

2. The Future of the US-ROK Economic Partnership

Dr. Miyeon Oh, *Director and Senior Fellow, Asia Security Initiative, Scowcroft Center for Strategy and Security, Atlantic Council*

Dr. Robert Dohner, *Nonresident Senior Fellow, Asia Security Initiative, Scowcroft Center for Strategy and Security, Atlantic Council*

Introduction

The alliance between the United States and Republic of Korea (ROK) serves as the foundation for peace and prosperity on the Korean peninsula and is the linchpin for security and stability throughout the region.⁵⁶ Over its nearly seventy-year history, the alliance was not only crucial to defending Republic of Korea during the Korean War but also facilitated the industrialization and democratization of The Republic of Korea. While the North Korean nuclear threat has long dominated discussions of the alliance, the breadth and depth of the bilateral relationship extend beyond security. The trade and economic partnership between these two countries remains of fundamental importance in its own right, as a key pillar of the alliance relationship, because it underpins the strength of the overall alliance.

Economic relations between The Republic of Korea and the United States are extensive and deep. The Republic of Korea is the world's tenth largest economy,⁵⁷ a member of the Group of Twenty (G20), and is the United States' sixth largest trading partner,⁵⁸ with extensive purchases of US mineral fuels (\$13 billion), machinery (\$12.2 billion), optical and medical instruments (\$3.5 billion), aircraft (\$2.5 billion), and a variety of agricultural products (\$7.6 billion).⁵⁹ The United States is the Republic of Korea's second largest trading partner, with large exports to the United States of vehicles (\$21 billion), electrical and non-electrical machinery (\$29 billion), and plastics (\$2.9 billion).⁶⁰

The bilateral investment relationship is also robust. The United States is the second largest (after Japan) foreign direct investor in the Republic of Korea, with a total foreign direct investment (FDI) stock of \$42 billion at the end of 2018.⁶¹ More ROK outward FDI has gone to the United States than to any other country, with a cumulative total of \$57.6 billion at end-2018.⁶² ROK companies have invested or have committed to invest billions of dollars in the United States over the last two years (see Table 1). Trade and investment between the Republic of Korea and the United States support an estimated 400,000 American workers.⁶³

Table 1. Examples of Recent ROK investments in the United States

LG Chem is committed to invest \$2.3 billion to build an electric vehicle battery plant jointly with General Motors in Ohio. ⁶⁴
Lotte Chemical completed the construction of a \$3.1 billion ethylene plant in Louisiana in 2019, with its cumulative investments reaching \$4 billion in production facilities and other areas. ⁶⁵
Hyundai Motor Group and Aptiv announced in September 2019 a \$4 billion autonomous driving joint venture in which the firms will each have a 50 percent stake. ⁶⁶

56 Harry Harris, "Speech on 'The US-ROK Alliance' at US Korea Business Council Luncheon," speech, US Embassy and Consulate in the Republic of Korea, October 11, 2019, <https://tinyurl.com/h45dr2ck>.

57 "S. Korea's GDP ranks 10th worldwide in 2019," Yonhap News Agency, May 27, 2020, <https://tinyurl.com/1lt7tsf8>.

58 "US International Trade in Goods and Services - Annual Revision," US Census Bureau Foreign Trade Division, 2019, <https://tinyurl.com/37r4kybr>.

59 US Census Bureau, US Trade Online, State Export Data by HS Classification, 2019, <https://usatrade.census.gov/>. "Korea," Office of the United States Trade Representative, accessed November 2020, <https://tinyurl.com/yw2mv7b4>.

60 "Korea," Office of the United States Trade Representative.

61 Foreign Direct Investment (FDI): South Korea, SelectUSA, 2018, <https://www.selectusa.gov/servlet/servlet.FileDownload?file=015t0000000LKNs>.

62 "OECD International Direct Investment Statistics (database)," OECD iLibrary, accessed November 2020, <https://doi.org/10.1787/idi-data-en>.

63 "Samsung on Representing the Value of a Strong US-South Korean Relationship," Samsung Newsroom, September 17, 2018, <https://tinyurl.com/7m4sunuv>.

64 Paul Lienert, "GM, LG Chem to build \$2.3 billion electric vehicle battery plant in Ohio," Reuters, December 4, 2019, <https://tinyurl.com/1ejqveos>

65 "Lotte invests cumulative \$4 bln in US," Yonhap News Agency, May 14, 2019, <https://en.yna.co.kr/view/AEN20190514001000320>.

66 Anmar Frangoul, "Hyundai unveils plan for \$35 billion investment in driving tech," CNBC, October 17, 2019, <https://tinyurl.com/7pu2ycrb>.

Samsung completed a \$8 billion acquisition of HARMAN, which was the largest foreign investment ever made by a ROK company in 2016. In the same year, it also announced a new \$380 million home appliance manufacturing facility in South Carolina and a \$1-billion expansion of Samsung Austin Semiconductor (SAS) in Austin, Texas.⁶⁷

The two countries have had their share of trade and investment disputes over the years, covering issues such as market access, investment barriers, regulatory barriers, and domestic standards. However, the United States and the Republic of Korea took a significant step to deepen the economic and trade relationship by negotiating (with considerable difficulty and over a period of six years) the US-ROK Free Trade Agreement (KORUS), which took effect in March 2012, and established the Republic of Korea as the largest US free trade agreement (FTA) partner outside of North America.

The Republic of Korea reacted quickly to the incoming Trump administration's aggressive trade policy and suspicion of trade agreements including potential withdrawal from KORUS,⁶⁸ and successfully renegotiated a revised KORUS in 2018, which was enacted in January 2019. The amendment and modification process focused on limiting ROK steel exports to the United States to 70 percent of the annual average of the last three years (2.68 million tons) and extending the US tariffs on ROK trucks for another twenty years until 2041.⁶⁹ In parallel to the revised KORUS agreement, the US and ROK governments also reached a deal on US steel import quotas in response to a Section 232 investigation, a trade enforcement provision which allows the US president to restrict imports on national security grounds.⁷⁰ There are pending 232 investigations on auto and auto parts, and the Republic of Korea will double its quota on imports of US automobiles that meet US safety standards to approximately 50,000 cars per manufacturer per year.⁷¹

With the amended KORUS and changing economic landscape in the Indo-Pacific, the two countries should explore areas to further advance and strengthen economic cooperation. The region is now facing a new geopolitical and geoeconomic environment characterized by three major elements: 1) US-China strategic competition and potential decoupling; 2) a changed view of the value of globalization and trade expansion; and 3) new technological

advancements that have changed conceptions of national security. US-China tensions have also intensified in response to the outbreak of the COVID-19 pandemic, and global trends toward increasing protectionism and de-globalization have accelerated in response to disrupted supply chains for goods and services.

This chapter identifies areas of collaboration between the United States and the Republic of Korea under this changing geopolitical environment and post-COVID-19 world first by examining opportunities and challenges of their economic relationship, and then by offering practical policy recommendations.

Geopolitical and Geoeconomic Trends Shaping Prospects for the US-ROK Economic Partnership

In order to identify areas to advance and broaden economic cooperation, it is important to understand the major opportunities and challenges that the United States and the Republic of Korea face, given the changing economic relationship between the two countries over the past three decades and the significant changes in the world economy and global strategic relations.

As a result of its export-oriented model of growth, the ROK economy at present is heavily dependent on global trade. Rapid and sustained economic growth that began in the early 1960s has transformed the country into one of the most successful in the world. The Republic of Korea pursued what came to be known as the East Asian model for rapid growth and industrialization based on open trade policies and exports, which started with low-skilled goods but moved over time into increasingly sophisticated products.⁷² ROK industrialization was shaped by, and benefitted from, its presence in East Asia and the rapid growth and development of production networks in that region.

67 "Samsung on Representing the Value," *Samsung Newsroom*.

68 Steve Holland, "Trump hints at withdrawal from US-South Korea free trade deal," Reuters, September 2, 2017, <https://www.reuters.com/article/us-usa-trump-trade-korea/trump-hints-at-withdrawal-from-u-s-south-korea-free-trade-deal-idUSKCN1BD0TB>.

69 Victor Cha, "KORUS Revision: Not the Worst Outcome," Korea Chair Snapshot, Center for Strategic and International Studies, March 26, 2018, <https://www.csis.org/analysis/korus-revision-not-worst-outcome>.

70 Wendy Cutler and Hyemin Lee, *Advancing the US-Korea Economic Agenda*, Asia Society Policy Institute, January 2019, <https://asiasociety.org/policy-institute/advancing-us-korea-economic-agenda>.

71 Fact Sheet on US-Korea Free Trade Agreement Outcomes, Office of the United States Trade Representative, 2018, <https://ustr.gov/about-us/policy-offices/press-office/fact-sheets/2018/september/fact-sheet-us-korea-free-trade>.

72 There are many studies of Korea's period of rapid economic growth, many of them now dated. For a recent analysis, see: Ana Maria Santacreu, "How Did South Korea's Economy Develop So Quickly?," Federal Reserve Bank of San Francisco, March 20, 2018, <https://www.stlouisfed.org/on-the-economy/2018/march/how-south-korea-economy-develop-quickly>.

The United States no longer dominates the Republic of Korea's external market the way it did in the 1980s, when it absorbed over a third of ROK exports.⁷³ Since the 1980s, ROK conglomerates have become a major part of supply chains across East Asia, embedding the ROK economy into a regional supply chain network in which China plays a huge role. Therefore, while exports and participation in global production networks was a tremendous boon to ROK economic growth, it has made the ROK economy both sensitive and vulnerable to external events, which has constrained the Republic of Korea's policy choices.

This chapter identifies the following factors that have driven major changes in the economic relationship of the two countries. First, China has emerged as the Republic of Korea's largest trade partner and the largest market for ROK overseas sales. One of the most serious challenges is the dilemma that the Republic of Korea faces with the growing strategic rivalry between the United States and China, as well as the accelerating steps on both sides to disengage and decouple their two economies. This dynamic also includes growing protectionist pressures and skepticism about globalization in the United States that create significant challenges to the Republic of Korea, which remains deeply involved and heavily dependent on trade. Second, the Republic of Korea is deeply embedded in global supply chains, and is sensitive to any policies or events that alter geographic patterns of production. Third, the Republic of Korea has now become a major developer of cutting-edge technologies and a major supplier of information and communications technology (ICT) products and components, and thus is exposed to technological rivalries and technology decoupling of its major trading partners.

All of these factors have created major challenges, but also opportunities, for the Republic of Korea, the United States, and the US-ROK partnership. This chapter reviews these challenges and opportunities and provides policy recommendations in the sections below. The clear implication is the huge value of the two countries working cooperatively as they both face fundamental upheavals in the global economic and strategic environment.

China as Korea's largest trading partner

Initially, ROK trade was heavily oriented towards the United States and Japan, but, starting in the 1990s, the share of ROK exports going to China began to grow rapidly. China is now the Republic of Korea's largest trading partner and largest external market, taking 25.9 percent of ROK exports in 2018, followed by the United States at 11.9 percent.⁷⁴ The Republic of Korea has a particularly high concentration of trade with China; among major economies, only Australia has comparable dependence on the Chinese market at 32.6 percent.⁷⁵ Gross trade figures overstate the importance of China, since much of ROK exports to China are incorporated in products that are sold in third markets. Adjusting for value-added content and the ultimate destination of exports incorporated in supply chains reduces the Republic of Korea's apparent dependence on exports to China. But even after this correction, China absorbed 25 percent of ROK export value-added in 2015, followed by the United States at 18 percent.⁷⁶ The Republic of Korea's export concentration on these two markets is high; the next on the list is Japan, at only 5.7 percent.⁷⁷

ROK FDI is also heavily concentrated in the United States and China. China is the second largest destination for outward ROK FDI, with a total stock of \$77.6 billion in 2018 as compared to the \$90.6 billion total stock of ROK FDI in the United States.⁷⁸ China has become a major source of revenue for ROK firms in automobiles, cosmetics, and other consumer goods. The Republic of Korea's outward FDI is concentrated on the United States and China, compared to the third largest stock of ROK FDI in Vietnam as of \$20.4 billion.

In addition to the fact that the Republic of Korea's exports are heavily concentrated towards two countries that are now strategic rivals, the Republic of Korea is also very heavily dependent on exports for growth. Exports are 43 percent of ROK GDP, the highest in the Organisation for Economic Co-operation and Development (OECD) along with Germany. In addition, since 1998, the Republic of Korea has maintained large, persistent current account surpluses, as domestic demand (earnings from domestic sales) provides only a weak impetus to growth. Overall, 31 percent of ROK economic activity (domestic value-added) in 2015

73 Marcus Noland, "The Strategic Importance of US-Korea Economic Relations," Peterson Institute of International Economics: International Economics Policy Briefs, PB 03-6, May 2003, <https://www.piie.com/sites/default/files/publications/pb/pb03-6.pdf>.

74 Trade in Value Added: Korea, Organisation for Economic Co-operation and Development (OECD), December 2018, <https://www.oecd.org/industry/ind/TIVA-2018-Korea.pdf>; "South Korea," Organisation for Economic Co-operation and Development (OECD), <https://oec.world/en/profile/country/kor/>.

75 Direction of Trade Statistics, International Monetary Fund (IMF), data for 2017, <https://data.imf.org/?sk=9d6028d4-f14a-464c-a2f2-59b2cd424b85>; Frances Mao, "How reliant is Australia on China?," BBC News, June 17, 2020, <https://www.bbc.com/news/world-australia-52915879>.

76 Trade in Value Added: Korea, Organisation for Economic Co-operation and Development (OECD).

77 Ibid.

78 "OECD International Direct Investment Statistics (database)," Organisation for Economic Co-operation and Development (OECD), accessed November 2020, <https://doi.org/10.1787/idi-data-en>. The next largest stock of Korean FDI was in Vietnam, 20.4 billion, or 5.3 percent of the total. In contrast, China's stock of FDI in Korea in 2018 was only \$8.1 billion, under 4 percent of total inward FDI in Korea.

was driven by consumption from abroad. For the ICT and electronics industry, 78 percent of domestic value added came from overseas sales. For motor vehicles, it was 70 percent, and 60 percent of manufacturing activity as a whole depended on sales abroad.⁷⁹ Not only is the ROK economy dependent on rising exports to maintain growth, it is also particularly vulnerable to trade slumps during global economic downturns. In 2020, as the global economy dealt with a severe COVID-19 recession, the World Trade Organization estimated that global trade would fall by somewhere between 13 and 32 percent.⁸⁰ Even as the Republic of Korea has been relatively successful in dealing with COVID-19, the pandemic's impact on global trade will exact a very high cost on the Republic of Korea's economy.⁸¹

Heavy reliance on global trade has made the ROK economy vulnerable to trade policy actions or economic sanction by other countries, and the Republic of Korea has been subject to such actions by several of its major trading partners. In 2018, The Trump administration imposed safeguard tariffs on washing machines, and increased tariffs on steel on national security grounds. These measures applied to the Republic of Korea, despite the KORUS free trade agreement.⁸² The Republic of Korea negotiated an exemption from the US steel tariff increase in exchange for a ceiling on shipments to the United States.⁸³ In addition, there is a pending decision on additional US national security tariff increases on motor vehicles and parts, although this US proposal now appears to be shelved.⁸⁴

In 2016, the Republic of Korea was also hit by sanctions from China after the ROK decision to deploy the US Terminal High Altitude Area Defense (THAAD) system. China responded by effectively shutting down the Chinese operations of ROK companies including Lotte, and banned Chinese tour groups from visiting the Republic of Korea. As of 2019, Lotte was reportedly preparing to exit from China, reeling from the aftereffects of the government shutdowns

and the ensuing nationalist boycotts.⁸⁵ Auto sales by Hyundai and Kia in the Chinese market fell by almost half in 2017.⁸⁶

More recently in 2019, Japan imposed export restrictions on the Republic of Korea by removing it from a white list of countries to which Japanese exports receive automatic approval. This endangered the secure supply of three critical materials for making semiconductors that major ROK manufacturers rely on, with potential implications for the global semiconductor supply chains. More specifically, the Japanese government's delay in granting permission to export liquid hydrogen fluoride, a key component for semiconductor production, forced ROK companies including SK Hynix, Samsung Electronics, and LG Displays to switch to suppliers in the Republic Korea that made these products at a lower quality.⁸⁷

The Republic of Korea is deeply embedded in global supply chains

In addition to its geographic concentration, ROK trade is heavily embedded in global supply chains, particularly in the Asia-Pacific production networks that extend from design, to components, production, and sales being sourced throughout the region. Almost 31 percent of the value of ROK exports in 2016 was composed of imported components, which was the highest among any G20 country until 2014.⁸⁸ The ICT, motor vehicles, electronics, and electrical equipment industries relied on imported inputs for more than 60 percent of the value of their exports.⁸⁹ The Republic of Korea's heavy reliance on the global economic network means that it is especially vulnerable to the manifold threats that the global economy now faces. Disruptions in supply chains from natural disasters, pandemics like COVID-19, or external changes in trade policy such as US tariffs on imports from China will have a direct effect on ROK production further back in the supply chain.

79 Trade in Value Added: Korea, Organisation for Economic Co-operation and Development (OECD).

80 "Trade set to plunge as COVID-19 pandemic upends global economy," World Trade Organization, April 8, 2020, <https://tinyurl.com/9btrsted>.

81 The International Monetary Fund (IMF) adjusted its projected 2020 economic growth rate for Korea to -1.2 percent, while global rate projected at -3 percent, reflecting impact of the COVID-19 pandemic. Korea expected to take smaller impact than other advanced economies, as it did not implement national lockdown. See: "Republic of Korea," International Monetary Fund, accessed November 2020, <https://www.imf.org/en/Countries/KOR>.

82 Chad P. Bown and Melina Kolb, "Trump's Trade War Timeline: An Up-to-Date Guide," Peterson Institute for International Economics, March 13, 2020, <https://www.piie.com/blogs/trade-investment-policy-watch/trump-trade-war-china-date-guide>.

83 Bown and Kolb, "Trump's Trade War Timeline."

84 A US Department of Commerce report on February 17, 2019, recommended "actions to adjust automotive imports" to protect national security. President Trump asked USTR to negotiate agreements with Japan, the EU, and other countries by November 2019, while maintaining the threat to raise tariffs if negotiations failed. US auto companies strongly opposed increases in US tariffs, and, as of May 2020, no further action has been taken. See: David Shepardson, "Automakers expect White House to delay decision on auto tariffs: sources," Reuters, May 8, 2019, <https://tinyurl.com/ytub3lkc>.

85 "South Korea's Lotte seeks to exit China after investing \$9.6 billion, as Thaad fallout ensues," Straits Times, March 13, 2019, <https://tinyurl.com/1mhowojc>.

86 "South Korean companies suffering heavy losses due to THAAD retaliation," Hankyoreh, September 17, 2017, <https://tinyurl.com/ykmbfpy5>.

87 Young-ho Jung, "Nikkei, II Suchulgyujee Samseong LG Daechegongjeong Gaebal...Ilbon Tagyeok" [Nikkei, Samsung develops substitute production capabilities due to Japan's export controls...Hurts Japan], *Hanguk Gyeongjae*, May 20, 2019, <https://tinyurl.com/28lrjuau>.

88 OECD, Trade in Value Added: Korea.

89 Ibid.

Global supply chains and the firms active in them are subject to four types of risk. The first is threat of disruption from natural disasters such as the Japanese tsunami of 2011, the Thai floods of 2011, or the COVID-19 pandemic. The pandemic has already led to widespread demands for greater supply chain resiliency, as well as many calls for localization of production lines, particularly for medical supplies and equipment.

The second risk is from increases in tariffs imposed for protection of domestic industry or as a negotiating tool. US tariffs on imports from China increased in stages and were threatened in greater amounts that have so far been applied. Even after the US Phase I deal with China, US tariffs will have increased on almost two-thirds of total imports from China, and the average US tariff rate on Chinese imports has risen to 19.3 percent, from 3.0 percent at the beginning of 2018.⁹⁰ About 30 percent of China's imports of intermediate goods, including from the Republic of Korea, are incorporated into Chinese exports to third markets, including the United States. ROK producers, therefore, have been directly affected by the US-China trade dispute.⁹¹

The third risk is that products that flow through supply chains may be compromised along the way, either through insertion of counterfeit products or through malicious hardware components and software that allows for exercise of control, malfunction, or interception of communications for espionage or theft. While supply chain security has been a relatively long-standing issue in pharmaceuticals, ICT supply chains are now increasingly under scrutiny and suspicion. The US government has had several initiatives with industry to enhance supply chain security, but the US Commerce Department took a huge step in its announcement of proposed regulations to address ICT product and services transactions that pose national security risks.⁹² The coverage of the proposed regulations is broad and the Commerce Department would have wide authority to prohibit, restrict, or unwind transactions.⁹³ The Commerce Department issued interim final regulations on January 14, 2021.⁹⁴ These regulations describe six sets of products and

services that are subject to review, provide additional detail on the procedures that the Department would follow in reviewing transactions, and list six foreign adversaries whose potential control over transactions would make them subject to review.⁹⁵

At the same time, there were broader discussions within the Trump administration on limiting or excluding China from both US and global supply chains. Along with its reshoring plan, the administration created the "Economic Prosperity Network" initiative that aimed to restructure global supply chains and reduce their reliance on China, by working with allies and partners. While this new policy drive is under discussion between the governments of the Republic of Korea and the United States, the final outcome is uncertain given opposition from US firms whose production would be disrupted.⁹⁶

The fourth and related source of risk and uncertainty comes from US policy initially designed to sanction and limit the activities of China's Huawei Technologies, which has developed into a broader policy of decoupling the use and development of US technology from China. Huawei is a major international supplier of communications infrastructure as well as cellphones and other equipment. The Trump administration sought to discourage allies and other countries from purchasing and installing Huawei equipment, as well as selling their components or software to Huawei. In May 2019, the administration added Huawei to the Commerce Department Entity List and restricted US firms from supplying components or software to the firm, with a limited grace period. The application of US export controls against Huawei was strengthened in May 2020 by restricting firms outside the United States that use US technology or software from selling to Huawei.

The incoming Biden administration has said that it will conduct a review of US China policy, which could affect the implementation of Trump administration initiatives that have gone to final regulations. However early indications show

90 Chad Brown, "Phase One China Deal: Steep Tariffs Are the New Normal," Peterson Institute of International Economics, December 19, 2019, <https://www.piiie.com/blogs/trade-and-investment-policy-watch/phase-one-china-deal-steep-tariffs-are-new-normal>.

91 Trade in Value Added: China, Organisation for Economic Co-operation and Development (OECD), December 2018, <https://www.oecd.org/industry/ind/TIVA-2018-China.pdf>.

92 Securing the Information and Communications Technology and Services Supply Chain, US Department of Commerce, November 27, 2019, <https://www.federalregister.gov/documents/2019/11/27/2019-25554/securing-the-information-and-communications-technology-and-services-supply-chain>.

93 Tamer A. Soliman, et al., "US Commerce Department Proposes Sweeping New Rules for National Security Review of US Information and Communications Technology or Services Transactions," Mayer Brown, December 2, 2019, <https://www.mayerbrown.com/en/perspectives-events/publications/2019/12/us-department-of-commerce-proposes-rule-for-securing-the-nations-information-and-communications-technology-and-services-supply-chain>.

94 Text of a Notice on the Continuation of the National Emergency on Securing the Information and Communications Technology and Services Supply Chain, the White House, May 13, 2020, <https://www.whitehouse.gov/briefings-statements/text-notice-continuation-national-emergency-securing-information-communications-technology-services-supply-chain/>. US Commerce Department, "Commerce Department Issues Interim Rule to Secure the ICTS Supply Chain" <https://www.commerce.gov/news/press-releases/2021/01/commerce-department-issues-interim-rule-secure-icts-supply-chain>

95 See Covington and Burling, "Department of Commerce Releases Interim Final Rule to Implement the Information and Communications Technology Supply Chain Executive Order" Jan 21, 2021. <https://www.lexology.com/library/detail.aspx?g=6382285e-d1f8-4341-ba09-5480f664649a>

96 Humeyra Pamuk and Andrea Shalal, "Trump administration pushing to rip global supply chains from China: officials," Reuters, May 4, 2020, <https://www.reuters.com/article/us-health-coronavirus-usa-china/trump-administration-pushing-to-rip-global-supply-chains-from-china-officials-idUSKBN22G0BZ>.

that the new administration will likely continue to take a tough line on China policy in issue-areas that are key to US national interests such as emerging technologies that are driving the future, as well as values and norms that are foundational to the system of democracy.⁹⁷

In addition to economic considerations, national security policy has become a crucial factor in firms' decisions to do business with other firms and countries. The decision by the Taiwan Semiconductor Manufacturing Company (TSMC) to stop supplying advanced semiconductors to Huawei after the May 2020 restrictions was an especially difficult decision, as Huawei has been its number two customer.⁹⁸ In addition to extending export control coverage, TSMC announced on May 15, 2020 that it will build a \$12 billion plant in Arizona by 2024 to relocate some of its manufacturing activity to the United States.⁹⁹ US pressure on both US and foreign firms to localize production in the United States is likely to continue. Although Samsung does not have the contract manufacturing capacity of TSMC, it does plan to expand fabrication capacity. As one of the potential alternatives to TSMC, Samsung is likely to face US pressure to cut off supplies to Huawei. SK Hynix has also sought new means of decreasing its dependence on foreign suppliers, particularly Japanese imports, including three new partnerships with ROK firms to work together to develop chips over the next two years.¹⁰⁰

Increasing ROK technological sophistication

Another major change in the US-ROK economic partnership is the rapid advance of ROK technological capability that now makes the Republic of Korea central to issues of technological development, technology transfer, and supply of technology-intensive goods and services. A sharp increase in R&D expenditure by ROK firms, as well as an increasing emphasis of government policy on education and technological development, has made the Republic of Korea one

of the global leaders in these new emerging technologies, along with the United States, Japan, and China.¹⁰¹ After a period of rapid growth that began in the early 2000s, the Republic of Korea now has the highest share of R&D expenditure within the OECD.¹⁰² The Republic of Korea is now a major contributor to the development of ICT technologies, accounting for between 10 and 46 percent of patenting activity in the twenty cutting edge technologies identified by the OECD.¹⁰³ In addition, firms headquartered in the Republic of Korea accounted for 20 percent of all artificial intelligence (AI) related innovation in 2012–2014 (second behind Japan at 32 percent, but higher than in the United States at 19 percent).¹⁰⁴

The economic spillover of the strategic rivalry between the United States and China has shifted emphasis from goods trade to technology flows, reflecting the greatly increased overlap between commercial and national security technology. The United States has objected to several aspects of Chinese industrial policy, in particular the use of forced technology transfer by firms operating in China.¹⁰⁵ US export controls and inward foreign direct investment review have been strengthened to reduce the flow of critical foundational technologies and emerging technologies. And, as described above, the United States has also taken a series of measures to block the flow of US technology and hardware and software components to China's Huawei Technologies.

Policy Recommendations for Areas of US-ROK Strategic Cooperation

As noted above, the ROK economy is highly reliant on exports, focused on China and the United States, which creates a structural vulnerability for the Republic of Korea. The Republic of Korea has been exposed to external pressure on a wide range of issues as tensions between the United States and China intensify. However, this is not just

97 For instance, Anthony Blinken, in his confirmation hearing for Secretary of State said, "I also believe that President Trump was right in taking a tougher approach to China...I disagree very much with the way that he went about it in a number of areas, but the basic principle was the right one, and I think that's actually helpful to our foreign policy."

98 Cheng Ting-Fang and Lauly Li, "TSMC halts new Huawei orders after US tightens restrictions," *Nikkei Asian Review*, May 18, 2020, <https://asia.nikkei.com/Spotlight/Huawei-crackdown/TSMC-halts-new-Huawei-orders-after-US-tightens-restrictions>.

99 Karen Hao, "A new \$12 billion US chip plant sounds like a win for Trump. Not quite," *MIT Technology Review*, May 19, 2020, <https://www.technologyreview.com/2020/05/19/1001902/tsmc-chip-plant-and-huawei-export-ban-not-trump-win/>.

100 Song Su-hyun, "SK hynix to support 3 new partners for chip industry's localization," *the Korea Herald*, June 30, 2020, <http://www.koreaherald.com/view.php?ud=20200630000698>.

101 Taiwan is also one of the global leaders in artificial intelligence related activities. Together these top five developed over 70 percent of the top twenty cutting edge ICT technologies between 2012-2015 (OECD, *OECD Science, Technology and Industry Scoreboard 2017 – The Digital Transformation*, page 13).

102 OECD "Highlights from the OECD Science, Technology and Industry Scoreboard 2017 - The Digital Transformation: Korea" November 2017, figure 1.14.

103 *Ibid.*, page 1. Korea's share was particularly high in control arrangements, plural semiconductor devices, and organic material devices. See: OECD, *OECD Science, Technology and Industry Scoreboard 2017 – The Digital Transformation*, figure 5.

104 *Ibid.*, figure 1.25.

105 Section 301 Report into China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation, Office of the United States Trade Representative, March 27, 2018, <https://ustr.gov/about-us/policy-offices/press-office/press-releases/2018/march/section-301-report-chinas-acts>.

a problem for the Republic of Korea, but also for the United States, since it creates a wedge that can weaken the alliance. This section offers specific and actionable policy recommendations that can reduce the structural vulnerability by strengthening and broadening the scope of economic cooperation between the two countries. It is important to note that these are unlikely to alter the reality that the Republic of Korea's dependence on China's market will both remain high and increase over time. Therefore, it is important that the United States incorporate this ROK vulnerability into its strategic thinking regarding the alliance, and take steps, where possible, to diffuse rather than intensify the stresses that the Republic of Korea faces.

Trade

The United States should revisit multilateral institutions and approaches, in trade and in other areas, including by reopening discussions on joining the Trans-Pacific Partnership (now the Comprehensive and Progressive Agreement for a Trans-Pacific Partnership (CPTPP)). The United States, the Republic of Korea, and other allies should establish an economic security alliance that collectively addresses the geopolitical challenges posed by new global threats and new commercial technologies.¹⁰⁶

The Trump administration's preference for bilateral negotiations and its suspicion of multilateral institutions produced at best modest gains in the trade sphere. This approach has damaged Washington's relationship with US allies and partners, as well as its standing as a global leader. It also has provided opportunities for US rivals like China to not only play off members of the alliance but also initiate their own multilateral trade initiatives, including the Regional Comprehensive Economic Partnership (RCEP), to further integrate Indo-Pacific countries into its sphere of influence. Finally, the United States needs a multilateral approach, especially cooperation from its allies and partners to prevent leakage of technologies with national security implications, cybersecurity, and pandemic response.

Likewise, ***the Republic of Korea should begin negotiations to join the CPTPP.*** While the Republic of Korea considered becoming a member of TPP in 2013, it missed the opportunity to join as a founding member mostly due to its relationship with China. President Moon said that the Republic of Korea is considering joining CPTPP right after the country signed RCEP in December 2020. While the Republic of Korea already has bilateral free trade agreements with most of the current CPTPP members, joining the CPTPP would greatly increase its FTA coverage by adding Japan as well

as Malaysia, and would assure the Republic of Korea participates in an agreement that is likely to define the principles of trade in the Indo-Pacific region.

Given the importance of trade for ROK economic growth, the Republic of Korea has a strong interest in maintaining the international trading order and avoiding trade protectionism. It also has a strong interest in keeping major trading powers, including the United States, involved. The latter involves directly addressing shortcomings that have been identified in current rules, including inadequate rules regarding domestic subsidies, state-owned enterprises, and policies regarding technology transfer, as well as complaints regarding WTO dispute settlement. As many of these issues are tied up in current US-China disputes, this presents tricky problems for ROK trade diplomacy. ***The Republic of Korea should join current multi-nation efforts such as the Ottawa Group and the US-Japan-EU initiative on WTO reform. The United States should support the Republic of Korea's efforts to reform international rules and institutions and avoid forcing the Republic of Korea to make explicit, public choices in disputes between the United States and China.***

The United States should clearly describe what changes should be made in the global trading order and in the WTO and other multilateral institutions, as well as the end goals it is trying to achieve. When the United States takes actions outside existing rules, the rationale for doing so should be clearly articulated, as well as the conditions under which US actions would be suspended or reversed (the "off ramps" of confrontation). The United States has used tariff increases and other trade-restricting measures to protect domestic industry and to address perceived American grievances against trading partners, free trade agreements, and the WTO. These actions have raised costs to American producers, injected substantial uncertainty into global supply chains, and weakened US alliances and the credibility of US commitments. While US production costs have increased, there is little to no evidence that this policy has led to increases in overall US employment. At the same time, there are real issues facing the global trading order, which cannot be addressed without US commitment and leadership.

Connectivity in the Indo-Pacific

The United States and Republic of Korea should continue to coordinate overlapping economic engagement efforts and expand areas of cooperation in the Indo-Pacific under

¹⁰⁶ Robert Atkinson and Clyde Prestowitz have made a similar proposal. See: Robert Atkinson and Clyde Prestowitz, "China's reaction to the pandemic shows why the US and its allies need a NATO for trade," Washington Post, May 20, 2020, <https://www.washingtonpost.com/opinions/2020/05/20/chinas-reaction-pandemic-shows-why-us-its-allies-need-nato-trade/>.

the Biden administration’s updated US Indo-Pacific strategy and the ROK New Southern Policy.¹⁰⁷ The two countries have already demonstrated clear strengths in terms of maintaining regular high-level dialogues on key economic issues and completing memorandums of understanding on priority economic engagement areas in Southeast Asia, including infrastructure and development finance, energy, science, and information communication technology. Moving forward, the alliance needs to focus on operationalizing these efforts to expand cooperation by more explicitly linking efforts where the US Indo-Pacific strategy overlaps with the ROK New Southern Policy’s “Prosperity” pillar. These efforts should include jointly led projects in the region on physical and digital infrastructure, development finance, smart cities, energy, and the digital economy.

Advanced Technologies and Innovation

The United States and the Republic of Korea already enjoy a rich and well-established collaborative partnership on science, technology, and innovation-related issues; through joint research and development projects, education and training programs; and in forums, dialogues, competitions, and other avenues allowing for the exchange of people and ideas. At the same time, the pace of technological progress has accelerated sharply, and emerging technologies in the areas of big data, artificial intelligence, the Internet of Things, quantum computing, biotechnology, clean energy and renewables are likely to usher in disruptive changes in both economies and national security. ***The United States and the Republic of Korea should develop a new, smart partnership that focuses on emerging technologies and the rapid pace of the digital economy and the Fourth Industrial Revolution in the areas described below. A central focus should be on increasing product, services, and supply chain security, particularly in the ICT sector.***¹⁰⁸ The US and ROK governments should launch an annual dialogue—both at the high- and working- level—that brings together both public and private sector leaders from both countries to identify strategic industries and areas for cooperation.

- The US and ROK governments should work together to facilitate deeper US-ROK private sector partnerships on **autonomous vehicles**. As part of its plan to build a “hydrogen economy,” the Moon administration is working to support the development of battery-powered autonomous vehicles that could take up at least half of the auto market by 2030. While Hyundai is leading this development, the company lags behind firms like Google and Baidu in auto software technology, such as AI, sensors, and logic chips. Since this software technology has been a part of the value chain where the United States has enjoyed comparative advantage, ROK and US firms have already pursued some key examples of cooperation such as Hyundai-Aptiv and Hyundai-Aurora.¹⁰⁹ There is no ongoing government-level cooperation between the two countries on autonomous vehicles, since the US Department of Commerce and the ROK Ministry of Trade, Industry, and Energy held a meeting in July 2019, in Washington, DC to discuss cooperation in this sector. Collaboration at the government level to establish shared principles such as safety standards vehicles will make it easier for US and ROK firms to jointly develop autonomous technologies.¹¹⁰
- The United States and the Republic of Korea should cooperate to develop more secure **artificial intelligence (AI)** not merely for its economic benefits, but because cooperative leadership increases their capacity to develop and set standards for ethical use of AI. The Republic of Korea has stated explicitly that it intends to become a global leader in AI, and its hardware strengths in AI pair well with US software strengths in AI, creating an opportunity to help secure both the hardware and software supply chains for AI by relying more on one another.
- The United States and the Republic of Korea can cooperate to promote responsible global development and deployment of **5G infrastructure**. While the latest US Commerce Department restrictions on Huawei put ROK companies in a difficult position for a global initiative, there is still room for collab-

107 This report assumes that there will be a large degree of similarity between the Trump administration’s US Indo-Pacific Strategy and that of the Biden administration, particularly in terms of the basic concept and assumption that “US security and prosperity depend on free and open access to the Indo-Pacific region, which will remain an engine of US, regional and global economic growth”, which is stated in the declassified US Strategic Framework for the Indo-Pacific. While it is possible that the name will change under the Biden administration, it is likely to see the Biden administration carry over some elements of the strategy from the previous administration.

108 Beau Woods, et al., Building a Smart Partnership for the Fourth Industrial Revolution, Atlantic Council, April 2018, <https://www.atlanticcouncil.org/in-depth-research-reports/report/building-a-smart-partnership-for-the-fourth-industrial-revolution/>.

109 Although it had been previously reported that Hyundai and Apple were in talks to produce an autonomous electric vehicle, Hyundai announced in February 2021 that it is no longer in talks with Apple, leaving the future of a potential joint effort unclear.

110 Eunji Go, “Korea-US ‘autonomous vehicle’ industrial cooperation dialogue...Request for cooperation in relation to Japanese export regulations,” Yonhap News Agency, July 11, 2019, <https://www.yna.co.kr/view/AKR20190710147600003>; Song Jung-a, “Hyundai Motor and Aptiv seal \$4bn autonomous car joint venture,” Financial Times, September 23, 2019, <https://www.ft.com/content/01721eae-ddf1-11e9-9743-db5a370481bc>; Edward White, Song Jung-a, and Peter Campbell, “Hyundai faces Big Tech head-on in driverless cars battle,” Financial Times, October 24, 2019, <https://www.ft.com/content/a56e947e-146c-11e9-b018-3ef8794b17c6>.

oration between the two countries. While waiting on the new administration's policy on 5G, the two countries should consider establishing a steering committee that consists of experts from industries and policy community to offer platform to discuss how to reconcile national security concerns with economic security. These bilateral efforts could eventually be linked to emerging multilateral efforts to coordinate the world's ten leading democracies (the so-called "D-10") on 5G.

- **Quantum computing** is an area where the two countries are already working together through private sector collaboration such as Samsung's \$55 million funding for US quantum computing hardware and software company IonQ.¹¹¹ The United States and the Republic of Korea should work to incentivize further private and public sector linkages on quantum computing to serve their shared interests in leveraging emerging quantum technology to develop more secure networks.
- The United States and the Republic of Korea should create sector-specific steering committees in **semiconductor**-related industries to cooperate with the private sector and work with non-governmental organizations to provide platforms to manage the convergence of business and national security risks.¹¹² The United States and the Republic of Korea, together with Japan, Taiwan, and the Netherlands, can establish these committees to identify shared geopolitical risks in their value chains, and to explore ways to enhance interdependence and secure supply chains among trusted partners.

Global Pandemic Preparedness

The United States and the Republic of Korea should work together to shape a collective global response to the current global pandemic and begin to prepare for future pandemics. These efforts should include measures to enhance global resilience and health security, reduce economic impacts, and safeguard values and principles of the rules-based international system. Based on lessons learned from the Republic of Korea's strong response to COVID-19, the United States and the Republic of Korea should take the lead in energizing innovative and multilateral approaches, including public-private partnerships as follows:¹¹³

- The United States and the Republic of Korea should take the lead in transforming the broad aspirations outlined in the Extraordinary Group of Twenty (G20) Leaders' Summit Statement on COVID-19 into concrete, measurable actions across the Indo-Pacific and beyond. These efforts should include crafting guidelines on how to assure global availability of medical supplies and personnel; distribute vaccines; and strengthen existing global health institutions.
- The United States and the Republic of Korea should lead in creating a multilateral mechanism through which the G20 or likeminded countries could enable surge capacity of medical supplies and capacity and share real-time data, scientific fact-finding, and lessons learned from COVID-19 containment and mitigation.
- Most immediately, the United States and the Republic of Korea should work together to restore and diversify supply chains for essential medical supplies and equipment including personal protective equipment (PPE) in order to lead global efforts for effective distribution.
- The United States, the Republic of Korea, and other allies should jointly identify production capacity necessary for national security, broadly defined to include critical materials and infectious diseases. They should also jointly develop stockpiles of critical equipment and materials, along with protocols for sharing supply during an emergency, similar to those for petroleum stockpiles under the International Energy Agency.
- The United States and the Republic of Korea can take the lead in demonstrating that democracies have core advantages over autocracies in responding to pandemics.

Global Supply Chains

The United States and the Republic of Korea should work together to diversify global supply chains in order to increase the robustness and resilience of the existing supply chains in the Indo-Pacific. The immediate reaction to the COVID-19 pandemic, coupled with effects to disengage the US and Chinese economies, has already led to numerous proposals to reallocate, shorten, and often localize global supply chains, including the Economic Prosperity Network led by the US government.

111 Francis Ho, "IonQ: An Investment in our Quantum Future," Samsung Newsroom, October 24, 2019, <https://news.samsung.com/us/ionq-investment-quantum-future/>.

112 Miyeon Oh, Robert Dohner, and Trey Herr, Global Value Chains in an Era of Strategic Uncertainty: Prospects for US-ROK Cooperation, Atlantic Council, November 2020, <https://www.atlanticcouncil.org/wp-content/uploads/2020/11/GLOBAL-VALUE-CHAINS-final-11-19-1.pdf>.

113 Miyeon Oh, Strategic Insights Memo: US-Japan-Korea Trilateral Cooperation on COVID-19, Atlantic Council, April 2020, <https://www.atlanticcouncil.org/wp-content/uploads/2020/04/US-Japan-Korea-Trilateral-Cooperation-on-COVID-19.pdf>.

- The United States should review its supply chain security proposal of November 2019 and begin a process of soliciting recommendations from the private sector in the United States and in allies like the Republic of Korea, in order to introduce a revised, more effective, and less costly proposal in the future. The United States' initiative on Securing the Information and Communications Technology and Services Supply Chain, despite substantial industry protest, grants the Commerce Department extensive powers to intervene and reverse ICT transactions. The initiative has introduced considerable uncertainty into supply chain economics, and may freeze supply chain decisions and investment until a track record on Commerce decisions is established.¹¹⁴
- The United States and the Republic of Korea should organize a private sector initiative to identify measures that would increase the robustness and resiliency of the *existing* Indo-Pacific supply chain. Restructuring global supply chains is a long-term, expensive task, as supply chains have developed geographically to take advantage of specializations, particularly in industries with high capital requirements, thereby strongly driven by market pressures on corporations.¹¹⁵ More analysis needs to be done on the costs of modifying supply chains, the lead times involved, and the costs and benefits of a range of options for providing greater security of supply. Before any potentially time-consuming and costly reallocation, the private sector initiative can also offer recommendations on supply chain restructuring that would provide significant benefits at low cost.
- The Republic of Korea should join the US efforts to diversify its supply chains and increase resilience as it has learned that over-reliance on a single country could cause major supply disruptions in related industries, from China's retaliation on ROK companies over the deployment of THAAD and the trade dispute between Japan and the Republic of Korea over three chemicals that are essential to the manufacturing of semiconductors. The ROK government should develop strategies to reduce its vulnerability to supply chain disruptions through close and effective communication with ROK firms in order to find mutually beneficial ways to restructure global supply chains.
- The United States and the Republic of Korea should expand cooperation in order to mitigate geopolitical shocks that disrupt global supply chains for advanced technologies. The intensifying race to dominate global technology creates new pressure on existing supply chains, and producers are increasingly relying on digitally integrated supply chains. Given that both countries have established industries for advanced technologies, the United States and the Republic of Korea should create a steering committee that is focused on advanced technology industries including semiconductor, AI, 5G, quantum computing, and autonomous vehicles, by working with other like-minded countries.

¹¹⁴ See, for example: Nihal Krishan, "'Enormous power grab': Business groups bash Commerce Department supply-chain security proposal," *Washington Examiner*, January 16, 2020, <https://www.washingtonexaminer.com/policy/economy/enormous-power-grab-business-groups-bash-commerce-department-supply-chain-security-proposal>. IBM's comment, in a letter of January 10, 2020, was that "the Proposed Rule would not achieve [its] objectives. It is massively overbroad, and...would harm the US economy, fail to enhance US security, and violate due process." See: "IBM Urges Commerce Department to Adjust Approach on IT Supply Chain Security," *Think Policy*, IBM, January 10, 2020, <https://www.ibm.com/blogs/policy/supply-chain-rule/>.

¹¹⁵ Willy Shih, "Bringing Manufacturing Back to the US Is Easier Said Than Done," *Harvard Business Review*, April 15, 2020, <https://hbr.org/2020/04/bringing-manufacturing-back-to-the-u-s-is-easier-said-than-done>.