (White House, 2013).

Xi’s first summit with the US will go down in history as a turning point in the China-US relationship, when China officially broke with Deng Xiaoping’s long standing strategy of keeping low profile (“hide your strength, bide your time, never take lead”) and let the world know its ambition to become a new superpower challenging the incumbent superpower.

Central to Xi’s “China Dream” is harnessing technological capability and modernizing military so that China can match the US head-on. In the path-breaking digital technological breakthrough of 5G, AI and Big Data, China is already ahead of the game as the front runner.

Xi is overseeing the reform of People’s Liberation Army (PLA). Under his leadership, the PLA is being transformed from an army-based institution for continental defense into a force for projecting power beyond China’s borders, through expanded naval, air-force, cyber, space and AI capabilities. (Rudd, 2020) The goal of building a world-class military is, Xi stated in his speech at the 19th Party Congress, “to fight and win wars”.

With the consolidation of power on the Communist party, the state is getting the driver seat and the private sector in China is driven to the back seat (Lardy, 2019). To the eyes of the West, reform and opening have stopped in China since Xi took power (Shambaugh, 2016). China under Xi aims to establish its sphere of influence in East Asia, driving out the US from the region. Belt Road Initiative (BRI) and the aggressive militarization of the South China Sea are driven with this strategic goal in mind.

New leadership of China under Xi recognized the importance of technology. After four decades of growth on quantity, China became aware of growth on quality. Among other things, the leadership of China aimed to enhance its technological

⁶ This wording is as appeared in the official transcript released by the White House. Xi spoke ‘新型大國關係’ in Chinese, which Chinese government officials and scholars translate as ‘new type of major power relations’.

capability. Empowering self-reliability of technology is not only for economic development, but also for military purpose. The blueprint of “Made in China 2025” was precisely designed with this strategic aim in mind (Morrison, 2019). Even though “Made in China 2025” is officially marketed as industrial policy, something akin to industrial policy of Germany, Japan and Korea, its legitimacy is in a strong doubt (Choi, 2019). Main policy tools to achieve the objectives as set in “Made in China 2025” are massive subsidy, and discrimination against foreign investors, as the case of the Korean battery vividly illustrates. Industrial subsidy is prohibited in the subsidy agreement of the WTO, which China accepted when it acceded to the WTO.

Another tool China to dramatically increase the Chinese share in the critical technology in short period of time is acquisition from abroad. China’s attempt to acquire American technology has become under a close scrutiny. In particular, semiconductor was in the limelight of policy focus. Several Chinese attempts to buy American firms in semiconductor sector got aborted under high-profile controversy. The US expanded its radar from China to shadow of China to trace the origin of the investor anxious to buy the semiconductor technology in the US. The most high profile case is the US block of Broadcom’s acquisition attempt of Qualcomm in March 2018. Singapore-based Broadcom’s bid for San Diego-based Qualcomm was blocked by the US President Trump, citing national security concern, based on the negative review of the Committee on Foreign Investment in the US (CFIUS).

The US under the President Trump declared strategic competition with China. The National Security Strategy of 2017 (White House, 2017), the first report under the President Trump, stated China as “revisionist power”, seeking to “displace the US in the Indo-Pacific, expand the reaches of its state-driven economic model, and reorder the region in its favor”. The NSS 2017 proclaimed “economic security is national security.” Responding to challenges from China, the NSS 2017 identified “support for a vibrant domestic manufacturing sector, a solid defense industrial base, and resilient supply chains” as national priority. The shift to renewed power competition became intensified when December NSS 2017 was followed by January 2018 National Defense Strategy (NDS), which identified countering China’s military capabilities as Department of Defense’s top priority.

The 2018 US National Defense Strategy accused China of pursuing a long-term, whole-nation strategy and predicted that China will ‘continue to pursue a military modernization program that seeks Indo-Pacific regional hegemony in the near-term

and displacement of the United States to achieve global preeminence in the future'. China responded by the 2019 Chinese Defence White Paper. To the eyes of China, it was the US which provoked China, and undermined global stability.

Under the liberal international order, there was a firewall between trade and security. During those times, the country threatened by the US had assurances that trade skirmish would not danger security. Japan and the US fought trade war back in the 1980s and 1990s without much concern on security. The same was true of the Korea-US trade relations. The Korean government did not surrender to the threat of trade retaliation from the US during the trade conflict on telecommunications in the 1990s. China brought the US to the WTO for its trade complaint without fear of military retaliation. Except for rare and extreme cases, trade was not compromised under the fake excuse of security. Under the New Normal, however, trade is taken to the back seat and security is at the driver seat. In the name of security, both the US and China do not mind weaponizing trade as they like.

3. Digital Technology as “Disruptor”, not “Facilitator”

Digital technology, as embodied in 5G, AI(Artificial Intelligence), Big Data, IOT (Internet of Things), Quantum Computing and so on, heralds the game changer. The advent of 5G means new horizon in communication. For the first time, speedy communication of massive data between machine to machine without delay becomes reality. Digital technology opened a new door for the surveillance of the private, public and any by the state. Compared to other technology, digital technology possesses more security implication. While the commercial application of digital technology is assured to be boundless, its actual boundary will be determined by politics as much as economics. To be commercially viable, scalability of platform holds a key. Considering the population size, China has competitiveness when it comes to scalability. On the other hand, many global firms need to expand into China. China has been building so-called ‘Great Firewall’, which kept the US flagship companies in digital technology such as Google, Apple, Facebook and Amazon from accessing to the vast population of China. Through this protectionist policy, China has secured the time and space for its own national firms to thrive and flourish (Choi, 2019). Alibaba, Baidu, Huawei and Tencent have emerged as flagship firms of China.

The ICT played the role of “facilitator” mainly because the Ideology of the leading power wanted to make the most of the business potential of the ICT. The outcome

was the acceleration of globalization, and the expansion of GVC spreading into many different regions of the globe. Such ideological inclination was carrying the days, because the US was pushing the engagement policy toward China under the belief that China would be transformed to less authoritarian and more private sector-driven market economy. Such China engagement policy kept going as long as China embraced the rhetoric of “Peaceful Rise”, hiding its ambition for regional dominance.

Whereas the ICT in 1990s played the role of ‘facilitator’ in the expansion of GVC in East Asia, digital technology of 2010s and beyond is more likely to play the role of “disruptor”, which would wreak havoc on the existing GVC in East Asia. As analyzed in the early part of this paper, the commercial business aspect of the ICT got fully blossomed and instrumental in the establishment of truly global GVC in East Asia. The US engagement policy of China pushed security risk of the ICT to back stage. Now, under intensifying the US-China power competition, security risk of digital technology becomes more salient and weighs heavily in the mind of strategists. Policy makers from each side place high priority in containing possible negative impact of the other side’s superiority in digital technology.

Denying Huawei, a Chinese telecom system provider for 5G, access to American technology reflects such strategic effort. On May 15, 2019, the US government banned Huawei with a national security order (White House, 2019). Huawei was given temporary reprieve of 90 days. Temporary reprieve have been extended three times ever since. If this ban is fully implemented, research-development-production system nurtured by Huawei and all other companies, including major digital and ICT companies of the US, will be critically damaged and impaired with devastating implications to the effective operation of GVC in East Asia. In fact, damage is already done. Firms exposed to China have already begun to draft alternative plans.

New nexus of ideology and technology is unfolding under New Normal. With the zeitgeist of Chimerica gone, GVC built during the era, when the ideology of “trade with different political system promotes peace” ran high, is being disrupted and on the verge of being dismantled. Rise of New Normal saw the advent of nationalism, where Trump’s “make America great again” competes with Xi’s “make China great again”. In the process, the new ideology of “trade with different political system is detrimental to national security” is getting firmly rooted.

Digital technology provides historic opportunity for China to leapfrog to the advanced nations. China has been playing the game of catch-up in the ICT with limited success. The advent of Digital Transformation opens a new window for

China to get even with the US and other technology leading nations. Unlike other leading nations of which technological innovation system is driven by the private sector, China holds on to its totalitarian control system under the Communist Party dictatorship. The China system of innovation casts a strong suspicion to other competing nations.

4. Future Path of GVC in East Asia

Under New Normal, what the future holds for GVC in East Asia? In predicting the future path, it is imperative to understand that the US hardline approach to China is not exclusive to the President Trump and his administration. The dominant and prevailing view in the policy circle in Washington supports more confrontational stance against China. If China is not to be contained this time, the US may be in danger of losing the proper time to rise up to the challenge of China and its totalitarian system of surveillance state (Gingrich, 2019). Despite bitter partisan division, hardline approach to China enjoys overwhelming bipartisan support. During the first three years of Trump Presidency, the US Congress enacted anti-China legislation such as Taiwan Travel Act, reform of CFIUS, Hong Kong Human Rights and Democracy Act. Leaders of the Democratic Party complain that President Trump is not confrontational enough on China's abuse of human right in Xinjiang Uyghur and Hong Kong. During the campaign in the run-up to the Presidential election of November 2020, candidates will compete how tough they are against China.

Through the Phase 1 agreement, signed on January 2020, the US-China Trade War found the momentum to slow down fierce confrontation a bit. However, it should not be taken to mean 'peace' and 'going back to old normal'. Most contentious issues like subsidy, State Owned Enterprise (SOE), cyber theft were never agreed on. Without securing agreement on those issues, China model will continue to march on. In fact, by agreeing to Phase 1 deal, where China promised huge import buying from America, China managed to avoid the worst outcome of getting its all exports to the US under punitively high tariffs and earned precious time to accelerate its technological leapfrogging. Question is how to go there from here. Phase 2 agreement seems distant and elusive. In this perspective, the US-China power competition has just begun. It will go through many different stages. Some argue that the US-China power competition is not inevitable (Alison, 2017; Lake, 2018).

If both governments successfully manage to keep hawks at bay, argument goes, the US-China relationship may not escalate to the spiral of confrontation. With the big picture of various possibilities in mind, we envision three scenarios for the future path for GVC in East Asia. Each scenario is generic, of which derivatives of varying degrees can be further elaborated.

The first scenario is ‘Status Quo’.

This scenario is only possible when China changes its way of running economy. While preferring the change of China model, the US is of the view that it can live with China, if China comes to an agreement to change its behaviors. In order to make this condition fulfilling, the leadership of China should declare its change of system and follow through reform and open. Or the US must be successful in negotiating Phase 2 agreement with China, in which SOE, subsidy, cybersecurity and so on are effectively addressed, along with binding enforcement mechanism. Likelihood of either eventuality deems very slim, if not impossible.

The second scenario is ‘Fragmentation’.

Under this scenario, the US-China power competition continues. No Phase 2 agreement between the US and China becomes materialized. Risk and uncertainty of operating in China will drive some global firms to scale down and eventually seek their exit from China. The scope and the speed of fragmentation will be determined by the magnitude of risk and uncertainty as perceived by firms themselves and also collectively. Technology-oriented firms under heightened security scrutiny, especially the US firms, will have to overhaul and redesign their technological ecosystem, which was built under the competitive collaboration between Silicon Valley and China.

In the midst of exit from China, on the other hand, some firms and investors from East Asia may choose to remain and even enhance their presence in China. The Chinese government will not sit idle and just watch the exodus of foreign firms and investors from China without doing anything. They would come up with counter measures to retain some and attract new. Through this process of pull and push, exodus and retention, equilibrium will be made where some East Asian economies

are more connected to the US, and others are more connected to China.⁷ As a result, GVC of East Asia will become bifurcated into the two spheres: one with the US-centered and the other with China-centered. The two spheres will compete for extending its influence on East Asian economies.⁸

An extreme version of this scenario is two exclusive economic blocs which build trade and non-trade barriers between them. If this extreme case becomes fulfilling, then the world will turn into the economic cold war of the 21st century. As the cold war of the 20th century between the US and the Soviet Union divided the world into the two exclusive zones of allies and friends, the new economic cold war between the US and China would demand countries to choose where they stand.

The third scenario is the emergence of ‘New GVC’.

Under this scenario, the US-China power competition continues without resolving their fundamental differences, but somehow China successfully manages to transform from investment-driven economy to consumption-driven economy. Through this transformation, China emerges as ‘world consumer’ with the population of 1.4 billion. China replaces the US as the final destination of East Asian economies export. In this scenario, the newly emerging GVC in East Asia becomes similar to that in North America and Europe: *de facto* regional value chain.

This process will take some time to make it happen, even if the Chinese government is so determined. Global firms and investors may not be convinced to do business with China, simply because China becomes the biggest consumer market in the world. As long the party-government-market nexus in China is *de facto* *modus operandi* of the China system, they will be hesitant to make substantial transaction. Geopolitical and geoeconomic risk and uncertainty will be so high. They will carefully weigh the attraction of China as consumer against the risk and the uncertainty of China as business partner. The ball is in the court of China.

⁷ ‘Connected’ means more trade and investment concentration.

⁸ For this reason, the Second scenario may be termed as “bifurcation”

VI. DISCUSSION AND CONCLUSION

This paper provides the framework of Ideology-Technology-Institution nexus in the analysis of the evolution and the future trajectory of GVC in East Asia. Notwithstanding the “institutional deficit” vis-à-vis North America and Europe, GVC in East Asia has been enjoying a remarkable success. Conventional wisdom has it that political leadership and pragmatism, overcoming political differences, drove the astonishing achievement. We argue that the conventional perspective focusing on ideology as the dominant determinant of an institution is insufficient to understand the global expansion of the production chains since the 1990s. A missing piece in the link is technology. But for the ICT Revolution in the 1990s, the GVC in East Asia would not have developed as it is today.

Existing literature on GVC is mainly economic analysis, while assuming that “ideology” to the background. Now, with the outbreak of the US-China power competition, this framework is getting more and more inappropriate. On the other hand, traditional political economy approach emphasized the role played by ideology, under the name of ‘security-trade nexus’, while the role played by ‘technology’ is yet to be fully analyzed and understood.⁹ This paper is motivated to bridge this methodological gap. Choi (2018) was the first attempt to establish ‘Ideology-Technology-Institution’ nexus, where technology itself plays as independent variable to affect institution. Mindful of dual aspect of technology, this paper presents more sophisticated and realistic framework of ‘Ideology-Technology-Institution’ nexus, where technology affects institution through its interaction with ideology.

Dynamics of interplay between ideology and technology affects the survival, strengthening or unraveling of an existing institution. ICT of the 1990s played a role of “facilitator” in shaping the global deployment of tasks in many different places in East Asia and the US, from Shenzhen to Silicon Valley, and from Suwon to Seattle. Despite ITC’s significant implication to national defense, the US engagement policy of China and China’s avowed ‘peaceful rise’ enabled ITC fully exploit its commercial potential. The outcome was GVC of East Asia in which China plays ‘factory for final assembly’ and the US plays ‘the largest consumer’.

⁹ For instance, Aggarwal and Govella (2013).

The rise of New Normal pushes the existing GVC in East Asia to unprecedented challenge. The sustainability of GVC in East Asia is thrown into confusion and uncertainty. The paper presents how new nexus of Ideology-Technology-Institution is disrupting the GVC of East Asia. Under the rise of ‘New Normal’, interplay between ideology and technology got new twist. With the rise of assertive China continues under its ambition to replace the US as a new power in East Asia, the US under the new leadership of Trump adopted hardline approach to contain China. In this contest for power, the existing GVC of East Asia is confronting the existential crisis. Digital technology, which is driving so-called “the Fourth Industrial Revolution”, is disrupting GVC of East Asia. If disruption goes unchecked, then GVC of East Asia may risk the danger of fragmentation.

The role of technology as ‘disruptor’ is sharp contrast to some study of GVC. In Baldwin (2016), ICT plays the role of “facilitator” for the “2nd unbundling” of GVC. In his framework, “Ideology” is outside of the model, assuming that Ideology takes side with “Technology”, whenever it advances: Ideology would not stand in the way of Technology. Hence, no tension rises between security aspect and commercial aspect of technology. This paper, on the other hand, makes explicit the dual aspect of technology and analyzes how the rise of “New Normal” affects the existing GVC of East Asia. As the paper argues, ICT plays the role of “disruptor” under this era of New Normal.

This paper does not argue that Baldwin’s analysis is flawed, but unveils rather neglected side of GVC. Baldwin’s world is prior to 2016, prior to Brexit and election of Trump, and prior to the outbreak of US-China power competition. In the world of Baldwin, “New Normal” has yet to take place. His argument was based on the implicit assumption that the US engagement with China would continue. Possibility of fragmentation, bifurcation, decoupling and so on were not in his world. Using the term of this paper, Ideology in Baldwin’s framework was “trade promotes peace”. What is happening now is “security at the expense of trade”. In the world of Baldwin, there existed firewall between security and trade. The world has moved on to New Normal, where trade is compromised in the name of security

Role of technology as ‘disruptor’ was also recognized by the analysis of OECD (2017), which identified digitalization as game changer for the future evolution of GVC. Such recognition was based on the technological capability of digitalization. For instance, smart factory, 3D printing and smart city would return works and jobs back to advanced nations from developing countries, since low wage would

not be sufficient attraction any longer. Surely, such an impact would be enormous. This treatment of technology as independent variable is the same perspective of Choi (2018). This paper offers more elaborated and realistic course of actions, where technology impacts GVC through its influence on leading nations’ ideology.

New Normal is not temporary. It is likely to last for a considerable time in the future, because the US-China power competition is the main driver of New Normal. Until one country wins decisively or both agree to a peaceful coexistence, transition to the new equilibrium will continue. Under the New Normal, GVC in East Asia will undergo transformation, depending on the future course of action taken by the two principal actors. This paper presented three scenarios for the future trajectory of GVC in East Asia: Status Quo, Fragmentation and New GVC.

Most analysis and discussion of trade policy and its impact on economic activities have assumed away the possible externality of security on trade. This practice was not consequential, as long as the leading superpower led the global economy under the ideology of “free and open trade.” Allies could go to trade war without having consequences on security. Until the early 21st century, this way of analysis seemed innocuous. Not any longer. With the emergence of the US-China power competition, such a modelling would lead to incomplete and inaccurate analysis, and misguided policy recommendations. This paper attempts to make security-trade nexus explicit. by modelling the dynamics of interplay between technology and ideology.

Ideology-Technology-Institution nexus as developed in this paper offers a promising avenue for further research in the general theory of institution formation in international affairs. In the interplay between ideology and technology, we highlighted the impact of ideology on technology. This approach presumes that ideology is imposed from the outside as an exogenous variable. Further research may relax this assumption to explore the impact of technology on ideology. In the actual discourse of policy formation and adaptation, the government is not a single-minded player at all. Ideology of the government is, in fact, a compromise among multiple stakeholders, including government agencies, companies with different line of business, consumer, media and civil society with diverse political inclination. These players have their own preference towards technology. Hence, they will seek the ways and means to advocate their interests. Seen in this line, the direction of impact flows from technology to ideology, as much as it flows the other way around.

For instance, even though the US government under Trump Presidency decided to deny Huawei's access to the key American technologies, such a hard-nosed approach does not enjoy complete consensus among stakeholders. Firms negatively affected by this decision are opposed to the wide net of full-blown ban against the Chinese company. Successive reprieve, despite the announcement of ban, indicates such a subtle compromise. This reasoning implies that the presumption of taking ideology as given may be a bit strict. Relaxation of this presumption will provide much rich dynamics between ideology and technology, and lead us to the better understanding of institution in international affairs.

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